

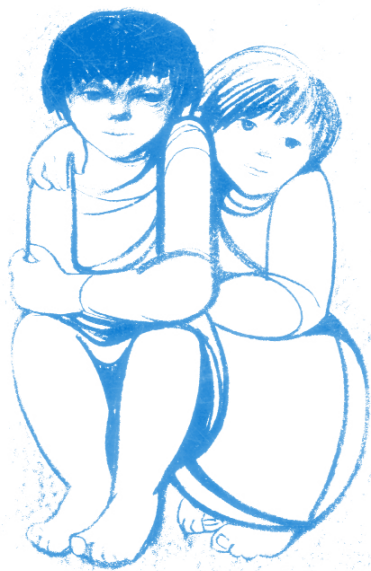
BIRTH AND GROWTH MEDICAL JOURNAL

35 | Supplement I

CMIN SUMMIT'26

From Evidence to Innovation
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PEDIATRIA

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POTENTIAL OF 3D PRINTING IN OPTIMIZING PEDIATRIC PHARMACOTHERAPY: BRIDGING EVIDENCE AND CLINICAL INNOVATION

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Introduction: Pediatric pharmacotherapy faces significant challenges due to the “one-size-fits-all” paradigm of industrial drug manufacturing, which often fails to meet the needs of children. Compounded medications represent the main alternative but are manually based and associated with potential dosing variability. Threedimensional printing (3DP) has emerged as a promising technology that enables the on-demand production of personalized dosage forms with adaptable forms, precise dosing, and tailored release profiles suitable for pediatric and neonatal populations.

Methods: A structured narrative review was conducted in the PubMed database using combinations of the terms “3D printing,” “additive manufacturing,” “Printing, Three-Dimensional,” “pediatric,” “infant,” “newborn,” “personalized medicine,” and “drug compounding.” Only studies published within the last 10 years addressing clinical applications of 3DP in pediatric and neonatal pharmacotherapy were included. Titles and abstracts were screened for relevance, followed by full-text assessment when appropriate.

Results: Of the 74 accessed documents, 41 studies were included (9 reviews and 32 experimental or clinical studies). Four main application areas were identified: personalized oral dosage forms, hospital-based manufacturing, rare metabolic diseases, and adherence-enhancing formulations. The 5 most frequently reported active substances were hydrocortisone (4 studies), propranolol, prednisolone, sildenafil (2 studies each), and caffeine for neonatal apnea. Semi-solid extrusion is a predominant technology. Overall, 3D printing enables precise/adjustable dosages, age-appropriate dosage forms, and improved palatability. The integration of this technology into hospital pharmacy services could constitute a viable strategy for automated personalized production at the point of care.

Discussion: 3D printing represents a significant opportunity for the transition from standardized therapeutic models to individualized approaches in pediatrics and neonatology. The recent publication of the EMA Questions & Answers on the Implementation of 3DP Technology (March 2026) marks a major regulatory breakthrough, providing concrete guidance on pharmaceutical development, GMP requirements, process validation, and control strategies. Hospital pharmacy-based 3DP initiatives may support safer and more personalized pediatric pharmacotherapy in Portugal.

Palavras-chave: personalized medicine, 3D printing, pediatric and neonatal pharmacotherapy, Hospital Pharmacy

PHYSICAL FITNESS IN ADOLESCENTS FROM NORTHERN PORTUGAL: A LOCAL ANALYSIS WITHIN THE FITBACK EUROPE FRAMEWORK

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Physical inactivity remains a critical global health challenge, with over 80% of adolescents failing to meet international recommendations. Health-related physical fitness (HRPF) is a robust biomarker for cardiometabolic health and psychosocial well-being. Based on the FitBack Europe project, which utilizes the evidence-based ALPHA protocol, this study aims to characterize the HRPF profile of adolescents in Porto Ocidental and examine the associations between adolescent/parental physical activity (PA) and fitness outcomes.

An observational cross-sectional study was conducted with 305 adolescents (51.5% male; mean age 15.58 ± 0.58 years) belonging to schools from Porto Ocidental. Sampling followed a stratified approach based on school type and socioeconomic status. The ALPHA battery was employed to assess body mass index (BMI), waist circumference (WC), handgrip strength (HG), standing long jump (SLJ), and cardiorespiratory fitness via the 20m shuttle run (SR) to estimate VO₂max. Normality was assessed using the Shapiro-Wilk test. Participants were classified into fitness zones (FitZone, Intermediate, Needs Improvement) according to European reference standards. Spearman's correlation analysed the association between weekly PA and HRPF ($p < 0.05$).

Anthropometric indicators were generally favourable, with 90.8% (WC) and 68.2% (BMI) of participants in the “FitZone.” However, neuromuscular and cardiorespiratory performance revealed significant vulnerabilities: only 46.9% reached the FitZone for HG, 48.2% for SLJ and a concerning 33.8% for VO₂max. Adolescent weekly PA was positively and significantly associated with HG ($rs=0.180$, $p=0.004$), SLJ ($rs=0.358$, $p<0.001$), VO₂max ($rs=0.263$, $p<0.001$) and SR performance ($rs=0.272$, $p<0.001$). No significant correlations were found between parental PA and offspring HRPF variables.

While body composition profiles appear stable, a substantial proportion of adolescents exhibit suboptimal fitness levels, particularly in cardiorespiratory capacity, where 66% fail to meet healthy standards. The strong correlation between individual PA and motor performance underscores the importance of active lifestyles for physiological development. These findings contribute to the European monitoring network and highlight the urgent need for targeted school-based interventions to improve cardiorespiratory health in Northern Portuguese youth.

Palavras-chave: fitness, aptidão física

IMMUNE-MEDIATED MECHANISMS DETERMINING THE COURSE OF NEONATAL INFECTIONS CAUSED BY STAPHYLOCOCCUS EPIDERMIDIS

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Introduction: Staphylococcus epidermidis (SE) is the leading cause of late-onset neonatal sepsis, especially affecting preterm newborns. While immune immaturity may facilitate bacterial invasion, only a subset of infants exposed to similar NICU risk factors develops infection, with variable severity depending on host-pathogen interactions. Elucidating immune mechanisms underlying differential susceptibility is key to improve diagnosis, therapeutic interventions and better stratify risk and predict outcomes.

Methods: Eleven SE clinical isolates from neonatal bloodstream infections from CMIN were characterised via whole genome sequencing (WGS), growth, and biofilm formation kinetics.

Cord blood samples from healthy, term non-infected newborns of both sexes delivered via elective caesarean section (CMIN-ULSSA) were collected. From these samples, cord blood mononuclear cells (CBMC) and granulocytes were isolated and challenged ex vivo with two distinct genotypic and phenotypic isolates. Cell supernatants were collected for cytokine ELISA cell pellets for RNA-sequencing. Whole cord blood immune populations were characterised by multiparametric flow cytometry.

Results /discussion: WGS showed 5/11 isolates sharing the same sequence type (ST) and antimicrobial resistance genes, suggesting nosocomial transmission and clonal spread. All isolates carried *mecA*, conferring β -lactam antibiotics resistance, indicating high burden of methicillin resistance. Resistance to common disinfectants was detected, supporting environmental persistence. Bacterial growth and biofilm formation were heterogeneous among isolates. Challenged leukocytes, particularly CBMCs, produced both proinflammatory cytokines (IL-6, TNF- α , IL-8 and IL-1 β) and the anti-inflammatory cytokine IL-10. TNF- α and IL-1 β are early mediators of systemic inflammation, while IL-6 contributes to the acute-phase response and IL-8 promotes neutrophil recruitment. Although IL-10 was detected, the response was dominated by pro-inflammatory cytokines. IL-12p70, a cytokine associated with T helper 1 (Th1) cells polarization, was undetectable under assay conditions.

Predominant ST isolate triggered higher overall cytokine production. These strain-dependent inflammatory signatures suggest differential host-pathogen interactions.

These findings emphasise the role of pathogen-specific immune activation in modulating disease expression, supporting the need for tailored diagnostic and therapeutic approaches in neonatal sepsis.

Palavras-chave: Staphylococcus epidermidis, Neonatal sepsis, Antimicrobial Resistance, Innate immunity

PEDIATRIC LARYNGOMALACIA: A 10-YEAR DESCRIPTIVE ANALYSIS IN A TERTIARY CARE CENTER

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Background: Laryngomalacia is the most common congenital laryngeal anomaly and the leading cause of stridor in infants. Most cases resolve spontaneously, but severe forms may need surgical intervention. Noninvasive respiratory support is emerging as a potential adjunct therapy.

Methods: This retrospective descriptive study aimed to describe the clinical features and management of pediatric laryngomalacia over ten years (jan/2015-dec/2025) in a portuguese tertiary hospital. Categorical variables are expressed as frequencies and percentages; continuous variables as medians with interquartile ranges or means with standard deviations, as appropriate.

Results: Thirty-four patients were included (55.9% female), most born at term (76.5%), with a median birth weight of 3220 [2635–3645] g. Median age at diagnosis was 29 [5–110] days. All presented with stridor, inspiratory in 64.7%. Respiratory distress occurred in 38.3%, feeding difficulties in 29.4%, and oxygen desaturations in 23.5%. Laryngomalacia Type II was the most common (52.9%) and was mild in 55.9%, moderate in 14.7%, and severe in 26.5%. Comorbidities were present in 38.2%, most frequently gastro-oesophageal reflux disease (GERD)(26.5%). Genetic syndromes were present in 23.5%, including Down, Coffin-Siris, and X-linked Opitz GBBB, mitochondrial cytopathy, argininosuccinic aciduria, and Pierre Robin sequence. Conservative management was used in 67.6%, while 29.4% required supraglottoplasty. Noninvasive ventilation (NIV) with bilevel positive airway pressure was used in 32.4%, with a median age at initiation of 27 [11–143] months, and a median duration of 13 [7–116] months. Among patients requiring NIV, eight (72.7%) had associated conditions, including GERD, genetic syndromes, tracheomalacia, epileptic encephalopathy, and severe bronchopulmonary dysplasia. Spontaneous resolution occurred in 55.9%, and the median symptomatic duration was 12.8 [4.45–26.75] months.

Discussion: This cohort reflects the complexity of a tertiary referral setting, with a substantial burden of comorbidities, a high surgical rate, and frequent NIV use. The high prevalence of genetic syndromes and multifactorial airway involvement likely contributed to prolonged NIV use and persistent disease, highlighting the importance of a multidisciplinary approach. Further prospective studies are needed to better define the role of NIV in laryngomalacia management, particularly as an adjunct or alternative to surgery in selected patients.

Palavras-chave: Laryngomalacia, Noninvasive Respiratory Support, Stridor, Supraglottoplasty

FREQUENT TRIGGER, UNCERTAIN IMPACT: RHINOVIRUS AND SEVERITY IN PEDIATRIC ASTHMA EXACERBATIONS

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Asthma exacerbations in children are a relevant cause of hospitalization and are often triggered by respiratory viral infections, particularly rhinovirus. However, the relationship between viral detection and clinical severity, as well as the predictive value of prior clinical history, remains unclear.

A retrospective observational study was conducted, including children >6 years admitted to our pediatric department over three years for asthma exacerbation or acute recurrent wheezing, with analysis of clinical, virological, and severity-related features.

A total of 39 children were included (mean age 9.0 ± 2.6 years; 53.8% male). Atopic comorbidity was common, particularly allergic rhinitis (47.4%), and 38.5% had tobacco exposure. Most had no prior severe disease, with 57.1% reporting no exacerbations and 51.3% no previous hospitalizations (median 0), while only 39.5% were on inhaled maintenance therapy. All required supplemental oxygen, 38.5% via HFNC and 5.1% ICU admission. Median length of stay was 4 days (IQR 3–6). Complications included atelectasis (12.8%), pneumothorax (7.7%), and one deep vein thrombosis, with no mortality.

A viral agent was identified by PCR in 69.2% of cases, with rhinovirus being the most frequent (56.4%) and viral co-infection detected in 28.2%. Viral detection was more frequent in months such as January, May, October, and December, whereas rhinovirus was identified across multiple periods without a defined seasonal pattern. *Mycoplasma pneumoniae* testing was performed in 33.3% and was positive in one case.

In multivariable analyses, rhinovirus was not associated with clinical severity across outcomes. No significant association was observed with HFNC therapy (OR 0.64; 95% CI 0.15–2.77; $p = 0.553$), length of stay ($\beta = +1.55$ days; 95% CI -2.53 to 5.62; $p = 0.442$), or maximum FiO_2 ($\beta = -5.44\%$; 95% CI -13.08 to 2.19; $p = 0.154$). Adjustment for body mass index (BMI) did not modify these findings, although a trend towards higher FiO_2 with increasing BMI was observed ($\beta = +0.69\%$ per unit; 95% CI -0.13 to 1.51; $p = 0.094$).

In this sample, many children with severe exacerbations had no prior severe disease, suggesting clinical history alone may be insufficient to predict severity, although the retrospective design limits assessment of adherence and symptom control. Despite the high prevalence of rhinovirus, no association with severity was observed, highlighting the role of host factors and the need for improved risk stratification in pediatric asthma.

BEYOND THE DIAGNOSIS: APPLYING THE PEDCOM SCALE TO CHARACTERISE COMPLEXITY IN A PEDIATRIC PALLIATIVE CARE TEAM

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Introduction: Pediatric palliative care (PPC) aims to ensure quality of life for children with life-limiting conditions and their families. Pediatric Palliative Care Teams (PPCT) are essential for a coordinated approach, however, the clinical profile of patients benefiting from this support remains poorly characterised in Portugal. This study aimed to characterise the clinical profile of patients followed by the PPCT of a tertiary care hospital, using the PedCom Scale and the Association for Children with Life-threatening or Terminal Conditions and their Families (ACT) classification.

Methods: A retrospective, analytical study based on clinical data collected from hospital records over a 12-month period. Patients were classified according to the PedCom Scale (English version) and the ACT classification.

Results: Sixty-five patients were included (median age 9 years; 52.3% female). According to the ACT classification, 67.7% ($n=44$) belonged to group 4. Cerebral palsy was the most frequent diagnosis ($n=21$; 32.7%). Using the PedCom Scale, the mean score was 12.1 points (range 3.5–24), with 95.4% ($n=62$) classified as complex chronic pediatric patients. Each patient involved a mean of 7 specialties and 4 medications. Specific nutritional needs were identified in 69% of patients (40% with gastrostomy) and specific respiratory care needs in 30.7% (60% on non-invasive ventilation; 10% with tracheostomy). Severe psychomotor delay with high caregiver dependency was documented in 72.3%, with a mean of 3 specific therapies per patient. Special educational needs were identified in 78.4%, with 18.5% unable to attend school. Three deaths were recorded over the 12-month period.

Conclusion: This cohort highlights the high clinical, functional and social complexity of patients receiving PPC. The significant fragmentation of care, reflected by a mean of 7 specialties, underscores the indispensable role of the PPCT as a coordinating link between health-care teams, patients and families. The PedCom Scale proved to be a structured and valuable tool for the systematic characterisation of this population, supporting the development of individualised care strategies. The absence of national validation highlights the need for multicentre studies to adapt and validate the scale for the Portuguese pediatric population, with the potential to become a standardised screening and referral tool for PPC at a national level.

Palavras-chave: Pediatric Palliative Care Team, Pediatric palliative care, complex chronic pediatric patients

HEALTH LITERACY AND HUMAN MILK DONATION: KNOWLEDGE, ATTITUDES AND BEHAVIORAL INTENTIONS AMONG PREGNANT WOMEN IN PORTUGAL

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Introduction: Health literacy (HL) plays an important role in maternal and neonatal health, including breastfeeding (Valero-Chillerón et al., 2022). When mother's own milk is unavailable, donor human milk (DHM) is the best alternative, but its availability depends on women's engagement with human milk banks (HMBs). Understanding how HL is associated with knowledge, attitudes and behavioral intentions (KAI) regarding human milk donation (HMD) may help inform strategies to improve donor recruitment and information provision. This study aimed to: (1) assess HL levels among pregnant women in Portugal; (2) assess KAI regarding HMD; (3) analyse the association between HL and KAI and identify factors associated with these dimensions; and (4) explore participants' reasons for not donating or refusing DHM, as well as their informational needs regarding HMBs and HMD.

Methods: A cross-sectional study was conducted with 398 pregnant women in Portugal using an online questionnaire that included the Portuguese short version of the European Health Literacy Survey (Pedro et al., 2016) and an adapted questionnaire used to assess KAI regarding HMD (Wang, 2018). Descriptive statistics, Pearson correlation and generalized linear models were applied.

Results: Overall, 56.3% of participants had inadequate or problematic HL. Participants showed good awareness of the benefits of human milk but more limited knowledge regarding donation procedures and HMB operations. Attitudes towards HMD were generally positive, and behavioral intentions were favorable, although personal intention to donate was lower. HL was positively correlated with knowledge ($r = 0.229$, $p < 0.001$), attitudes ($r = 0.135$, $p = 0.008$) and behavioral intentions ($r = 0.117$, $p = 0.021$), although correlations were weak. In the multivariable models, HL was independently associated with knowledge ($B = 0.052$, $p = 0.002$) and attitudes ($B = 0.064$, $p = 0.037$), but not with behavioral intentions. Having heard of HMBs was independently associated with knowledge ($B = 2.764$, $p < 0.001$), attitudes ($B = 2.681$, $p < 0.001$) and behavioral intentions ($B = 1.033$, $p = 0.002$). The main barriers to donation were unfamiliarity with HMBs, safety concerns and logistical constraints, and most participants reported needing more information about HMB operation, donation procedures and requirements.

Conclusion: In this sample of pregnant women, participants showed positive attitudes and generally favorable behavioral intentions regarding HMD, but limited knowledge about donation procedures and HMBs operations. HL was associated with knowledge and attitudes, whereas having heard of HMBs was associated with knowledge, attitudes and behavioral intentions. These findings suggest that increasing awareness and providing clear and accessible information about HMBs may be important strategies to promote engagement with HMD.

Palavras-chave: Health literacy; Pregnancy; Human milk banks; Health knowledge, attitudes and practice

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SURGICAL TREATMENT OF OBESITY IN ADOLESCENCE: INITIAL EXPERIENCE OF A TERTIARY CENTRE

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Introduction: Severe obesity in the paediatric population is associated with significant early morbidity, including metabolic and respiratory disorders, with a relevant impact on quality of life. Bariatric surgery has emerged as an effective therapeutic strategy in selected cases. This study aims to characterize the initial results of implementing a paediatric bariatric surgery program in a tertiary centre.

Methods: Retrospective observational study including patients who underwent bariatric surgery in a tertiary centre. Demographic variables, body mass index (BMI), associated comorbidities, type of procedure, complications, and weight and clinical outcomes at 1, 6 and 12 months postoperatively were analysed.

Results: Eight patients were included between January 2023 and December 2025, with an equal sex distribution and a mean age of 16.75 years. The mean preoperative BMI was 47.3 kg/m². The most common comorbidities were obstructive sleep apnea (OSA) and metabolic disorders (including insulin resistance and dyslipidemia). All patients underwent sleeve gastrectomy, with no reported surgical complications.

A mean BMI reduction of 11.4 kg/m² and up to 47% total body weight loss at 12 months were observed, with a relevant clinical impact on associated comorbidities in 6/8 patients. Regarding comorbidities: 6/7 patients with OSA discontinued ventilatory support; 3/4 patients with preoperative metabolic disorders showed biochemical improvement during follow-up; and one patient experienced resolution of idiopathic intracranial hypertension.

Discussion: Bariatric surgery is a safe and effective intervention in this population, with significant impact on weight loss and improvement of comorbidities. These findings reinforce the metabolic and functional benefits of early surgical intervention in adolescents with severe obesity. However, studies with larger sample sizes and longer follow-up are required to assess the durability of these outcomes.

CLINICAL, IMAGING AND HEARING OUTCOMES IN CONGENITAL CYTOMEGALOVIRUS INFECTION: A 15-YEAR RETROSPECTIVE COHORT STUDY

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Introduction: Congenital cytomegalovirus (cCMV) is the most common congenital infection and the leading non-genetic cause of childhood sensorineural hearing loss (SNHL). Most infected newborns (NB) are asymptomatic at birth, yet hearing loss may be congenital, progressive or delayed in onset. Early prognostic markers remain limited. We aimed to describe a 15-year cohort of NB with cCMV and identify factors associated with SNHL.

Methods: Retrospective study including all NB with cCMV born at a tertiary center between May 2010 and May 2026. Clinical, laboratory, neuroimaging, and audiological data were collected. Associations with SNHL were analyzed using Fisher's exact test ($p < 0.05$).

Results: Thirty-four NB were included. In 12 cases, timing of maternal infection was unknown; among known cases, infection occurred most frequently in the second trimester (54.5%). Prenatal ultrasound abnormalities were identified in 9 fetuses (intrauterine growth restriction and/or ventriculomegaly). Twenty-four NB (70.5%) were born at term and 10 (29.4%) were small for gestational age. Twenty-two NB (64.7%) were considered symptomatic. Clinical manifestations included thrombocytopenia ($n=8$), cholestatic jaundice ($n=6$) and anemia ($n=5$). Cranial ultrasound (cUS) was abnormal in 16 NB (47.0%), 6 of whom underwent brain MRI, all showing CMV-compatible abnormalities. SNHL occurred in 3 (8.8%): 2 bilateral and 1 unilateral; all were congenital and progressive. Notably, 2 of the 3 affected infants were clinically asymptomatic at birth. No ophthalmological abnormalities were detected. Nine children were later diagnosed with neurodevelopmental disorders. Antiviral treatment was prescribed in 12 infants (35.3%); five developed leukopenia and/or neutropenia. All infants with SNHL had abnormal cUS findings, and neuroimaging abnormalities were the only factors associated with SNHL ($p=0.03$). No prenatal, neonatal clinical or laboratory variables were associated with SNHL.

Conclusions: Neonatal clinical presentation alone did not predict hearing outcomes. Neuroimaging abnormalities were the only features associated with SNHL in this cohort, supporting the potential role of imaging-based risk stratification. These findings should be interpreted in light of the small sample size, which limits statistical power. Long-term audiological surveillance is warranted for all infants with cCMV, including those initially asymptomatic.

ASSESSMENT OF KNOWLEDGE REGARDING PALLIATIVE CARE AMONG HEALTHCARE PROFESSIONALS AT A TERTIARY AND UNIVERSITY HOSPITAL

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Introduction: The success of palliative care provision for families with children suffering from complex chronic illnesses depends on the knowledge and skills of all healthcare professionals involved.

Methods: The Intra-Hospital Pediatric Palliative Care Support Team conducted an observational, crosssectional study using a non-probabilistic convenience sample of healthcare professionals working at CMINULSSA. An online questionnaire was distributed via institutional email using Google Forms, and participation was anonymous and voluntary. The survey included sociodemographic data, professional training, and knowledge of palliative care assessed using the Portuguese version of the Palliative Care Knowledge Test (PCKT).

Results: A total of 152 emails were sent to physicians and 56 to nurses, with 53 responses obtained (25.6%). The mean age was 45 years, with 34% over 55 years old, and most respondents were female (84%). Only 15 participants had formal training in palliative care, while 88% reported only basic-level training. Additionally, 32.7% had prior personal experience with palliative care through family or friends, and 68% reported not knowing how palliative care is organized in Portugal. More than half of respondents rated their knowledge as insufficient (51%) and felt incompetent to provide palliative care (53%), while 58% had considered pursuing further training. Knowledge assessment showed high scores in Concept and Ideology of Palliative Care (mean 87%, median 92%) and Dying Process and Grief (87%), as well as good results in Holistic Approach and Communication (mean 80%, median 86%). However, lower scores were observed in Care and Symptom Management (mean 53%, median 59%). Knowledge in Pediatric Palliative Care was moderate to high (mean 74.5%, median 88.8%).

Conclusion: Participation in the study was limited, and few professionals had formal training in palliative care. Although respondents demonstrated a good understanding of core concepts and holistic principles, important gaps were identified in symptom management and clinical care. These findings highlight the need for healthcare institutions to invest in structured training programs and promote supportive learning environments to strengthen palliative care competencies.

Palavras-chave: Pediatric Palliative care; Knowledge

CARDIAC SURVEILLANCE IN CHILDREN WITH DUCHENNE MUSCULAR DYSTROPHY: A CROSSSECTIONAL STUDY FROM A TERTIARY HOSPITAL

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Introduction: Duchenne muscular dystrophy (DMD) is a severe neuromuscular disease characterized by progressive muscle weakness, with onset in early childhood. Cardiac involvement is common and a major morbidity factor. Regular cardiac surveillance for timely initiation of cardioprotective therapies is essential in prolonging survival in these patients. In this study, we aim to characterize cardiac involvement in pediatric patients with DMD with current cardiac and neurologic monitoring at Centro Materno-Infantil do Norte (CMIN).

Methods: A cross-sectional, retrospective study was conducted by reviewing the medical records of all patients diagnosed with DMD who were referred to the Cardiology outpatient appointment for cardiac monitoring. The primary outcome was defined as the presence/absence of ventricular dysfunction, with secondary outcomes including specific ECG abnormalities, frequency of cardiac monitoring, initiation of cardioprotective medication, and the necessity for multidisciplinary monitoring of the disease.

Results: A total of 22 male cases were identified, with a median age of 13.5 years (IQR 5.0) at the date of data collection; the median diagnostic age was 4.0 years (IQR 3.0). Patients were referred for Cardiac Evaluation at a median age of 7.5 years (IQR 4.25) and at a median time of 4.8 years (IQR 3.98) post-diagnosis.

All patients underwent electrocardiogram (ECG) and echocardiographic evaluation at their first cardiology appointment, with no abnormalities detected at baseline. Among the 22 patients, 17 (77.3%) maintained annual cardiac follow-up with ECG and echocardiography, while 5 (22.7%) were evaluated biannually. Additionally, 17 patients (77.3%) underwent Holter monitoring at least once during follow-up, whereas only 1 patient (4.5%) was assessed using cardiac magnetic resonance imaging (MRI).

Six patients (27.3%) developed ventricular dysfunction at a median age of 15 years (range: 11–17 years). All patients received corticosteroid therapy, and 18 (81.8%) initiated cardioprotective treatment at a mean age of 10.83 years (SD $\pm$ 0.86), starting with an angiotensin-converting enzyme (ACE) inhibitor. Among these, 7 patients (38.9%) required additional therapy with beta-blockers, and 6 (33.3%) progressed to spironolactone, resulting in triple therapy. Of the patients receiving triple therapy, 2 (33.3%) were transitioned from ACE inhibitors to angiotensin receptor–neprilysin inhibitors (ARNI), and 1 (16.7%) additionally initiated a sodium–glucose cotransporter 2 (SGLT2) inhibitor.

Discussion: This cross-sectional analysis shows early diagnosis but slightly delayed cardiology referral. Most patients underwent regular annual evaluations, although advanced imaging such as cardiac MRI was rarely used. While most received cardioprotective therapy, the need for escalation of medications in some cases suggests disease progression, highlighting the importance of timely surveillance and optimized management.

Palavras-chave: Duchenne muscular dystrophy (DMD), Cardiomyopathy, Pediatric cardiology, Ventricular dysfunction, Cardiac surveillance

HOW TO SLEEP LIKE A BABY™: AN INTERVENTION PROJECT IN A NORTHERN PORTUGAL PRIMARY CARE UNIT

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Introduction: Sleep is essential for child health and development. Reduced sleep duration is associated with cognitive, emotional, behavioural and metabolic impairments. In Portugal, data on childhood sleep remain limited, although studies suggest shorter sleep duration and a higher prevalence of sleep disturbances than in European peers.

Objectives: To characterize sleep habits, quality and duration in children aged 2-10 years in a primary care setting in northern Portugal and to improve them by 20% through a multimodal sleep hygiene intervention targeting caregivers.

Methods: This intervention study included two cross-sectional assessments at T0 (pre-intervention) and T3 (3 months later). A convenience sample was recruited through online questionnaires. Instruments included the CSHQ-PT and a sleep hygiene literacy questionnaire. The intervention comprised four modalities; T3 participants were grouped into active (session and/or video; n = 10) and passive (leaflet and/ or questionnaire only; n = 20) groups.

Results: The sample included 103 participants at T0 and 30 at T3. Mean CSHQ-PT score was 47.34 at T0 and 46.50 at T3, both above the cut-off (≥ 41), with no significant difference ($p = 0.328$). The passive group had lower total scores ($p = 0.027$), as well as lower Sleep Duration ($p = 0.003$) and Night Wakings ($p = 0.034$), interpreted with caution due to self-selection. A negative correlation was observed between score and age ($p = -0.221$, $p = 0.025$). Most children met recommended sleep duration (89.3%), although inadequacy was highest in 2-year-olds (28.6%). Social jetlag was observed, with bedtime 30 minutes later and wake time 60 minutes later on weekends than on weekdays ($p < 0.001$).

Conclusion: These findings confirm a high prevalence of sleep disturbances and clinically relevant social jetlag among Portuguese children. The intervention showed limited impact and did not achieve the predefined 20% improvement target, highlighting the need for more structured and sustained sleep promotion strategies in primary care.

Palavras-chave: Sleep disturbances, Sleep hygiene, Primary care, Sleep habits, Social jetlag

FOOD ALLERGY IN CHILDREN: A DESCRIPTIVE STUDY FROM A TERTIARY CENTER

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Introduction: Food allergy (FA) is an increasingly recognized global health problem. Clinical spectrum ranges from mild symptoms to life-threatening reactions such as anaphylaxis. Early recognition is essential for appropriate management, including a written emergency action plan and appropriate use of adrenaline. Despite increasing awareness, data on patient characteristics and disease distribution remain limited. This study aims to characterize patients with FA, including both IgE and non-IgE-mediated forms, followed in our center.

Methods: Retrospective observational study of patients referred for food allergy to the Pediatric Allergy Clinic of Centro Materno-Infantil do Norte, a tertiary center in Portugal. Gender, age at referral, type of FA (IgE and non-IgE-mediated), and main allergens implicated were analyzed.

Results: A total of 249 patients were included, 64.7% male, with a median age at referral of 2 years (IQR 0.5–6.0) and a current median age of 6 years (IQR 3.0–9.0). Among patients with confirmed FA, IgE-mediated reactions were the most frequent diagnosis (78.7%), followed by food protein-induced enterocolitis syndrome (FPIES) (13.7%) and allergic proctocolitis (7.6%).

Among patients with IgE-mediated disease, egg was the most frequently implicated allergen (30.6%), followed by tree nuts (26.0%), particularly walnut and hazelnut, and cow-milk protein (21.4%). Kiwi (9.7%), peanut (7.7%), and seafood (5.6%) were less frequent. Multiple food allergies were common, with egg involved in most combinations (74.2%), particularly with milk (25.8%) and kiwi (16.1%). Anaphylaxis, reported in 6.8% of patients, was mainly triggered by tree nuts, especially walnut and hazelnut. In these cases, molecular allergen testing avoids unnecessary dietary restrictions by distinguishing species-specific allergens and cross-reactive allergens.

Among non-IgE-mediated food allergy, FPIES was mainly triggered by egg (31.3%) and fish (28.1%), with a median age at referral of 1 year (IQR 0–3.5). As for allergic proctocolitis, it was also predominantly identified at earlier ages, with the majority of referrals occurring in the first year of age.

Conclusion: FA presented early and was predominantly IgE-mediated, with tree nuts, egg, and milk as the most frequent allergens. Tree nuts were the main trigger of anaphylaxis. These findings are consistent with the general population and highlight the heterogeneity of food allergy and the importance of early specialized care.

Palavras-chave: Food allergy, Pediatric population, IgE-mediated allergy, FPIES, Allergic proctocolitis

PEDIATRIA

POSTERS

JUVENILE MYELOMONOCYTIC LEUKEMIA WITH NUP98::PHF23 FUSION: A CASE REPORT

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Introduction: Juvenile myelomonocytic leukemia (JMML) is a rare myeloid malignancy of early childhood arising from hematopoietic stem or progenitor cells. It is characterized by clonal proliferation within the myeloid lineage. Due to its rarity and heterogeneous clinical presentation, JMML remains a diagnostic challenge, often requiring integrated clinical, laboratory and molecular evaluation.

Case clinic: A 3-year-old boy was admitted to IPO-Porto presenting with purpuric lesions, cutaneous nodules, and hepatosplenomegaly. A comprehensive diagnostic workup was performed, including bone marrow karyotyping, FISH, NGS using the TruSight™ RNA Fusion and oncoReveal™ Myeloid panels. Bone marrow karyotype analysis revealed no cytogenetic abnormalities. NGS with the RNA fusion panel identified an oncogenic fusion transcript, NUP98::PHF23, while the myeloid panel detected a likely oncogenic KRAS variant (G12A) (VAF=7.56%). FISH analysis was negative for BCR::ABL1 and KMT2A rearrangements. Based on the clinical and molecular findings, a diagnosis of juvenile myelomonocytic leukemia was established. Azacitidine was initiated, achieving hematologic response and disease stabilization as a bridge to hematopoietic stem cell transplantation. After the transplant, molecular monitoring was performed using bone marrow karyotype and FISH targeting NUP98 rearrangement. The first evaluation showed a 46,XX karyotype, consistent with a female donor, and the NUP98 rearrangement was detected in 6% of analyzed cells. The second evaluation, performed approximately five months post-transplant, revealed a 46,XY karyotype, with NUP98 rearrangement in 38% of analyzed cells, suggesting persistent disease.

Discussion: In this case, although the identification of a KRAS mutation suggest the diagnosis of JMML, as RAS pathway alterations are a hallmark of the disease, the observed VAF suggests it is unlikely to be the primary genetic event. Notably, the presence of the rare NUP98::PHF23 fusion, typically associated with acute myeloid leukemia and poor prognosis, indicates a more complex molecular profile and potential cooperative oncogenic mechanisms. Overall, this case highlights the importance of comprehensive molecular characterization in JMML for accurate diagnosis, prognostic stratification, and disease monitoring. The identification of rare genetic events, such as NUP98::PHF23, may have significant clinical implications and warrants further investigation.

Palavras-chave: Juvenile myelomonocytic leukemia, NUP98::PHF23 fusion

TRANSIENT NEONATAL CHOLESTASIS SIGNALING THE NEED FOR NON-INVASIVE VENTILATION: TWO CASE REPORTS

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Transient neonatal cholestasis (TNC) affects 2% of infants in neonatal intensive care, with risk factors including prematurity, low birth weight, perinatal asphyxia, sepsis, and prolonged parenteral nutrition. Hypoperfusion causes hepatic ischemia, while respiratory failure leads to hypoxia, contributing to hypoxic hepatitis and cholestasis. Non-invasive ventilation (NIV) may improve oxygenation and reduce liver injury. We report two cases highlighting TNC as an indicator for the need for NIV.

Case 1: A 36+6-week male newborn with fetal growth restriction (birth weight 2000g) was readmitted at 20 days for respiratory distress, feeding difficulties jaundice and acholic stools. Labs indicated conjugated hyperbilirubinemia (BT/BD 12.3/8.6 mg/dL) and elevated liver enzymes (AST/ALT 210/132UI/L, GGT 55UI/L), suggesting cholestasis. He was transferred to a tertiary center, started NIV with oxygen supplementation, enteral feeding, fat-soluble vitamins and ursodeoxycholic acid (UDCA). He was diagnosed with laryngomalacia, contributing to upper airway obstruction and hypoxemia.

Case 2: A 30-week male newborn with fetal growth restriction (birth weight 820g) and perinatal asphyxia (Apgar 4/8/8) was transferred at 2 months due to multifactorial cholestasis. He had bronchopulmonary dysplasia and presented with jaundice, coarse facial features, hepatosplenomegaly, respiratory distress, and feeding difficulties. Labs showed conjugated hyperbilirubinemia (BT/BD 8.77/6.71 mg/dL) and elevated liver enzymes (AST/ALT 220/104UI/L, GGT 262UI/L). He started NIV, fat-soluble vitamin supplementation and UDCA.

Hypoventilation was confirmed in both infants by blood gas analysis, showing respiratory acidosis and elevated bicarbonate. After starting NIV, both improved clinically, with resolution of respiratory distress and adequate weight gain.

Extensive investigation ruled out biliary atresia and other causes of cholestasis, including a negative genetic panel. Cardiac evaluation was normal.

Case 1 at 3 months had normal oxygenation, discontinued NIV and cholestasis resolved completely. Case 2 by 4 months, remains on NIV with nearly resolved cholestasis.

Conclusion: TNC may signal clinical instability, particularly in cases of impaired ventilation and chronic hypoxemia. Improvement after NIV suggests the role of respiratory optimization in hepatic recovery, enhancing the importance of a multidisciplinary approach and considering respiratory dysfunction in managing cholestasis.

Palavras-chave: Cholestasis; Non-Invasive Ventilation

BEYOND STEROIDS: A GENETIC DIAGNOSIS IN PEDIATRIC NEPHROTIC SYNDROME

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Introduction: Pediatric nephrotic syndrome (NS) is a heterogeneous condition, most often idiopathic and corticosteroid-sensitive. In steroid-resistant cases, genetic causes — particularly NPHS2 mutations — are common and typically associated with poor response to immunosuppressive therapy. Early identification of genetic forms is crucial to guide management and avoid ineffective treatments.

Case Report: A 2-year-old boy, with no significant past medical history, except for a maternal uncle with persistent hematuria, presented to the emergency department with macroscopic hematuria and a three-day urticarial rash that resolved with hydroxyzine. Physical examination was unremarkable. There was no history of recent infections, fever, travel, or immunizations. Laboratory evaluation revealed hypoalbuminemia (2.5 g/dL), hypertriglyceridemia, and an elevated erythrocyte sedimentation rate (49 mm/h); urinalysis detected nephrotic-range proteinuria (protein/creatinine ratio (uPCR) 6.4 g/g) and microscopic hematuria. Initial onset NS was diagnosed, and treatment with prednisolone (60 mg/m²/day), and a normal-protein low-sodium diet was started. Further workup showed hypogammaglobulinemia, negative viral serologies, normal immunologic screening, and normal abdominal and renal ultrasounds. After 4 weeks of full-dose corticosteroid therapy, due to persistent hypoalbuminemia and nephrotic-range proteinuria, the child was transferred to a tertiary care hospital for kidney biopsy. The histopathology suggested minimal change disease. Pulse therapy with methylprednisolone (15 mg/kg/dose, three alternate-days doses) was administered without remission. Cyclosporine was initiated with a gradual corticosteroid tapering, leading to a partial remission (uPCR 1.5 g/g) and serum albumin >2.5 g/dL. Genetic testing identified one pathogenic and one hypomorphic NPHS2 variants, consistent with autosomal recessive NS.

Discussion: Steroid resistance and macroscopic hematuria are associated with poorer prognosis in pediatric NS. The identification of NPHS2 variants confirmed a genetic form typically unresponsive to immunosuppression; however, a partial response to cyclosporine was observed. This case highlights the value of early genetic testing in steroid-resistant NS to optimize treatment, refine prognosis, and enable appropriate genetic counseling.

Palavras-chave: nephrotic syndrome

FUNCTIONAL NEUROLOGICAL DISORDER AS A STROKE MIMIC IN AN ADOLESCENT

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Introduction: Functional neurological disorder (FND) is a neuropsychiatric condition with an incidence of 18.3 per 100,000 children. It predominantly affects female adolescents and is mainly characterized by motor and sensory symptoms not explained by structural or pathophysiological abnormalities of the nervous system. FND may have a sudden onset, mimicking acute neurological disease such as stroke. Diagnosis is clinical and is supported by positive signs of inconsistency, incongruence, variability and distractibility, together with exclusion of organic disease.

Case Report: A 16-year-old girl with tension-type headache and anxiety presented to the emergency department with slurred speech, blurred vision, right-sided weakness and sensory deficit evolving over a few hours. A stroke protocol was activated. Blood tests, including coagulation and D-dimer, as well as CT angiography were unremarkable. Neurological assessment revealed positive signs of FND, including hesitant responses, excessive concern about facial asymmetry, inconsistent sensory symptoms, right arm drift without pronation, give-way weakness, huffing and puffing affecting the right upper and lower limbs, and variable pattern of gait, alternating between normal and right leg dragging.. She had difficulty performing movements on examination but was able to stand and walk without imbalance. The diagnosis was established through the identification of multiple positive clinical signs of FND. Following discussion of the diagnosis and clarification of the incongruities between the reported symptoms and the objective clinical findings, the adolescent showed progressive functional improvement. She was subsequently discharged from the emergency department with referral to Child and Adolescent Psychiatry.

Discussion: This case highlights FND as an important differential diagnosis in adolescents presenting with acute focal neurological deficits. Presentation with motor and sensory symptoms mimicking stroke is consistent with the most commonly reported pediatric patterns. Adolescence, female sex, and anxiety are frequently associated factors, although none are required for diagnosis. Recognition of positive signs, clear communication of the diagnosis while validating symptoms, and referral for multidisciplinary biopsychosocial care are central to prognosis, with generally better outcomes when diagnosis and intervention are timely.

Palavras-chave: stroke, functional neurological disorder

NEURODEVELOPMENTAL PROFILES OF CHILDREN WITH GENETIC VARIANTS IN A TERTIARY CARE SETTING

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Introduction: Genetic variants contribute substantially to the etiology of neurodevelopmental disorders (NDD), with several genomic regions identified as hotspots of vulnerability.

This study aimed to characterize diagnostic pathways and genetic causes of NDD in patients followed in a pediatric neurodevelopment unit.

Methods: Retrospective descriptive study of patients with confirmed pathogenic genetic variants followed at a tertiary center. Demographic, clinical, and genetic data were analyzed descriptively.

Results: The cohort included 386 patients, of whom 199 (51.5%) had an etiological diagnosis established prior to referral. In the Unit, etiological investigation was mostly conducted in patients with global developmental delay / intellectual disability disorder, and/or autism spectrum disorder.

There was a male predominance (58.5%), and the median age at first consultation was 4.0 (IQR 2.0-8.0) years. Diagnosis was most often achieved through chromosomal microarray (30.8%) and gene panels (25.6%).

There was a predominance of abnormalities affecting sex chromosomes (n=45), including Fragile X syndrome (n=7), Turner syndrome (n=5), and XYY syndrome (n=5). Among autosomes, chromosomes 15, 16, 17, 21 and 22 were most frequently involved, with chromosomes 16 (n=28), 17 (n=25), 22 (n=21) and 21 (n=18) being most often affected.

CNVs accounted for most of the pathogenic variants, with greatest incidence of the 15q, 16p, and 22q11.2 regions.

Discussion: Our cohort reflects the pattern described in the literature, with major involvement of chromosomes 15, 16, 17, 21 and 22. Although the diagnostic yield of the array is lower than that of the panels, the former has been in use for longer and, for cost reasons, is the almost always the first diagnostic test carried out at our institution.

Although about half of the etiological diagnoses had already been established prior to referral to our unit – almost always by the Genetics Department – our findings underscore the importance of etiological investigation within a Neurodevelopmental Unit, allowing for a better understanding of these patients' profiles, more targeted follow-up, and the genetic counseling.

Palavras-chave: Genetic variants, Neurodevelopmental profiles

DIAGNOSTIC CHALLENGES OF ACUTE SEVERE THROMBOCYTOPENIA IN A 14-MONTH-OLD WITH CONCURRENT VIRAL INFECTIONS AND ANTIBIOTIC EXPOSURE

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Vancomycin-induced immune thrombocytopenia (VIT) is a rare but potentially life-threatening adverse reaction mediated by drug-dependent antiplatelet antibodies, with pediatric cases being exceptionally rare.

A previously healthy 14-month-old boy was admitted to the PICU for severe croup requiring mechanical ventilation. Rhinovirus was detected at admission. Empirical antibiotics were initiated (ceftriaxone, then cefepime+vancomycin due to ventilator-associated pneumonia). A diffuse macular exanthem and transient thrombocytopenia (nadir 12000/ μ L) developed concurrently with a positive enterovirus IgM. The exanthem was improving until day 11 of vancomycin, when it worsened, becoming markedly confluent over the extremities, and neutropenia emerged. Antibiotics were discontinued, with progressive rash improvement. 5 days later, fever recurred amid persistent neutropenia. Piperacillin-tazobactam was started, but with rising CRP and procalcitonin, CVC was removed and vancomycin reintroduced. Adenovirus was newly detected on nasopharyngeal wash. After only 2 doses the exanthem worsened and platelets dropped from 163000/ μ L to 44000/ μ L. Vancomycin was discontinued. In <48h platelets had fallen to 1000/ μ L. IPF was >10%. Severe thrombocytopenia persisted for 5 days with active auto-limited epistaxis, scattered petechiae with mucosal involvement, and hemorrhagic feet suffusions, requiring platelet transfusion without significant rise (<15000/ μ L). Two doses of IVIg were administered, along with pulse methylprednisolone.

The temporal association between vancomycin re-exposure and severe thrombocytopenia strongly suggests VIT. However, concurrent viral infections represent potential confounding factors. Viral immune activation may have facilitated the immune response to vancomycin, acting as a first hit that primed the immune system for an exaggerated drug-dependent reaction upon re-exposure. The first vancomycin exposure likely served as the sensitization period, with the exanthem transformation at day 11 possibly representing the earliest clinical manifestation. Upon re-exposure, the steep platelet decline, elevated IPF, and refractoriness to platelet transfusion all support antibody-mediated peripheral destruction. This case illustrates the diagnostic complexity of acute severe thrombocytopenia in critically ill children, where viral-mediated immune dysregulation and drug-induced mechanisms may coexist and interact, making definitive causal attribution challenging.

Palavras-chave: Vancomycin, Immune thrombocytopenia, Drug re-challenge, Viral infections

SEVERE PEDIATRIC DELIRIUM IN THE CONTEXT OF PROLONGED SEDATION: A POSSIBLE CONTRIBUTION OF CLONIDINE

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Introduction: Delirium in pediatric intensive care is a frequent complication associated with increased morbidity and length of stay. Its etiology is multifactorial, with sedative and analgesic drugs as major contributors. Clonidine, an α_2 -adrenergic agonist used in sedation and weaning, is generally considered safe, however its role in delirium remains unclear.

Case report: A 2-year-old boy with no relevant history underwent elective adenotonsillectomy and bilateral myringotomy for adenotonsillar hypertrophy. The procedure was complicated by difficult intubation due to bleeding and friable mucosa, with poor airway visualization resulting in abortion of surgery. Postoperatively, he developed severe laryngospasm and bronchospasm, requiring transfer to a tertiary ICU and reintubation. On day 6, reintervention was performed with completion of adenotonsillectomy. Prolonged sedation with fentanyl and midazolam was maintained until day 8, with dexmedetomidine from day 3 to 18. Prior to extubation, sedation was briefly switched to propofol and remifentanyl. From day 8, withdrawal therapy with methadone and diazepam was started and tapered, and clonidine was initiated on day 9 and maintained until discharge. After extubation and discontinuation of continuous sedatives, he developed severe hypoactive delirium. EEG showed poorly organized activity without asymmetry or epileptiform discharges; possible bilateral frontal delta slowing, limited by ocular artifacts. Brain MRI was normal. The patient was referred for a pharmacogenetic evaluation. Due to persistent symptoms, therapy was tapered, with clonidine reduction associated with clinical improvement. At discharge, neurological exam was normal except for mild language regression.

Discussion: This case illustrates severe pediatric ICU delirium. The patient had multiple risk factors, including young age, sex, mechanical ventilation, postoperative status and prolonged exposure to multiple sedatives and opioids. Cumulative α_2 -adrenergic exposure may have contributed to impaired arousal via sustained locus coeruleus inhibition beyond sedation. Dexmedetomidine is widely used in pediatric ICU and has been described as a treatment for delirium. In contrast, clonidine-associated delirium is rarely reported, mainly in adults. It remains unclear whether delirium resulted solely from critical illness, risk factors, or whether clonidine contributed to its persistence.

Palavras-chave: Delirium, Clonidine

WHEN ODOUR IS THE CLUE: UNCOVERING TRIMETHYLAMINURIA BEHIND BROMHIDROSIS

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Introduction: Bromhidrosis is an unpleasant body odour, most commonly related to the bacterial decomposition of sweat. It is frequently misattributed to poor hygiene or primary hyperhidrosis, particularly when associated with excessive sweating, and its recognition as a distinct clinical entity remains limited among clinicians. In rare cases, bromhidrosis may reflect underlying metabolic disorders. Early recognition is essential, as management differs significantly and may prevent unnecessary invasive procedures.

Case Report: A 15-year-old male adolescent was referred to pediatric surgery for severe palmar and axillary hyperhidrosis, associated with an intense and socially disabling body odour, leading to significant bullying and interpersonal difficulties. Previous topical treatments were ineffective, and thoracic sympathectomy was being considered. Dermatology evaluation focused on hyperhidrosis management, without identifying a specific cause for the odour. Common dermatological and systemic causes of bromhidrosis were excluded. Given the disproportion between sweating and odour intensity, further evaluation was pursued, and the patient was referred for metabolic assessment. Initial metabolic investigation was unremarkable. Genetic testing revealed a heterozygous intronic variant c.627+10C>G and the polymorphism c.472G>A (p.Glu158Lys) in the FMO3 gene, findings consistent with partial trimethylaminuria. Following dietary counseling and supportive measures, the patient reported partial improvement of symptoms, and surgical intervention was deferred.

Discussion: This case highlights the importance of not overlooking atypical presentations of hyperhidrosis, particularly when odour is the predominant and disproportionate feature. Trimethylaminuria represents a spectrum of clinical expression, ranging from mild or transient forms to more severe phenotypes, and requires a high index of suspicion for diagnosis, even in the presence of normal initial metabolic studies. Recognition of bromhidrosis and its potential metabolic causes is crucial, as treatment is mainly based on dietary and supportive measures and may significantly improve quality of life while avoiding unnecessary surgical procedures. Greater awareness of this entity is essential in pediatric practice.

A RARE INTRACRANIAL COMPLICATION OF ACUTE OTITIS MEDIA IN A CHILD: FROM OTALGIA TO DIPLOPIA

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Introduction: Acute otitis media (AOM) is a common diagnosis in both emergency department and outpatient settings. The authors present a case of a rare complication of AOM in a 4-year old child.

Case report: A 4-year-old child was admitted to the emergency department with bilateral ear pain that had been present for eight days, associated with otorrhea. The patient had been treated with topical ofloxacin for the previous four days and had received two doses of oral amoxicillin. She also complained of occipital headache present for two days. According to the mother, since the previous day, the child had voluntary closure of the right eyelid. Fever, vomiting, dizziness, hearing loss, or facial pain were denied.

Physical examination revealed unilateral sixth cranial nerve palsy, causing limited abduction of the right eye. On otoscopy acute suppurative otitis media with profuse otorrhea was present in the right ear and nonsuppurative AOM on the left.

Laboratory investigations showed leukocytosis (13420/uL) and an elevated C-reactive protein (CRP) of 221.9 mg/L. Computed tomography (CT) demonstrated complete filling of the middle ear and mastoid cells bilaterally, without petrositis or intracranial abscess. She was submitted to a myringotomy and a right mastoidectomy. Lumbar puncture showed pleocytosis with a predominance of polymorphonuclear cells. A diagnosis of Gradenigo syndrome was assumed. Broad-spectrum antibiotic therapy was initiated, and the child was admitted to the pediatric inpatient ward at a tertiary care hospital. During hospitalization, there was gradual improvement in diplopia and complete resolution of the sixth cranial nerve palsy. After discharge, the child has remained under follow-up with an otolaryngologist and a pediatric immunologist, with no subsequent complications.

Discussion: Gradenigo syndrome is a rare but potentially serious complication of AOM. A high index of clinical suspicion, prompt diagnosis, and a multidisciplinary approach are important to reduce morbidity and prevent permanent sequelae.

Palavras-chave: Acute otitis media; diplopia; Abducens nerve palsy; Gradenigo syndrome

CENTRAL HYPERSOMNIA IN PRADER-WILLI SYNDROME

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Introduction: Prader-Willi Syndrome (PWS) is a rare genetic multi-system disease characterized by developmental and metabolic alterations, such as obesity and sleep-disordered breathing (SDB). While obstructive sleep apnea (OSA) has long been known to cause excessive daytime sleepiness (EDS) in these patients, central hypersomnia (CH), including narcolepsy, has not yet been recognized as an equally important cause for EDS. Although there are no specific criteria, diagnosis is based on clinical findings and on Multiple Sleep Latency Test (MSLT) results preceded by polysomnography (PSG). We aim to describe three cases of suspected or confirmed CH so as to illustrate this manifestation of PWS.

Case Reports:

Case 1: A female diagnosed with PWS aged 5, with obesity and developmental delay, was referred at 7 years of age for EDS associated with episodes of cataplexy. PSG showed one sleep-onset REM period (SOREMP) and moderate OSA. MSLT mean latency was 4 minutes. EDS persisted despite non-invasive ventilation (NIV) adherence. Meeting narcolepsy criteria, she began treatment with methylphenidate, with clinical improvement.

Case 2: A male diagnosed with PWS at 22 days due to hypotonia and feeding difficulties exhibited irritability, anxiety and EDS throughout childhood. At age 8, PSG showed moderate OSA and one SOREMP. EDS persisted despite NIV adherence. Repeat PSG with MSLT showed a mean sleep latency of 4 minutes and two SOREMPs, confirming narcolepsy. Therapy with different psychostimulants was attempted but not tolerated.

Case 3: A female diagnosed with PWS at age 5, with obesity and developmental delay, presented at age 6 with episodes of sudden sleep onset in class. Multiple PSGs indicated mild OSA. MSLT demonstrated a mean sleep latency of 10 minutes without SOREMPs. Psychostimulant therapy was not initiated, as diagnostic criteria for CH were not met. At age 13, she developed moderate OSA and hypoventilation, leading to initiation of NIV, which was poorly tolerated and resulted in only partial improvement of EDS. After two years, NIV therapy was ultimately declined, and she was lost to follow-up.

Discussion: Central hypersomnia is a pervasive yet undervalued manifestation of PWS. It should be considered especially when EDS persists despite adequate management of SDB. Identifying this disorder is important to optimize EDS's therapeutic approach with the potential initiation of psychostimulants, as demonstrated in case 1.

Palavras-chave: Prader-Willi Syndrome, Sleep-disordered breathing, Excessive daytime sleepiness, Central hypersomnia, Narcolepsy

CONGENITAL DIAPHRAGMATIC HERNIA: CLINICAL CHARACTERISTICS, MANAGEMENT AND OUTCOMES

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Introduction: Congenital diaphragmatic hernia (CDH) is a congenital anomaly characterized by a diaphragmatic defect with herniation of abdominal contents into the thoracic cavity, leading to pulmonary hypoplasia and pulmonary hypertension (PH). Despite neonatal and surgical care advances, still has a significant morbimortality. We aimed to describe the clinical characteristics, management, and outcomes of patients with CDH treated in our department.

Methods: A retrospective case series of CDH patients treated at our department (2024-2025). Demographic, prenatal, clinical, and surgical data were collected. Primary outcomes were survival to discharge and postoperative complications; secondary outcomes included ventilation duration, length of hospital stay, and need for vasodilator therapy.

Results: Five patients were included, all male, including 1 monozygotic twins pair. Prenatal diagnosis was established in 4 cases, mostly in the 3rd trimester. Two were born at term and 3 were preterm, with birth weights ranging from 1175 to 3200g. All patients had left-sided type B Bochdalek hernias. Associated anomalies were present in 4 patients, all minor cardiac anomalies. Surgical repair was performed within the 1st 48–56 hours of life via open supraumbilical transverse laparotomy. Primary repair was achieved in 4 cases, with 1 requiring patch placement. Herniated contents included bowel and spleen in all patients, with stomach and liver herniation in 1 case each. Postoperative complications included: minor wound dehiscence managed conservatively; chylothorax in the CDH with patch repair; and recurrence requiring reoperation. Two patients developed PH requiring vasodilator therapy, with 1 severe case associated with prolonged mechanical ventilation (187 days) and chylothorax. All patients survived to discharge. Length of hospital stay ranged from 21 to 217 days. Two patients were discharged on nocturnal non-invasive ventilation, 1 of whom remains dependent at last follow-up. All remain under multidisciplinary follow-up, during which 2 required readmission due to recurrent wheezing associated with viral respiratory infection and 1 for surgical correction of bilateral cryptorchidism.

Discussion: CDH remains associated with significant morbidity, even in cases with relatively homogeneous anatomical features. Postoperative complications and prolonged hospitalizations observed in this series highlight the need for specialized multidisciplinary care and long-term follow-up.

Palavras-chave: Congenital diaphragmatic hernia, Case series, Neonatal surgery

PERSISTENT HYPOXEMIA IN INFANCY: THE IMPORTANCE OF RECOGNIZING KEY CLINICAL ASSOCIATIONS

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Introduction: Persistent hypoxemia in infancy poses a major diagnostic challenge and often requires a multidisciplinary approach. We describe a case in which recognition of a subtle clinical triad was essential for diagnosis.

Case Report: A 3-month-old female infant presented to the emergency department with vomiting, hypoactivity, and sustained hypoxemia with moderate respiratory distress. She was admitted and treated with broadspectrum antibiotics and bronchodilators with no improvement. Echocardiography showed right chamber dominance, pulmonary artery dilatation, and pulmonary hypertension, without a clear structural cause.

Despite antibiotic and later diuretic therapy, hypoxemia and respiratory distress persisted, and she was transferred after 22 days to a tertiary pediatric center. Cardiac CT angiography revealed a large window-type patent ductus arteriosus (Krichenko type B), severe pulmonary artery dilatation, and diffuse parenchymal changes suggestive of ventilation-perfusion mismatch. Surgical correction was performed with PDA ligation and aortic arch reconstruction.

Postoperatively, fixed bilateral mydriasis with non-reactive pupils was noted. Brain MRI demonstrated a broomstick-like appearance of intracranial arteries, anterior cerebral artery stenosis, and multiple microhemorrhages.

The association of congenital mydriasis, pulmonary hypertension, and window-type PDA raised suspicion for Multisystemic Smooth Muscle Dysfunction Syndrome (MSMDS), and genetic testing confirmed a pathogenic ACTA2 gene variant. The postoperative course was further complicated by left main bronchus compression by the right pulmonary artery, requiring surgical repositioning, followed by multiple postoperative complications that culminated in death at 4 months of age.

Discussion: The lack of response to targeted therapy for the most common infectious and cardiac causes of persistent hypoxemia should prompt early etiological reassessment and a broader diagnostic investigation. In this case, the triad of congenital mydriasis, pulmonary hypertension, and PDA was key to diagnosing MSMDS, a rare ACTA2-related disorder associated with congenital heart defects, pulmonary hypertension, cerebrovascular disease, and aortopathy. This syndrome carries significant prognostic implications, given the high risk of early vascular, pulmonary, and neurological complications. Early recognition enables targeted surveillance, timely optimization of therapeutic management, and follow-up.

Palavras-chave: Pulmonary hypertension, ACTA2 mutation, Patent ductus arteriosus, Persistent hypoxemia

REFERRAL FOR DEVELOPMENTAL DYSPLASIA OF THE HIP SCREENING AT ULS BRAGA: QUALITY AND CARE PATHWAY OF NEWBORNS IN 2024

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Introduction: Developmental dysplasia of the hip (DDH) is among the most clinically significant musculoskeletal conditions of the neonatal period, with an estimated prevalence of 1:100 for dysplasia and 1:1000 for dislocation. Portugal's national screening programme follows a selective, risk-based strategy, recommending ultrasonographic evaluation within the first 6 weeks of life. This study assessed referral compliance with the ULS Braga institutional protocol, screening timeliness, and independent predictors of confirmed DDH.

Methods: Retrospective observational study of all newborns delivered at ULS Braga in 2024 (n=2761). Referral compliance was quantified using Cohen's Kappa coefficient; independent predictors of DDH were identified through multivariate binary logistic regression (IBM SPSS® v.30; 95%CI; p<0.05).

Results: Overall agreement between actual and protocol-indicated referrals was almost perfect (k=0.819; p<0.001), surpassing published benchmarks. Among referred newborns (19.5%; n=538), 23.4% (n=104) lacked a protocol criterion, with hip click accounting for 81.7% of these cases. Ten cases of under-referral were identified, predominantly due to missed breech presentation (50%). Confirmed DDH prevalence was 0.76% (n=21; 84.2% female). Median age at ultrasonographic evaluation was 110 days, with 91.6% assessed beyond the recommended timeframe. Independent predictors of DDH: congenital torticollis (OR=41.88; 95%CI: 7.63-229.77), asymmetric skin folds (OR=17.09; 95%CI: 5.17-56.56), and breech presentation (OR=9.08; 95%CI: 3.41-24.15).

Discussion: Findings demonstrate a high degree of adherence to institutional criteria by Neonatology professionals. Over-referral driven by hip click represents the primary opportunity for protocol optimisation. Although clubfoot is intentionally excluded from the DDH referral pathway, given systematic orthopaedic referral, its significant association with DDH (V=0.101; p<0.001) suggests orthopaedic teams should maintain a low threshold for DDH investigation in this population. The systematic delay in ultrasonographic access constitutes the primary care delivery constraint identified, with potential implications for long-term clinical outcomes.

Palavras-chave: Developmental dysplasia of the hip, screening programme

NEUROLOGICAL MASK OF A HEMATOLOGICAL EMERGENCY: MIDBRAIN HEMORRHAGE AS THE INAUGURAL PRESENTATION OF T-ALL WITH EXTREME HYPERLEUKOCYTOSIS

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Introduction: T-cell Acute Lymphoblastic Leukemia (T-ALL) is frequently associated with hyperleukocytosis. However, extreme counts (>500,000/uL) are rare and produce a critical risk of vascular complications. Central Nervous System (CNS) involvement as the inaugural manifestation is atypical, requiring a high index of diagnostic suspicion.

Case Description: A previously healthy 10-year-old male was admitted to the Emergency Department with acute onset of diplopia and ataxia. Associated symptoms included a 13-day history of fever, holocranial headache, vomiting, asthenia, and progressive abdominal distension. Physical examination revealed mucocutaneous pallor, multiple ecchymoses, and massive hepatosplenomegaly. Neurological assessment showed a Glasgow Coma Scale of 14, anisocoria due to a non-reactive right pupil, bilateral ptosis (predominantly right-sided), Parinaud Syndrome (impaired upward gaze and vertical nystagmus), and left-sided hemiparesis. Laboratory findings confirmed extreme hyperleukocytosis (765,870/uL), severe anemia (Hb 4.5 g/dL), thrombocytopenia (21,000/uL), and tumor lysis syndrome. Cranial CT identified a focal hyperdense area (13x14 mm) in the right paramedian midbrain with adjacent edema, consistent with leukostasis-induced hemorrhage. Thoracic CT showed a large infiltrative mediastinal mass (117x64 mm). The patient was admitted to the Pediatric Intensive Care Unit (PICU) at the Centro Hospitalar Universitário de São João for immediate tumor lysis therapy. Peripheral blood immunophenotyping confirmed High-Risk T-ALL with CNS involvement and chemotherapy followed the "ALLTogether" protocol. After stabilization, he was transferred to the Portuguese Institute of Oncology (IPO) for specialized oncology care. The patient showed a favorable response, with blast clearance in the cerebrospinal fluid and mediastinal mass reduction.

Discussion: Extreme hyperleukocytosis is a rare hematological emergency which leads to leukostasis and CNS hemorrhage. The midbrain location is particularly atypical, mimicking primary neurological pathology. Favorable clinical evolution highlights the importance of immediate cytoreductive therapy and intensive support. This case demonstrates that in the presence of neurological deficits and systemic disease, hyperviscosity-related oncological complications must be promptly considered to minimize permanent sequelae.

Palavras-chave: T-ALL, Extreme Hyperleukocytosis, Leukostasis, Midbrain, Intracranial Hemorrhage.

MOSAIC IDIC(Y) CHROMOSOME ASSOCIATED WITH SHOX GENE DELETION IN AN ADOLESCENT WITH SHORT STATURE

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Introduction: Structural abnormalities of the Y chromosome are relatively common; isodicentric Y chromosomes [idic(Y)] are the most frequently detected, leading to a wide spectrum of clinical manifestations. Their instability during cell division often results in mosaic karyotypes, generally involving a 45,X cell line and the associated phenotype depends on the proportion of cell lines, breakpoint location, and Y chromosome structure. Deletions affecting the pseudoautosomal region 1 (PAR1), involving the SHOX gene, are associated with short stature.

Clinical Case: A 17-year-old male was referred for genetic evaluation due to short stature, with a previously identified SHOX gene deletion by MLPA. Cytogenetic analysis was performed on peripheral blood using conventional karyotyping with GTL and CBG banding. Cytogenetic analysis revealed mosaicism with two cell lines: one 45,X (28.6%) and another 46,X,idic(Y) (71.4%). Final karyotype was thus 45,X[16]/46,X,idic(Y) (p11.3)[40]. The abnormal Y chromosome was consistent with an isodicentric chromosome. Fluorescence in situ Hybridization (FISH) targeting SRY and SHOX confirmed SHOX deletion and showed two SRY signals on the abnormal Y chromosome.

Discussion: This case highlights the wide phenotypic variability associated with mosaic idic(Y) chromosomes, which may range from apparently healthy infertile males to individuals with disorders of sex development. In this patient, involvement of the PAR1 region resulted in the deletion of SHOX gene, which explains the short stature, while SRY duplication accounts for male sex determination; the coexistence of a 45,X cell line may further influence clinical expression and gonadal development. Structural abnormalities of the Y chromosome are associated with impaired spermatogenesis. Loss of critical regions, including AZF, and abnormal Y chromosomal configuration may disrupt meiosis, increasing the risk of oligozoospermia or azoospermia. The 45,X lineage may further contribute to gonadal dysfunction. These findings emphasize the importance of integrating both cytogenetic and molecular approaches for achieving an accurate diagnosis, essential to establish genotype-phenotype correlations, fertility counseling and clinical follow-up.

Palavras-chave: SHOX gene, Mosaicism, Isodicentric Y chromosome

PHARMACEUTICAL EXCIPIENTS AS A HIDDEN SOURCE OF ALLERGENS

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Introdução: Cow's Milk Allergy (CMA) is a specific and reproducible immunological reaction following exposure to milk proteins (MP). In IgE-mediated forms, symptoms may occur within minutes up to two hours after exposure and, in severe cases, may progress to anaphylaxis. The standard treatment consists of strict avoidance of MP and treatment of acute reactions in case of accidental ingestion. However, desensitization to MP is a possible approach, with a promising future.

In the pediatric population, oral medications are frequently administered, and their formulations may contain pharmaceutical excipients with allergenic potential, constituting an inadvertent source of exposure. These excipients are inactive substances, which may appear under different designations, and are used to optimize the stability, bioavailability, and palatability of the active ingredient.

Caso clínico: A 9-month-old infant, with a family history of atopic dermatitis was followed for IgE-mediated CMA, with a previous history of anaphylaxis, under strict avoidance of MP.

In an outpatient setting, laboratory evaluation revealed iron deficiency anemia, and oral iron supplementation was initiated (Ferrum Hausmann® 50 mg/ml Oral Solution). After administration, the patient developed urticaria and vomiting, leading to immediate discontinuation of the medication.

Given the suspicion of accidental MP exposure, the medication's composition was reviewed, revealing the presence of cream flavoring among the excipients, potentially containing traces of MP. The treatment was switched to an alternative iron formulation free of allergenic components, with no subsequent reactions.

Discussão: This clinical case highlights a poorly recognized cause of inadvertent allergen exposure in patients with CMA, through the presence of MP in pharmaceutical excipients.

Despite strict dietary avoidance, the occurrence of symptoms consistent with an allergic reaction following drug administration should raise suspicion of hidden sources of exposure, particularly in patients with severe clinical presentations such as anaphylaxis.

In summary, this case underscores the importance of careful evaluation of the composition of prescribed medications in patients with food allergies.

Palavras-chave: Pharmaceutical excipients, Hidden source of allergens, Cow's Milk Allergy, Anaphylaxis

CORONARY ARTERY STENOSIS AFTER ARTERIAL SWITCH OPERATION: A LATE COMPLICATION REQUIRING SURGICAL REVASCULARIZATION

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Introduction: Coronary artery complications following the arterial switch operation (ASO) for transposition of the great arteries (TGA) are a recognized but infrequent cause of late morbidity. Coronary ostial or anastomotic stenosis may remain silent for years, with functional impairment preceding overt symptoms. We report a case of critical left main coronary anastomotic stenosis detected in adolescence, managed with surgical revascularization.

Case Report: A 18-year-old male with a complex congenital heart disease history — TGA, large subpulmonary VSD, and interrupted aortic arch — underwent neonatal corrective surgery (ASO, VSD closure, and aortic arch reconstruction). Residual severe aortic regurgitation and right ventricular outflow tract obstruction required reoperation at age 8, with mechanical aortic valve replacement and RVOT enlargement. The patient remained in NYHA class I on follow-up, under propranolol and warfarin. Cardiopulmonary exercise testing at age 17 revealed significantly reduced functional capacity (peak VO_2 30.5 mL/min/kg; 56% predicted), an early ventilatory threshold (37% predicted VO_2), and an abnormal oxygen pulse curve suggesting low cardiac output. Subsequent cardiac CT angiography identified critical stenosis at the left main coronary anastomosis with post-stenotic dilatation (maximum lumen 7 mm), confirmed by cardiac catheterization. Echocardiography showed preserved biventricular function (LVEF 61%) with no significant valve dysfunction. The patient underwent on-pump beating-heart CABG (LIMA to LAD) via redo sternotomy with femoro-femoral bypass, without aortic cross-clamping. Postoperative course was uneventful, with discharge on day 8.

Discussion: This case illustrates the potential for silent but hemodynamically significant coronary anastomotic stenosis as a late complication of ASO, even in asymptomatic patients with preserved ventricular function. Cardiopulmonary exercise testing proved instrumental in unmasking subclinical myocardial ischemia, prompting timely anatomical investigation. In complex ASO patients — particularly those with significant vessel size disparity at the time of neonatal surgery — structured long-term coronary surveillance including functional assessment and cross-sectional imaging should be considered, regardless of symptomatic status.

Palavras-chave: Coronary artery stenosis, Arterial Switch, TGA, Pediatric Cardiology, Congenital heart disease

PATTERNS OF EMOLLIENT AND OIL USE IN EARLY INFANCY: A PORTUGUESE POPULATION STUDY

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Introduction: Atopic dermatitis (AD) is a chronic inflammatory skin disease that often begins in early infancy, associated with skin barrier dysfunction and potential allergic sensitization. The “dual-allergen exposure” hypothesis suggests that early cutaneous exposure to allergens may promote sensitization. Early emollient use has been proposed as a preventive strategy, but evidence remains inconsistent and may depend on product type. Infant skin care practices remain poorly characterized in Portugal. The aim was to describe infant skin care practices and identify modifiable behaviors relevant to the prevention of allergic diseases.

Methods: A cross-sectional observational study was conducted using an online questionnaire (Google Forms), distributed via social media and email to caregivers of infants between October 2025 and February 2026. Data included demographic characteristics, family history of atopy, and skin care practices up to 2 months of age, including product type and sources of recommendation.

Results: A total of 188 infants were included; 54.3% were male, and 53.7% had a family history of atopy. Emollient use up to 2 months was reported in 83.5%, predominantly with non-atopic-specific products (79.6%). Among infants with a family history of atopy (n=101), only 21.8% used atopic-specific emollients, of whom 72.7% did so following medical advice. However, 30% who did not use atopic-specific products also received professional recommendation, although not for atopic-targeted products. Oil use was reported in 42.6%, predominantly sweet almond oil (82.5%), frequently for cradle cap management (66.3%) and based on professional indication (70%; n=46).

Discussion: Despite high emollient use, most infants, including those with a family history of atopy, do not use formulations targeted at skin barrier restoration. Oil use is frequent, particularly sweet almond oil. Beyond cutaneous sensitization, such products may disrupt the lamellar structure of the stratum corneum, impairing barrier function. Professional recommendations do not consistently translate into the use of appropriate products, suggesting inconsistency in the guidance provided. These findings highlight the need for clearer guidance on early-life skin care practices, particularly in high-risk infants, and for targeted training of healthcare professionals, with implications for primary prevention of atopic dermatitis and allergic disease.

Palavras-chave: atopic dermatitis, Infant skin care practices, Emollient use, Skin barrier function, Healthcare professional recommendations

VOSORITIDE – LET’S GROW

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Introduction: Achondroplasia is a genetic skeletal dysplasia characterized by disproportionate short stature. The global prevalence is approximately 4.73 per 100,000 individuals and 3.62 per 100,000 in Europe. It results from a mutation in the FGFR3 gene, leading to abnormal activation of signaling pathways that regulate bone metabolism and inhibit natural growth. Vosoritide is an approved treatment for achondroplasia in children aged ≥4 months with open epiphyses. It is a peptide that counteracts abnormal FGFR3 signaling, promoting physiological bone growth. In Portugal, it is available under special authorization and classified as an orphan drug for rare diseases.

Patient Description: A 13-year-old male diagnosed with achondroplasia associated with an FGFR3 mutation. At treatment initiation, height was 109.4 cm. Bone age, assessed by left hand and wrist X-ray, was approximately 10 years, below chronological age (12 years) and normal reference values (−2 SD).

Timeline, Intervention and Monitoring:

2022: Genetic confirmation of Gly380Arg mutation in FGFR3;

Jul 2024: Clinical genetics consultation;

Jan 2025: Initiation of vosoritide (height 109.4 cm; arm span 98.7 cm).

Follow-up measurements:

Feb 2025 – height 111.3 cm; arm span 100.3 cm;

Apr 2025 – height 113 cm; arm span 100.3 cm;

Jul 2025 – height 114.7 cm; arm span 102.8 cm;

Oct 2025 – height 116.9 cm; arm span 103.2 cm;

Jan 2026 – height 118.7 cm; arm span 104.8 cm.

Growth over 12 months: +9.3 cm height and +6.1 cm arm span.

Intervention: dispensing and training on subcutaneous administration, adherence reinforcement.

Monitoring: blood pressure (within expected range), height, arm span, and adverse effects.

Discussion: Vosoritide showed a favorable outcome, with significant growth over 12 months and no reported adverse effects. The patient progressed from the 5th–25th percentile at baseline to 25th–50th at 6 months and 50th–75th at 12 months, based on achondroplasia-specific growth charts. Although post-infancy linear growth is typically limited, these results suggest a clear therapeutic benefit. This case highlights the importance of early diagnosis before epiphyseal closure. Despite limited national experience due to its orphan status, findings align with international evidence supporting vosoritide as a promising therapy capable of modifying disease progression. The hospital pharmacist plays a key role in ensuring correct administration, adherence, and safety monitoring, contributing to optimized clinical outcomes.

Palavras-chave: Vosoritide, Achondroplasia, FGFR3 mutation, Hospital pharmacist

BEYOND ELEVATED PLATELETS: INSIGHTS FROM TWO PEDIATRIC CASES

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Pediatric Thrombocytosis lacks consensus and its definition remain controversial. It is classified as primary or secondary, the latter being the most common cause in childhood (infection; iron deficiency). Primary thrombocytosis (PT) results from mutations in thrombopoiesis-regulating genes, such as thrombopoietin (THPO), receptor c-MPL (MPL), receptor's effector kinase Januskinase2 (JAK2), gene-encoding calreticulin (CALR). PT can be hereditary (germline mutations) or acquired (somatic mutations, within the Philadelphia-negative myeloproliferative neoplasms (MPN): common in adults, rare in childhood). Germline mutations have been recently recognized and cause early onset thrombocytosis.

Male, 5 years old, evaluated for asthenia, presented thrombocytosis and iron deficiency (without anemia). Iron deficiency resolved with supplementation, thrombocytosis persisted. Family history included maternal thrombocytosis (500-600x10³/μL). Evaluation showed thrombocytosis (779-1780x10³/μL), normal erythrocytogram, giant platelets and splenomegaly. Initial targeted genetic testing was negative for somatic mutations (JAK2;MPL;CALR;BCR-ABL transcript). Bone marrow showed dysmegakaryopoietic features. Patient remained asymptomatic and untreated. In 2025, exome sequencing identified a germline pathogenic heterozygous MPL variant (c.305G>C (p.(Arg102Pro))), consistent with thrombocythemia type 2.

Male, 12 years old, presented thrombocytosis (664-1156 x10³/μL), leukocytosis (13980-25970/μL) and neutrophilia (8670-21190/μL) in context of dermatological condition. Follow-up showed polyglobulia (Hb12.5-19g/dL), intermittent monocytosis (370-1850/μL), basophilia (110-910/μL), hepatosplenomegaly and acquired Von Willebrand disease. Bone marrow showed hypercellularity with normal red blood cell mass determination. JAK2V617F mutation was positive with negative BCR-ABL transcript. Diagnosis of MPN was established, namely Essential Thrombocythemia (ET).

We report two pediatric cases of PT: germline and somatic (ET). We highlight the diagnostic challenge underlying pediatric PT. This entity is rare, and acquired forms even more compared to adults – ET's annual incidence is 0.004-0.11/100000 in children and 1.03/100000 in adults. After diagnosing PT, the age is key in distinguishing congenital from acquired. Acquired forms, typically seen in adults, can arise during adolescence; and congenital forms (identified thanks to advances in genetic) should be considered in early onset thrombocytosis.

Palavras-chave: Primary thrombocytosis, germline mutations, somatic mutations, Genetic testing

EPIDERMOLYSIS BULLOSA – TREATMENT WITH FILSUEVZ® - REAL-LIFE EXPERIENCE IN ONE PATIENT

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Título: Epidermólise bolhosa – Tratamento com Extrato de Casca de Bétula

Introdução: A Epidermólise Bolhosa (EB) é uma doença genética rara, de expressão cutânea, caracterizada pela fragilidade da pele com formação de bolhas, lesões e cicatrizes por mínimo trauma mecânico. Alguns tipos de EB podem manifestar-se em órgãos internos. Os sintomas mais comuns são dor e prurido, com diminuição da qualidade de vida. Existem formas hereditárias, causadas por mutações genéticas, e outras adquiridas, de origem autoimune. É uma patologia que afeta de igual forma ambos os sexos sendo a prevalência a nível mundial de 10 casos por 1 milhão de habitantes. O tratamento de suporte foca-se na melhoria da sintomatologia e prevenção de lesões e complicações graves como o carcinoma espinocelular. O Filsuvez®, indicado no tratamento da EB, é um medicamento órfão. Apresenta-se em forma de gel tópico contendo cada grama 100 mg de extrato de casca de Bétula pendula Roth e Bétula pubescens Ehrh.

Descrição do doente: Doente do sexo masculino com 16 anos de idade com diagnóstico de Epidermólise Bolhosa há 15 anos em tratamento com Filsuvez® desde agosto de 2022. Foram detetadas a variante provavelmente patogénica c.6187C>T- p.(Arg2063Trp) e a variante c.6501+2dup.p em heterozigotia no gene COL7A1.

Cronologia de eventos: Diagnosticado em dezembro 2010, apresentava lesões na face, pescoço, mãos e pés que evoluíram para a zona abdominal com bolhas e exulcerações. Mais tarde atingimento cervical, tronco e membros e dedos em flexão. Manteve tratamento sintomático com pensos de mupirucina, gaze gorda e penso de Silicone. Realizou tratamento com losartan e camara hiperbárica sem melhoria. Iniciou Filsuvez® em agosto 2022 com melhoria de toda a sintomatologia. Interrompeu o tratamento em novembro 2024 para participar em Ensaio Clínico (EC). Por agravamento dos sintomas abandonou o EC retomando o tratamento com Filsuvez®

Discussão: Desconhece-se o mecanismo de ação do Filsuvez®. Sabe-se que atua na melhoria dos sintomas cutâneos e que o efeito na cicatrização das lesões está relacionado com a redução da inflamação, renovação tecidual e encerramento das lesões. Conclui-se que há um claro benefício e melhoria da sintomatologia pela aplicação deste gel tópico. A intervenção do farmacêutico hospitalar é fundamental para garantir a aplicação correta do medicamento, monitorização da adesão e eventuais efeitos adversos, contribuindo para a otimização dos resultados.

Palavras-chave: EPIDERMOLYSIS BULLOSA

HEAD CIRCUMFERENCE BEYOND 2 YEARS OF AGE: WHY IT STILL MATTERS IN CLINICAL PRACTICE

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Introduction: Head circumference (HC) is routinely measured during the first two years of life, after which it is often no longer systematically assessed. However, its clinical relevance extends beyond this period, particularly in children presenting with neurodevelopmental disorders, global developmental delay, autism spectrum disorder, dysmorphism or overgrowth. In such cases, macrocephaly should be interpreted within the broader clinical phenotype, as it may guide diagnostic reasoning and genetic investigation.

Case Report: We present three cases from a tertiary centre, highlighting the diagnostic value of HC.

The first child had developmental delay, hypotonia and autism spectrum disorder, with progressive macrocephaly reaching +6.4 SD. Associated dysmorphism and cutaneous findings led to the diagnosis of PTEN hamartoma tumour syndrome at 5 years.

The second child presented with global developmental delay, motor impairment, overgrowth and skeletal abnormalities. Persistent macrocephaly (+2.5 SD) and dysmorphic features supported the diagnosis of CHD8-Related Neurodevelopmental Disorder with Overgrowth, later genetically confirmed.

The third child presented autism spectrum disorder with absent expressive language. Macrocephaly was subsequently identified as part of an evolving phenotype, leading to the diagnosis of Fragile X syndrome at 5 years.

Conclusion: Although HC is routinely monitored in early life, it remains clinically relevant beyond 2 years when indicated. In children with neurodevelopmental disorders, dysmorphism or overgrowth, serial HC measurements provide a simple and accessible tool to detect abnormal growth trajectories and support etiological diagnosis. The often prolonged gap between early clinical signs and molecular diagnosis reinforces the value of longitudinal anthropometric and developmental assessment.

ASYMPTOMATIC VENTRICULAR PRE-EXCITATION IN AN ADOLESCENT ATHLETE: A CASE REPORT

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Introduction: Incidental ventricular pre-excitation, consistent with Wolff-Parkinson-White syndrome pattern, is increasingly identified in pediatric practice. Although often asymptomatic, it raises concerns about arrhythmic risk and safe sports participation. Management remains challenging.

Case Report: A 14-year-old male, competitive karate athlete, was referred after incidental detection of ventricular pre-excitation on ECG. He was asymptomatic, including during exertion. Echocardiography showed normal cardiac structure and function, with trivial mitral regurgitation. Holter monitoring revealed sinus rhythm (47174 bpm), rare supraventricular ectopy, two isolated ventricular ectopic beats, and persistent pre-excitation without symptoms. Exercise testing demonstrated maintained pre-excitation throughout effort, good functional capacity, and no arrhythmias. Family history was negative for cardiovascular disease or sudden cardiac death. Physical examination was unremarkable. Persistent pre-excitation, likely due to an accessory pathway, was diagnosed.

Discussion: This case highlights a frequent dilemma: the asymptomatic adolescent with incidental pre-excitation. While many remain event-free, the potential risk of serious arrhythmias warrants careful evaluation. Persistence of pre-excitation during exercise may suggest a higher-risk pathway, supporting referral for specialized assessment and consideration of electrophysiological study. For pediatricians, key challenges include decisions on referral, sports restriction, and risk communication. Temporary avoidance of high-intensity and competitive sports is recommended until risk stratification is completed. This case emphasizes a pragmatic, safety-oriented, and multidisciplinary approach.

WHEN HEARING LOSS IS NOT ISOLATED: A SUSPECTED CASE OF KERATITIS-ICHTHYOSIS-DEAFNESS SYNDROME

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Introduction: Children with sensorineural hearing loss (SNHL) often rely on vision to compensate for reduced auditory input, therefore, when visual impairment coexists, it may jeopardise the child's development. Keratitis-ichthyosis-deafness (KID) syndrome is a rare congenital disorder associated with progressive vascularising keratitis, SNHL and skin manifestations. It is caused by heterozygous mutations in the GJB2 gene that encodes connexin-26 on chromosome 13q12.

Clinical case: A 12-year-old boy has been followed in otorhinolaryngology since birth after failing universal newborn hearing screening. He initially presented with bilateral mixed hearing loss and underwent adenoidectomy and myringotomy with ventilation tube placement at age 3, followed by a second surgery at age 5. After resolution of the conductive component, he was reclassified as having bilateral sensorineural hearing loss. Genetic testing identified two heterozygous pathogenic variants in the GJB2 gene, consistent with connexin 26-related hereditary hearing loss, potentially associated with KID syndrome.

Ophthalmological follow-up remained unremarkable until the age of 11, when refractive correction was initiated. Examination showed normal biomicroscopy and only mild nonspecific drusen in the right eye, without macular involvement or significant changes on optical coherence tomography.

From a neurodevelopmental perspective, he initially presented with global developmental delay and currently has attention-deficit/hyperactivity disorder, communication and motor coordination difficulties. No cutaneous manifestations suggestive of KID syndrome have been reported so far.

The patient remains under multidisciplinary follow-up, including otorhinolaryngology, ophthalmology, genetics and paediatrics. Although there is perceived benefit with hearing aids, their use remains inconsistent.

Discussion: Since both hearing and vision are essential for neurodevelopment, early diagnosis and intervention are crucial to prevent developmental delays. Therefore, children with these impairments should undergo prompt otorhinolaryngological, ophthalmological and genetic evaluation to investigate underlying causes.

Palavras-chave: Keratitis-ichthyosis-deafness syndrome, Sensorineural hearing loss, Visual impairment

NOT JUST EPISTAXIS: A CASE OF JUVENILE NASOPHARYNGEAL ANGIOFIBROMA

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Introduction: Juvenile nasopharyngeal angiofibroma (JNA) is a benign fibrovascular tumour of the nasopharynx and posterior nasal cavity. Although rare, accounting for less than 0.5% of all head and neck tumours, it affects mainly adolescent males. Patients typically present with unilateral nasal obstruction and recurrent epistaxis.

Clinical case: A 12-year-old boy, with no relevant past medical history, presented to the emergency department with a 3-day history of fever, dry cough, odynophagia and nasal obstruction. He additionally reported recurrent epistaxis and a long-standing sensation of a nasal foreign body. On physical examination, he was febrile and had tonsillar hyperemia and hypertrophy. Rapid antigen test for group A *Streptococcus* was negative. Otorhinolaryngological evaluation showed mucopurulent rhinorrhea, pale and congested nasal mucosa and a polypoid mass in the left nasal cavity protruding into the nasal vestibule. He was discharged home on oral clarithromycin, systemic and intranasal corticosteroids, a nasal decongestant and topical hemostatic therapy.

At follow-up, he reported persistent bilateral epistaxis, nasal obstruction and new-onset hearing loss. Otorhinolaryngological examination revealed predominant mouth breathing and otoscopy showed bilateral otitis media with effusion. Rinne test was positive on the right and negative on the left, with Weber test lateralized to the left. Anterior rhinoscopy demonstrated near-complete nasal obstruction with blood on the right and purulent secretions on the left. The oropharynx showed grade 1 tonsils and bulging of the soft palate. Tympanogram was type B bilaterally and audiogram showed mild conductive hearing loss. MRI showed a large (70 x 50 x 80 mm) expansile lesion occupying the left nasal cavity with extension to adjacent paranasal sinuses, the pterygopalatine fossa and nasopharynx, associated with bone erosion and intense contrast enhancement, suggestive of JNA. He was scheduled for surgical resection.

Discussion: Although nasal obstruction and epistaxis are common in children, it is important to maintain a high index of suspicion for less common diagnoses, such as JNA. Early recognition of this condition is crucial to ensure timely diagnosis and reduce complications. Surgical resection is the treatment of choice.

Palavras-chave: Juvenile Nasopharyngeal Angiofibroma, Adolescent, Epistaxis

REFRACTORY HYPOXEMIA IN EARLY NEONATAL PERIOD – A RARE DIAGNOSIS TO CONSIDER

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Introduction: Neonatal hypoxemia may result from perinatal asphyxia or from respiratory, infectious, cardiovascular and/or metabolic conditions. Early diagnosis and timely intervention are essential to prevent serious complications resulting from impaired tissue oxygenation.

Clinical Case: Full-term male newborn (40 weeks and 3 days), small for gestational age (birth weight 2910 g, 4th percentile). The pregnancy was inadequately monitored. No infectious risk factors were identified. The first and second trimester obstetric ultrasounds were reported as normal; no third trimester ultrasound or fetal echocardiogram was performed. Following an uncomplicated vaginal delivery, with good adaptation to extrauterine life (Apgar score 9/10/10), the newborn was placed in rooming-in care with his mother. Progressive feeding difficulties were noted from the first hours of life. At 33 hours of life, he was evaluated due to poor general condition, central cyanosis, hypoxemia, persistent diffuse chest wall retractions and grunting. Laboratory investigation showed leukocytes 14,700/ μ L, neutrophils 83.7%, and C-reactive protein 2.49 mg/dL. Given suspected sepsis, empirical antibiotic therapy with ampicillin and gentamicin at meningeal doses was initiated. The patient was started on nasal CPAP but remained severely hypoxemic despite FIO₂ 100%, maintaining pre- and post-ductal oxygen saturations of 50%. He was subsequently intubated and placed on mechanical ventilation. Empirical treatment with inhaled nitric oxide and intravenous prostaglandin E1 (PGE1), titrated up to 100 ng/kg/min, was initiated without clinical improvement. Chest radiography showed increased bilateral perihilar markings. Transthoracic echocardiogram revealed obstructive infradiaphragmatic total anomalous pulmonary venous return (TAPVR) (maximum gradient 20 mmHg), with a right-sided cardiac chamber predominance, a large patent ductus arteriosus (under PGE1 infusion), and an ostium secundum atrial septal defect with right-to-left shunt. The patient was transferred to a reference center for congenital heart disease, where he underwent emergent complete surgical repair.

Discussion: Congenital heart diseases are the most common congenital malformations and should always be considered in the differential diagnosis of refractory neonatal hypoxemia. Obstructive infradiaphragmatic TAPVR is a rare condition, characterized by anomalous drainage of the pulmonary veins through a venous collector into the portal circulation. Due to obstruction of pulmonary venous return and consequent severe pulmonary hypertension, it represents a major neonatal surgical emergency. Despite being challenging, prenatal diagnosis is crucial for targeted perinatal management and improved prognosis.

Palavras-chave: refractory neonatal hypoxemia, newborn, congenital heart disease, neonatal emergency

FROM GENETICS TO THERAPY: L-SERINE IN GRIN1-RELATED NEURODEVELOPMENTAL ENCEPHALOPATHY

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Introduction: GRIN-related disorders (GRDs) are rare neurodevelopmental conditions caused by variants in genes encoding N-methyl-D-aspartate receptor (NMDAR) subunits, leading to impaired excitatory neurotransmission and a broad clinical spectrum. Diagnosis is challenging due to phenotypic variability, overlap with other conditions, and frequent variants of uncertain significance (VUS). Recent advances in genomic and functional characterization emphasize the need to integrate clinical, genetic, and functional data to guide diagnosis and management.

Case report: A male infant presented with abnormalities since the neonatal period, including craniofacial dysmorphisms, axial hypotonia, feeding difficulties, failure to thrive, and stridor. Initial etiological workup (array-CGH, brain MRI, Prader-Willi testing, and metabolic studies) was unremarkable. Clinical evolution showed global developmental delay, persistent irritability, and signs of central neurological involvement, including hyperreflexia, clonus, pyramidal signs and dystonia. Whole exome sequencing identified a de novo variant in the GRIN1 gene, consistent with GRIN1-related neurodevelopmental encephalopathy. Targeted therapy with L-serine was initiated and gradually titrated, with subsequent clinical improvement, including reduced irritability and dystonia and improved social interaction.

Discussion: L-serine therapy is not yet an established treatment and has been explored mainly in selected GRIN-related encephalopathies, particularly in variants with reduced receptor function. Evidence is limited and based on small studies with variable responses. In this case, L-serine was associated with clinical improvement, including reduced irritability and dystonia and better social interaction, suggesting potential benefit. These findings highlight the role of precision medicine in neurodevelopmental disorders, where molecular diagnosis can guide targeted, potentially disease-modifying therapies.

Palavras-chave: NMDA, GRIN1 Protein, Human Epileptic Encephalopathies, Serine

GENETIC CHARACTERIZATION OF B-ALL WITH BCR::ABL AND iAMP21

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Introduction: Acute lymphoblastic leukemia (ALL) represents 75% – 80% of acute leukemias among children [1]. Genetic alterations drive leukemogenesis and define biologically distinct subgroups with implications for prognosis and treatment response. The BCR::ABL1 fusion defines a high-risk B-ALL subgroup, while intrachromosomal amplification of chromosome 21 (iAMP21) represents a primary cytogenetic event associated with adverse prognostic impact, particularly in pediatric patients. Co-occurrence of iAMP21 with other driver abnormalities, including BCR::ABL1, is rare and highlights the importance of comprehensive genetic characterization [1,2].

Case Report: An 11-year-old female presented with cervical swelling, petechiae, and ecchymoses on the limbs. Laboratory tests revealed a high number of circulating blasts suggesting acute leukemia. A comprehensive genetic assessment was performed, including karyotyping, FISH, RT-PCR and NGS (TruSight™ RNA Fusion panel). Diagnosis at IPO Porto confirmed B-ALL with 87.86% blasts, BCR::ABL1 positivity, and CNS1 status (no central nervous system involvement). The patient was treated under the ALLTogether protocol. FISH analysis detected a rearrangement involving the ABL1 gene (9q34), consistent with the BCR::ABL1 fusion previously identified by RT-PCR. Additional copy number alterations involving the RUNX1 gene (21q21) demonstrated intrachromosomal amplification of chromosome 21 (iAMP21). Karyotype analysis showed that 7 out of 12 metaphases exhibited rearrangements involving chromosomes 9 and 22, including the translocation t(9;22)(q34;q11.2), resulting in the BCR::ABL1 fusion gene. This finding was further confirmed by NGS.

Discussion: This case illustrates the rare coexistence of iAMP21 and BCR::ABL1 in pediatric B-ALL. iAMP21 represents a primary cytogenetic event and is associated with high-risk disease, reinforcing the need for comprehensive genomic characterization for accurate risk stratification and treatment planning. Detection of iAMP21 by FISH requires careful analysis, preferably in metaphase cells, to confirm amplification within a single abnormal chromosome. Although formal clinical guidelines for such co-occurrences are lacking, these cases provide insights into disease biology and may inform future risk-adapted therapeutic strategies.

Palavras-chave: B-ALL, iAMP21

PEDIATRIC CLINICAL TRIALS IN A TERTIARY HOSPITAL: A DECADE OF EXPERIENCE (2015-2025)

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1 ULS de Santo António - Pediatric Clinical Trials in a Tertiary Hospital: A Decade of Experience (2015-2025)

Introduction: Pediatric clinical research remains underrepresented compared to the adult population. Although nearly 60% of the disease burden in studied conditions affects children, only 12% of clinical trials (CTs) are pediatric. According to the European Medicines Agency and the World Health Organization, off-label prescribing in pediatrics remains common and, although legal, may be associated with an increased risk of adverse events due to limited pharmacokinetic, dosing, and safety data in this population. The main determinants of this gap include limited commercial interest, age-related heterogeneity, and ethical and logistical challenges. Regulation (EC) No 1901/2006 introduced mandatory Pediatric Investigation Plans (PIPs), increasing pediatric authorizations, however low compliance with PIPs and delays in study execution persist.

Hospital Pharmacy Services (HPS) are an integral part of CTs, ensuring compliance with Good Clinical Practice and managing the investigational medicinal product (IMP) circuit, guaranteeing its quality, safety and traceability.

Methods: A retrospective observational study of pediatric CTs conducted in a Portuguese tertiary hospital between 2015 and 2025 was performed. All CTs involving a pediatric population were included, using data from institutional platforms Fundanet and Pharmacy Files. Variables collected included therapeutic area, study phase, number of participants and IMP handling activity.

Results: A total of 100 Pre-Study Visits (PSVs) and 33 Site Initiation Visits (SIVs) were recorded, corresponding to a PSV-to-SIV conversion rate of 33%. As of December 31, 2025, 25 pediatric CTs were active, with 30 participants enrolled, compared to 2 active CTs in 2019. Phase II and III trials were the most represented. The main therapeutic areas were Neurology, Inherited Metabolic Diseases and Nephrology. Two CTs required IMP handling by HPS, corresponding to approximately 17 preparations per month.

Discussion The progressive growth of pediatric CTs at the center is encouraging, driven by the center's status as a reference institution with internationally recognized investigators. The low PSV-to-SIV conversion rate highlights the need for greater investment and national capacity-building to enhance the competitiveness of Portuguese centers in selection by international sponsors. Law No. 9/2026, in force since April 2026, strengthens the protection of pediatric participants and may represent an opportunity in this regard, although its impact will depend on additional structural factors. The continued conduct of pediatric clinical trials remains essential to ensure safe, effective, and age-appropriate medicines across all age groups.

Palavras-chave: Clinical Trials, Pediatric, Hospital Pharmacy Services, Investigational Medicinal Product

A DE NOVO VARIANT IN TCF3 GENE ASSOCIATED WITH HYPOGAMMAGLOBULINEMIA AND B LYMPHOPENIA: A CASE REPORT

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Introduction: Hypogammaglobulinemia is a humoral immune deficiency characterized by reduced immunoglobulin levels in the blood, leading to recurrent infections (particularly respiratory), autoimmunity, allergies, and increased risk of neoplasia. It can be classified as primary (congenital) due to inborn errors of immunity, such as common variable immunodeficiency, or secondary (acquired) in context of poor antibody production or increased antibody loss, which could be associated with disorders such as leukemia or multiple myeloma. It can occur in childhood or adulthood and can affect both genders.

Clinical Case: We present a case of a 15 yr-old boy referred for genetic testing due to hypogammaglobulinemia and clinically asymptomatic B-cell lymphopenia. In addition, there was family history of beta-thalassemia. Whole-exome sequencing (WES) was performed on an Illumina platform. Analysis included two virtual panels encompassing 42 genes associated with antibody deficiency and 65 genes associated with severe combined immunodeficiency and combined immunodeficiency (SCID/CID). WES identified a novel heterozygous variant of uncertain significance (VUS) in the transcription factor 3 (TCF3) gene (NM_003200.5:c.1014G>A). Although this apparently silent variant (p.Ser338=) has not been described in patients with TCF3-related conditions, it is absent from population databases and bioinformatics analyses suggest a possible impact in the splicing mechanism. RNA studies are currently underway. Moreover, neither parent is a somatic carrier of the c.1014G>A variant, suggesting a de novo origin.

Discussion: According to OMIM, pathogenic variants in TCF3 have classically been associated with agammaglobulinemia, with either recessive or dominant inheritance (MIM #616941 and MIM #619824), and a severe immunological phenotype. However, a recent study has expanded the clinical spectrum, with the description of a milder phenotype associated with TCF3 haploinsufficiency [PMID: 37277074], that appears more consistent with the clinical and laboratory findings observed in our patient. In this context, the identified variant was considered relevant and is tentatively being reclassified as likely pathogenic. In summary, our findings support the recently described TCF3 phenotype of haploinsufficiency, associated with milder immunological presentations.

Palavras-chave: Hypogammaglobulinemia, de novo variant, TCF3 gene, whole-exome sequencing, immunodeficiency

GINECOLOGIA - OBSTETRÍCIA

COMUNICAÇÕES ORAIS

IMPLEMENTATION OF AN INNOVATIVE PRENATAL AQUATIC PREPARATION PROGRAM: MATERNAL PERCEPTION AND SATISFACTION

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Introduction: Physical activity during pregnancy is associated with multiple maternal and fetal benefits, with aquatic exercise being particularly recommended due to its safety, reduced joint load, relaxing effect, and positive impact on cardiovascular function. Despite these advantages, structured prenatal aquatic programs integrated into clinical settings remain scarce. This study aimed to describe the implementation of an innovative prenatal aquatic program in a hospital setting and to assess participants' perception and satisfaction.

Methods: This descriptive observational study was conducted at ULSGE and included pregnant women enrolled in a structured prenatal aquatic program. Sessions were held weekly, totaling four sessions of 45–60 minutes, and were offered to women from 28 weeks of gestation, with greater representation from 32 weeks onwards. Each session included approximately 12 participants, each accompanied by a companion of their choice. Since October 2024, approximately 400 pregnant women have participated. The program included pelvic mobility exercises, breathing training, relaxation techniques, and strategies to facilitate labor. Program adherence and participant satisfaction were evaluated.

Results: Participants reported high satisfaction and a positive overall perception. Reported benefits included relaxation, enhanced mother–fetus bonding, reduced lower back discomfort, and improved breathing and body awareness. The program also enabled couples to become familiar with part of the obstetrics team in advance, increasing confidence regarding childbirth.

Discussion: The program was well received and successfully integrated into clinical practice, representing a valuable complement to prenatal care. Findings indicate high satisfaction and a positive maternal perception. Evaluation of obstetric outcomes is ongoing, with systematic data collection underway to enable a more comprehensive assessment of the program's impact.

Palavras-chave: Prenatal aquatic exercise, Pregnancy, Maternal satisfaction, Prenatal care, Hydrotherapy

PAR2 DELETION OF THE Y CHROMOSOME INVOLVING VAMP7 IN MALE INFERTILITY

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Introduction: Male infertility is frequently associated with Y chromosome abnormalities, which may disrupt essential genes for spermatogenesis. The pseudoautosomal regions (PAR1 and PAR2), shared with the X chromosome, are critical for meiotic pairing and segregation. While azoospermia factor (AZF) microdeletions in the Y long arm are well-established causes of spermatogenic failure, structural alterations involving PAR2 remain rare and poorly characterized. The VAMP7 gene, located within PAR2, encodes a SNARE protein involved in vesicular trafficking and may contribute to male reproductive function.

Case Report: We report a 37-year-old male referred for cytogenetic evaluation due to severe oligoasthenoteratozoospermia (OAT). Chromosome analysis revealed a satellited Y chromosome suggesting a structural rearrangement between the Y chromosome and an acrocentric chromosome. Multiplex ligation-dependent probe amplification (MLPA) panel P036 demonstrated reduced dosage of VAMP7 (Xq28/Yq12), which was confirmed by fluorescence in situ hybridization (FISH) using a subtelomeric probe (Vysis). AZF microdeletion screening (AZFa, AZFb, AZFc) using MLPA panel P360 was normal. These findings represent a deletion of the terminal Yq region, thus the karyotype was established as 46,X,Y,qs.ish del(Y)(q12q12)(EST Cdy 16c07-).

Discussion: PAR2 region is essential for accurate meiotic pairing of sex chromosomes, and its disruption may lead to chromosomal instability and impaired spermatogenesis. VAMP7 is expressed in male reproductive tissues and plays a role in vesicular transport, lysosomal fusion, and membrane dynamics. Emerging evidence suggests that altered VAMP7 dosage may influence reproductive function through hormone-related pathways. This case describes a rare partial PAR2 deletion involving VAMP7 in the absence of AZF microdeletions. Furthermore, the structural rearrangement identified in the Y chromosome may reflect a potential interaction between the Y chromosome and acrocentric chromosomes, which could further compromise meiotic pairing and chromosomal segregation. Although a definitive genotype–phenotype correlation cannot be established, these findings point to possible mechanisms contributing to male infertility and highlight the importance of integrating cytogenetic and molecular approaches in infertility assessment.

Palavras-chave: Y Chromosome, VAMP7, Male Infertility

FIRST-TRIMESTER NON-VIABLE PREGNANCY: IS OUTPATIENT TREATMENT SAFE?

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Introduction: Approximately 10 to 15% of confirmed pregnancies result in spontaneous abortion, with over 80% occurring during the first trimester. Medical management is the primary option for treating incomplete or missed abortions. The most frequent complications associated with this method are incomplete abortion, severe hemorrhage, and endometritis.

Objectives: To describe the case series of complications associated with first-trimester non-viable pregnancy managed with a pharmacological protocol in a tertiary care center in 2025.

Methods: A descriptive, observational study was conducted. Clinical data from women who experienced complications following medical treatment for first trimester non-viable pregnancy between January and December 2025 were analyzed. At our center, the protocol consists of 200 mg of oral mifepristone administered in a hospital setting, followed 24 hours later by home administration of two doses of 800 µg of misoprostol (400 µg vaginal + 400 µg buccal) with a 4-hour interval.

Results: A total of 339 cases occurred in 2025, of which 250 (73.7%) were managed medically. Complications identified included: method failure (requiring repetition of full protocol due to persistent gestational sac) – 14 cases (5.6%); and incomplete abortion (ultrasound evidence of retained products of conception requiring additional intervention) – 42 cases (16.8%). Surgical uterine evacuation was needed in 8 cases (3.2%) – 7 curettages and 1 hysteroscopic resection. Overall, 6 cases of endometritis (1.7%) were recorded. No cases of severe hemorrhage requiring surgery or transfusion, pelvic organ injury, or maternal death were identified. The mean age of the cohort was 35 years, mostly nulliparous women, with a mean gestational age of 6 weeks and 6 days.

Discussion: Medical management of first trimester non-viable pregnancy demonstrated high efficacy, with a low requirement for surgical intervention (3.2%) and a reduced rate of severe complications. In conclusion, the medical protocol used is a safe and effective option, minimizing the morbidity associated with non-viable pregnancy and reinforcing its use as a first-line therapy.

Palavras-chave: First-Trimester Pregnancy, Non-viable Pregnancy, Outpatient treatment.

SMALL SUPERNUMERARY MARKER CHROMOSOME: A NON-CODING HIDDEN PLAYER IN AN INFERTILITY CASE

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Introduction: Infertility affects around 15% of couples attempting conception and may result from infections, hormonal, immune or genetic disorders. Chromosomal abnormalities are a significant cause of infertility, occurring in ~0.85% of the general population and increasing to 2.4–6.8% in couples with recurrent miscarriages. Additionally, 50–70% of early pregnancy losses are caused by chromosomal abnormalities. A rare finding in such cases is the presence of small supernumerary marker chromosomes (sSMCs), detected in under 1% of affected couples. These sSMCs cannot be fully identified using standard cytogenetic banding techniques. This study describes the combined use of conventional cytogenetic analysis and molecular techniques for the detection and characterisation of a sSMC in the male of a couple with recurrent miscarriages.

Clinical Case: A non-consanguineous couple presenting with a normal phenotype and recurrent spontaneous miscarriages was referred for cytogenetic studies. Cytogenetic analysis showed a normal female karyotype 46,XX, while the male presented with a mosaicism revealing two different cell lines: a majority of cells showed an extra sSMC (+mar) and the minority revealed a normal male karyotype 46,XY. Fluorescence in situ hybridization (FISH) and Multiplex ligation-dependent probe amplification (MLPA) were performed for the sSMC characterisation. The final karyotype was defined as 47,XY,+mar[44]/46,XY[6]. ish der(14/22)(D14Z1/D22Z1+). Family studies were unavailable.

Discussion: The male patient exhibited two cell lines: one normal (12%) and one with an additional marker chromosome (88%). Centromeric FISH probes suggested that the sSMC was derived from chromosome 14 or 22, but precise identification of the origin was not possible due to shared heterochromatic alphoid sequences (D14/22Z1). The apparent absence of euchromatin in the sSMC, as demonstrated by MLPA, justifies the absence of phenotypic manifestations. Previous studies report 4.4% of pregnancies involving sSMCs result in stillbirths or miscarriages. In this case the sSMCs may impair fertility by disrupting meiotic pairing, potentially generating unbalanced gametes. Parental studies are recommended in order to determine whether the chromosomal alteration is de novo or inherited, and provide adequate genetic counselling for the couple.

Palavras-chave: infertility, Small Supernumerary Marker Chromosome, cytogenetic

BEYOND TRADITIONAL CARE: DIGITAL INTERVENTIONS FOR PERINATAL DEPRESSION

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Perinatal depression is a worldwide prevalent condition, with wide-spread consequences on maternal and fetal health. Considering the numerous barriers to early detection and treatment of this entity, digital technologies have been suggested as a non-inferior impacting alternative, able to surpass face-to-face constraints and effectively target women at risk.

We conducted a Pubmed search using the query (postpartum depression OR perinatal depression) AND (artificial intelligence OR digital OR AI), restricted to English publications in the last five years. Observational studies and RCTs were included. Exclusion criteria consisted of articles not directly related to the topic and unavailable full text. A total of 7 studies were selected.

Six RCTs and one prospective cohort study were included in our study. Sample sizes ranged from 86 to 5299 patients. Five studies conducted interventions exclusively on the postpartum period; two also considered interventions during pregnancy. Control groups consisted of patients undergoing usual care or treatment, with exception to one study, which compared the digital intervention to a self-monitoring app. Most of the authors assessed the digital intervention's impact on disease treatment; one study focused on prevention and another on both preventive and therapeutic effects. Duration of the digital interventions ranged from 4 to 8 weeks. The great majority of the interventions were delivered through a mobile app, with exception from one (interactive website). Each intervention could have more than one of the following scopes: delivery of psychoeducational and obstetrical content (n=3), cognitive and/or behavioural therapy (n=4) and mindfulness training (n=2). Comparisons were performed through one or more validated questionnaires before and after use, the most employed being the EPDS. The great majority of the studies showed an either positive or non-inferior impact of the respective intervention on depressive symptoms, either during or after pregnancy. One study, despite failing to show significant improvement in depressive symptoms, demonstrated a significant impact on prevention of perinatal depression.

Our study showed that digital interventions may have a role in preventing and/or alleviating perinatal depressive symptoms, reinforcing that such alternatives might complement existing clinical practices in pregnancy and postpartum care, thus optimizing maternal and infant outcomes.

Palavras-chave: artificial intelligence, eHealth, perinatal depression

A RARE CASE OF LEIOMYOMA ARISING FROM A UTERINE REMNANT IN A PATIENT WITH MAYER–ROKITANSKY–KÜSTER–HAUSER SYNDROME

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Introduction: Mayer–Rokitansky–Küster–Hauser (MRKH) syndrome has an incidence of 1 per 4,500 females due to embryologic underdevelopment of the Müllerian duct, with resultant agenesis or atresia of the vagina, uterus, or both. A single midline uterine remnant may be present or uterine horns (with or without an endometrial cavity) may exist. Although uterine leiomyomas are common in the general population, their occurrence in MRKH syndrome is rare with fewer than 30 cases documented in the medical literature.

This case report describes a 40-year-old woman with MRKH syndrome who presented with two solid abdominopelvic masses suspected of leiomyomas. This case highlights the rarity of the diagnostic in the absence of a functional uterus.

Case report: A 40-year-old woman presented a one-year history of persistent lower abdominal pain and postcoital bleeding. Her MRKH syndrome diagnosis was established at 16 years old when she sought medical evaluation for primary amenorrhea and underwent intestinal vaginoplasty at a young age. Gynecological examination revealed normal external genitalia, atrophic vaginitis and no palpable pelvic mass.

Initial evaluation of lower abdominal pain was performed using transvaginal ultrasonography that revealed a uterine remnant with 25mm (longitudinal diameter), an anterior 60mm pedunculated mass suggestive of a fibroid with areas of cystic degeneration and a posterior vascularized 48mm mass also suggestive of fibroid. To clarify the findings, a magnetic resonance imaging (MRI) was requested. MRI demonstrated a hypoplastic uterus and two tubular structures that function as rudimentary uterine horns. From the right rudimentary horn emerges a pedunculated lesion suggestive of a fibroid with 61x43x37 mm and from the left rudimentary horn appears to originate another fibroid with 58x42x54 mm.

During laparotomic myomectomy, two pedunculated solid masses in subtorsion were identified emerging from the right and left uterine remnants, in a symmetrical way, both with 5 cm maximum dimension. The masses were excised. The rudimentary uterine horns, fallopian tubes and ovaries were preserved. The patient's post-operative course was uneventful, and histopathological examination confirmed a diagnosis of leiomyoma.

Discussion: In MRKH syndrome, leiomyomas are exceptionally rare and usually associated with uterine remnants, though they can also develop in myometrial fibrous bands, broad ligaments or parametrial tissue. The reason for this patient's presentation at this age is probably progressively enlarging leiomyomas under ovarian hormone influence causing lower abdominal pain. The management of leiomyomas in MRKH is relatively straightforward and typically involves surgical removal of the mass. When feasible, minimally invasive surgical approaches can enhance recovery and reduce post-operative complications.

Palavras-chave: 23999

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GAMIFICATION AS A MANAGEMENT STRATEGY IN PEDIATRIC HEALTH LITERACY AND SELF-CARE

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Introduction: Health literacy in childhood is a critical predictor of long-term clinical outcomes. However, nursing management faces the challenge of converting traditional educational methods into models that ensure the effective engagement of the child-family dyad. Gamification emerges as an innovative response, using game design elements to transform learning processes into interactive and motivating experiences.

Objective: To analyze the role of the Nurse Manager in implementing gamification strategies as innovative tools for promoting health literacy and optimizing self-care management in pediatric units.

Methodology: An integrative literature review focused on pediatric care management models incorporating game mechanics (rewards, narrative, progression). The analysis centered on the impact of these tools on health indicators, therapeutic adherence, and service efficiency.

Results and Discussion: Evidence reveals that integrating gamification into pediatric care management enables resource optimization (better discharge preparation and reduction of avoidable readmissions) and real-time data monitoring for managerial decision-making. There is a clear transition toward a model centered on the child's and family's autonomy and empowerment, increasing service satisfaction and humanization of care.

Conclusions: Innovation in pediatric nursing management necessarily involves the ludic digitalization of care. Gamification is not merely a recreational tool but an evidence-based management strategy that promotes literacy, enhances patient safety, and ensures a more efficient use of healthcare system resources.

Keywords: Nursing Administration Research; Gamification; Health Literacy; Pediatrics; Self-Care.

Palavras-chave: Nursing Administration Research; Gamification; Health Literacy; Pediatrics; Self-Care.

CESAREAN SECTION SAFETY CHECKLIST: WHAT IF THE NEWBORN BECAME PART OF THE FOCUS TOO?

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Introduction: Cesarean section is one of the most frequently performed surgical procedures worldwide, involving the simultaneous safety of both mother and newborn. The World Health Organization's Surgical Safety Checklist (SSC) has demonstrated effectiveness in reducing perioperative complications, yet it does not specifically address neonatal needs. Evidence highlights gaps in interdisciplinary communication, inadequate preparation of the neonatal environment, and insufficient anticipation of neonatal risks, supporting the need for an obstetric-specific adaptation of the SSC.

Methods: A narrative literature review was conducted with structured searches in PubMed, CINAHL, SciELO and the Cochrane Library. MeSH descriptors included Cesarean Section, Surgical Safety Checklist, Patient Safety, Infant, Newborn, Neonatal Nursing, Perioperative Care and Interdisciplinary Communication. Publications from 2009 to 2025, international guidelines and studies addressing surgical and neonatal safety were included. An analysis of clinical practice in an obstetric operating theatre complemented the review. After applying inclusion and exclusion criteria, 37 documents were analysed.

Results: Four critical domains emerged: (1) insufficient communication between obstetrics, anaesthesiology, neonatology and perioperative nursing; (2) inconsistent verification of neonatal resuscitation equipment and thermal preparation of the operating room; (3) variability in identifying and anticipating neonatal risks such as prematurity, fetal distress or congenital anomalies; and (4) absence of neonatal-specific items in the original SSC. Existing adapted checklists consistently incorporate neonatal parameters in the Sign In phase, enhanced communication during Time Out and structured neonatal assessment in Sign Out.

Discussion: Findings indicate that although the SSC is effective, it does not adequately address the specificities of cesarean delivery. Integrating neonatal components may enhance safety, reduce preventable adverse events and standardise essential practices. Interdisciplinary communication emerges as a central element, enabling alignment of care plans and anticipation of resuscitation needs. The adapted checklist proposed in this study addresses the identified gaps and aligns with international recommendations, representing a simple, feasible and potentially effective intervention. Clinical validation is recommended.

Palavras-chave: Perioperative nurse, Cesarean section, Surgical Safety Checklist

EFFICACY OF PELVIC FLOOR MUSCLE TRAINING IN FEMALE STRESS URINARY INCONTINENCE – A LONGITUDINAL STUDY

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Introduction: Stress urinary incontinence (SUI), as defined by the International Continence Society, is characterized by the involuntary leakage of urine associated with efforts that increase intra-abdominal pressure, exceeding urethral closure pressure. It is a prevalent condition among women, particularly in the postpartum period and menopause, with a significant impact on physical, emotional, social, and occupational quality of life. Despite this, many women do not seek care due to stigma and low health literacy. Conservative treatment is the first-line approach and includes pelvic floor muscle training, biofeedback, and electrostimulation, with nursing playing a key role in its implementation.

Methods: This is a quantitative, longitudinal study. The theoretical framework was based on a literature review conducted in PubMed, CINAHL, Cochrane Library, and MEDLINE databases, as well as guidelines from the International Urogynecological Association and the International Continence Society. The pelvic floor rehabilitation nursing protocol used in a Physical Medicine and Rehabilitation setting was reviewed.

Results: The sample included women with SUI followed in a specialized outpatient clinic, who underwent individualized conservative treatment consisting of pelvic floor muscle training, biofeedback, electrostimulation, and health education. Assessment was performed using the pad test and a voiding diary before and after the intervention, with follow-up extending up to three years. In a sample of 414 women, 97% achieved complete resolution of urinary leakage and 3% showed significant improvement, with sustained outcomes over time.

Discussion: The results are consistent with the scientific evidence and the recommendations of the International Continence Society, reinforcing conservative treatment as the first-line approach for SUI. The high success rate demonstrates the effectiveness of structured pelvic floor rehabilitation programs delivered by specialized nurses. Improvements in quality of life and women's empowerment were observed. Barriers such as stigma and low care-seeking behavior persist, highlighting the importance of early intervention. These findings support the central role of nursing in delivering effective, accessible, and person-centered interventions.

Palavras-chave: urinary incontinence; stress urinary incontinence

INNOVATION AND PERFORMANCE OF MULTI-HEADED DEVICES VERSUS SINGLE-HEADED: EVIDENCE OF THE NURSING CONTRIBUTION

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Introduction: Prick tests are an essential tool in the diagnosis of allergic disease. Multi-headed devices, Clusto Prick Test (CPT) may optimize time and reduce discomfort compared to single-headed devices, Skin Prick Test (SPT). The use of CPT in Pediatric Consultation led us to question its application in comparison with SPT, namely regarding execution time and pain perception in the Pediatric Patient (PP).

Thus, we aim to compare the performance of multi-headed versus single-headed devices in evaluating execution time and pain perception in PP.

Methods: A prospective interventional study was conducted in PP aged between 5 and 18 years, in a pediatric consultation setting, between September 2025 and March 2026, involving 300 PP with suspected allergic disease undergoing skin prick testing.

The main independent variable was the type of test. Dependent variables were execution time and pain perception. Characterization variables included age, consultation specialty, and pain scale. The objective was to compare CPT with SPT in 300 PP with suspected allergic disease, evaluating execution time and pain perception.

Results: A total of 300 PP with suspected allergic disease were evaluated (180 SPT; 120 CPT).

The median age was 9 years. Regarding execution time, the mean time for SPT was 25 minutes and for CPT was 21 minutes, corresponding to a difference of 4 minutes.

For pain perception, numerical and faces scales were used. The median pain score was 2 for CPT and 4 for SPT, corresponding to a difference of 2.

No severe adverse reactions were observed in either method. Local reactions were similar, consisting of erythema and papule at the application site.

Discussion: This study compared multi-headed devices (CPT) with single-headed devices (SPT) in 300 patients with suspected allergic disease, evaluating execution time and pain perception.

CPT showed shorter execution time (4 minutes less) and better tolerance, with lower pain scores (2 vs 4). The longer time required for SPT reflects multiple epidermal punctures, increasing duration and pain perception.

We conclude that CPT presents shorter execution time and better tolerance. Speed, comfort, and reduction of pain are particularly relevant benefits in pediatric age, improving cooperation and overall satisfaction of both patient and family.

ABORDAGEM ABCDE NO POLITRAUMA PEDIÁTRICO: UM CASO CLÍNICO EM SALA DE EMERGÊNCIA

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Introdução: O utente vítima de politrauma é aquele que apresenta duas ou mais lesões significativas, sendo pelo menos uma potencialmente fatal, envolvendo frequentemente regiões que protegem órgãos nobres, como o crânio, tórax e abdómen (Pape e Leenen, 2021). Em idade pediátrica, o politrauma assume particular complexidade, exigindo uma abordagem rápida, sistematizada e eficaz, dada a especificidade fisiológica e a maior vulnerabilidade desta população. A abordagem inicial ao utente politraumatizado baseia-se no algoritmo ABCDE — Viia aérea (Airway), Respiração (Breathing), Circulação (Circulation), Avaliação Neurológica (Disability) e Exposição (Exposure) — amplamente reconhecido como essencial na identificação precoce e tratamento imediato de condições potencialmente fatais. A sua aplicação estruturada permite uma intervenção prioritária e sequencial, contribuindo de forma determinante para a estabilização inicial do doente (Guyther e Wiltjer, 2022). Neste contexto, o papel de enfermagem é fulcral, destacando-se na monitorização contínua do estado clínico, na implementação de intervenções prioritárias de acordo com o algoritmo e na articulação eficaz com a equipa multidisciplinar. A atuação do enfermeiro é determinante na identificação precoce de alterações, na resposta rápida às necessidades do doente e na garantia da segurança e qualidade dos cuidados prestados.

Caso Clínico: Apresenta-se o caso clínico de um adolescente de 17 anos, vítima de acidente de viação de alta cinética enquanto condutor de motociclo, admitido na sala de emergência. À admissão, foi aplicada a abordagem ABCDE de forma sistematizada, permitindo identificar lesões potencialmente graves e iniciar, de imediato, medidas terapêuticas dirigidas, o que possibilitou a estabilização inicial do doente.

Discussão: Este caso evidencia a importância da aplicação rigorosa e sistemática do algoritmo ABCDE no contexto de trauma pediátrico. Reforça o valor da avaliação estruturada, na priorização de intervenções de enfermagem e por consequência, na melhoria dos desfechos clínicos. Destaca-se ainda a importância da vigilância contínua, da comunicação eficaz, do trabalho em equipa e do treino contínuo dos profissionais de saúde, enquanto pilares fundamentais para a prestação de cuidados seguros, eficazes e de qualidade (Cordeiro e Costa, 2023).

Palavras-chave: Trauma, Pediatria, ABCDE

HUMANIZATION OF CARE IN THE EMERGENCY DEPARTMENT: WHEN EARLY PREGNANCY LOSS OCCURS

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Introduction: Early pregnancy loss, defined as the spontaneous termination of pregnancy before 13 weeks of gestation, affects 15–25% of clinically recognized pregnancies and is the most common obstetric complication. Most women present to the emergency department as their first point of contact with healthcare services, making this setting crucial in shaping how the loss is experienced. However, overcrowding, lack of privacy, and gaps in communication and emotional support make this setting challenging for humanized care.

Objectives: To review the literature on humanized care in emergency settings for women and couples experiencing early pregnancy loss, aiming to characterize lived experiences, identify critical vulnerabilities, analyze barriers, and discuss implications for specialist maternal and obstetric nursing.

Methods: A narrative review was conducted using PubMed/MEDLINE, CINAHL, ScienceDirect, and Google Scholar, including studies (2016–2026) in English or Portuguese addressing psychosocial, relational, or environmental aspects of emergency care.

Results: Four domains emerged. First, experiences are marked by abandonment, invisibility, and lack of information. Second, the physical environment—lack of privacy and exposure to pregnant women and newborns—intensifies distress. Third, critical gaps occur at diagnosis, during miscarriage, and at discharge, with insensitive communication acting as relational iatrogenesis. Fourth, professionals show insufficient training and a tendency to minimize loss.

Discussion: Emergency departments often fail to provide humanized care due to structural and training limitations. However, improvements are possible. The midwife plays a key role in communication and emotional support. Humanizing care requires privacy, empathy, adequate information, and training. No loss should be minimized. Recognizing the loss, embracing grief as a legitimate and unique experience, and supporting each woman and each couple when they most need to be seen is not merely good practice—it is the minimum that human dignity demands.

Palavras-chave: early pregnancy loss; humanized care; emergency department; perinatal grief; maternal and obstetric nursing

FEBRILE SEIZURES IN CHILDHOOD: INTERVENTIONS OF THE PEDIATRIC NURSES IN CLINICAL MANAGEMENT AND PARENTAL EDUCATION

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Introduction: Febrile seizures (FS) are the most common childhood seizures, affecting 2–5% of children aged 6 months to 5 years and frequently leading to emergency room visits. Pediatric nurses play a central role in clinical stabilization and parental education, aligned with competencies defined by Ordem dos Enfermeiros (2018). This study's aim is to analyze the role of pediatric nurses in FS management and parental education, synthesizing evidence supporting information therapy and family-centered care.

Methodology: A narrative review was conducted led by the following research question: "In children with FS, what is the role of pediatric nurses in management and parental education?". Guided by the PCC strategy, Boolean search included "febrile seizure [Mesh] AND (infant [Mesh] or toddler or preschool or early childhood) AND (pediatric nurse practitioners [Mesh] or children nurse or nurses [Mesh])". Data bases were accessed through EBSCO and articles were screened through Rayyan. Studies on FS along with underlying clinical conditions were excluded, as well as untranslatable articles or without full text available.

Results: Of 45 studies, 8 were included (2 quasi-experimental study, 1 qualitative study, 1 cross-sectional study, 1 retrospective study and 3 reviews). The evidence points to the effect of nurse-led educational programs improving parental knowledge, reducing parental anxiety and risk behaviors, and, through information therapy, promote safer home practices related to FS. These programs also enhance nurse adherence to most recent FS guidelines. Additionally, one study highlights the importance of nurses' knowledge on managing FS, while others address the etiology of FS.

Discussion: Pediatric nursing should extend beyond monitoring and management of FS to include parental education and support. Structured education increases confidence, and follow-up improves retention of knowledge of the best practices at home. By assessing knowledge and sharing evidence, nurses should apply Casey's Care Model, partnering with parents to reduce anxiety, as targeted interventions improve positive parental responses. As parents often feel uninformed, information therapy is key. Given low health literacy on FS, pediatric nurses should promote innovative ways of sharing knowledge on safe approaches of FS with parents, as a new algorithm for a citizen-based project is proposed.

Palavras-chave: febrile seizures, pediatrics, information therapy

HIDDEN IN PLAIN SIGHT: WHEN NORMAL NEWBORN SCREENING IS MISLEADING"

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Introduction: Early infancy can present with subtle but progressive signs of underlying endocrine dysfunction, sometimes escaping detection in routine neonatal screening.

Case description: A male infant presented at approximately two months of age with macroglossia, perioral cyanosis, feeding difficulties, systolic murmur, umbilical hernia, and global hypotonia noticed during his first appointment with the family doctor after returning from the United Kingdom. Clinical deterioration with recurrent apneic episodes, bradycardia, and severe respiratory distress led to admission to the Pediatric Intensive Care Unit. On examination, the infant exhibited dysmorphic features, including macroglossia, low-set ears, short limbs, and signs of airway compromise. Laboratory evaluation revealed profound central hypothyroidism (TSH (Thyroid-Stimulating Hormone) <0.008 uIU/mL, free T4 <0.42 ng/dL). Genetic testing confirmed homozygosity for a mutation in the TSHB gene (Thyroid Stimulating Hormone Subunit Beta).

Due to upper airway obstruction associated with macroglossia and severe laryngomalacia, the patient required intubation, mechanical ventilation, and subsequent tracheostomy. The clinical course was complicated by nosocomial respiratory infections (*Klebsiella oxytoca* and methicillin-sensitive *Staphylococcus aureus*), successfully treated with antibiotics. Cardiac evaluation identified transient biventricular hypertrophy and a patent foramen ovale.

The patient was started on levothyroxine therapy, with progressive clinical improvement. Over time, he was successfully weaned from ventilatory support following normalization on polysomnography. In June 2025, he underwent endoscopic resection of a supratracheostomal granuloma. Follow-up demonstrated good growth, improving motor development, stable thyroid function under replacement therapy, and manageable recurrent respiratory infections.

Conclusion: Congenital central hypothyroidism is a rare, potentially life-threatening disorder, often linked to TSHB gene mutations, that may not be detected by standard TSH-based neonatal screening. Affected infants can present with macroglossia, hypotonia, and respiratory distress. Early recognition is critical, and family doctors play a key role in identifying subtle signs despite normal screening results. Prompt diagnosis, timely thyroid hormone replacement, and multidisciplinary care are essential to improve outcomes and prevent long-term complications.

Palavras-chave: Macroglossia, Hypotonia, Apneic episodes, Congenital Hypothyroidism, Neonatal screening limitations

INTEGRATING BABYWEARING INTO MATERNITY CARE: A QUALITY IMPROVEMENT INITIATIVE TO SUPPORT MATERNAL AUTONOMY AND INFANT CARE

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Introduction: The postpartum period constitutes a phase of increased vulnerability, marked by challenges in adapting to the parental role, often associated with low maternal autonomy and difficulties in managing newborn crying. These difficulties may compromise maternal well-being and the mother-infant bond. Babywearing, as a strategy that promotes proximity and continuous contact, has demonstrated benefits in reducing infant crying, increasing maternal self-efficacy, promoting breastfeeding, and improving mental health.

Objective: To describe the implementation of a babywearing project in an obstetrics department as a nursing intervention strategy aimed at promoting maternal autonomy and the well-being of the mother-infant dyad.

Methodology: A continuous quality improvement project developed in an obstetrics department. In an initial phase, the clinical problem was identified, characterized by low maternal autonomy and difficulty in managing newborn crying. Based on scientific evidence, an intervention centered on the introduction of babywearing was designed. Baby carriers (slings) were acquired, and training was provided to the nursing team to ensure competency in their use and in teaching puerperal women. The intervention is currently in the implementation phase. Impact evaluation will be conducted using validated instruments and subjective indicators, including maternal mental health (Edinburgh Postnatal Depression Scale), perception of newborn crying (maternal report), and confidence in performing the parental role (Likert-type scale), assessed during hospitalization and/or in the early postpartum period.

Results/Expectations: It is expected that the implementation of babywearing will contribute to increased maternal autonomy, improved confidence in performing the parental role, reduced newborn crying, and decreased maternal stress, with a positive impact on mental health and the mother-infant bond.

Discussion: The integration of babywearing as a nursing intervention in obstetric settings appears to be a simple, cost-effective strategy centered on the mother-infant dyad, with the potential to promote gains in maternal and neonatal health. The evaluation of outcomes will support its effectiveness and encourage its replication in other clinical contexts.

Palavras-chave: Babywearing; Maternity Care; Maternal autonomy; Infant and Maternal Wellbeing

SJÖGREN GYNECOLOGIC NURSING

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ti" Sjögren's Syndrome in the Gynecological Health of Sexually Active Women: The Role of the Family Nurse in Early Detection and Health Education — Scientific Review"

Introduction: Sjögren's Syndrome (SS) is an autoimmune condition that predominantly affects women and compromises exocrine gland function, including genital glands, leading to vaginal dryness, dyspareunia, and reduced sexual function. Women with SS exhibit significantly higher rates of vaginal pain and dryness compared with healthy controls (Kingsberg et al., 2024). Sexual health — an essential component of women's well-being — is frequently compromised in this population (Mitchell & Reed, 2023). Family nurses, due to their proximity and continuity of care, play a crucial role in the early detection of gynecological and sexual symptoms, which are often underreported due to stigma or normalization.

Objective: To synthesize current evidence on the gynecological and sexual manifestations of SS in sexually active women and to examine the role of the family nurse in early detection and health education.

Methods: A narrative literature review (2013–2024) was conducted using PubMed, Scopus, and Web of Science. Search terms included descriptors related to SS, sexual health, gynecology, primary care, and nursing. Eligible studies addressed gynecological manifestations, sexual dysfunction, and nursing-led educational interventions. A thematic analysis approach was applied.

Results: Evidence demonstrates a high prevalence of vaginal dryness, dyspareunia, and decreased sexual satisfaction among women with SS, particularly in primary SS (Sánchez-Guerrero et al., 2024). Recent reviews confirm that sexual dysfunction is significantly more common in this group than in the general population (Mitchell & Reed, 2023). Hormonal alterations, chronic inflammation, and psychosocial factors contribute to symptom severity (Drosos et al., 2019). Current recommendations emphasize systematic assessment of sexual health in primary care and gynecological settings.

Conclusion: SS profoundly affects gynecological and sexual health, with physical, emotional, and relational consequences. Family nurses are well positioned to detect early manifestations, as many women initially seek primary care for nonspecific symptoms such as vaginal dryness, fatigue, or joint pain—potential early indicators of SS (Kingsberg et al., 2024). Nursing educational interventions focusing on self-care, lubrication strategies, sexual comfort, and partner communication have been shown to improve perceived control, sexual satisfaction, and adherence to care. The literature highlights the need for multidisciplinary collaboration and enhanced professional training to integrate sexual function assessment into routine clinical practice.

Palavras-chave: Sjögren's Syndrome; sexual health; gynecology; primary care; family nursing; dyspareunia; vaginal dryness

DARING TO MAKE IT HAPPEN – THE WORK OF A PEDIATRIC PALLIATIVE CARE TEAM

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Introduction: Caring for children at the end of life is complex and demanding. It involves balancing the family's wishes and expectations with the best possible care provided by the multidisciplinary team. Children with cancer have specific needs, which must be addressed in the Individual Care Plan, enabling the fulfillment of objectives and the achievement of goals, and giving meaning to the final days of life.

Objective: To analyze the needs and care provided to a child at the end of life and their family, in accordance with ethical principles, by a Pediatric Palliative Care Team.

Case description: A 6-year-old child diagnosed with neuroblastoma was transferred to a hospital abroad to participate in a clinical trial after conventional treatment failed. Due to disease progression, the child no longer met the criteria for the clinical trial and returned to Portugal under the guidance of the Palliative Care Team. This team's end-of-life intervention made it possible to respect the wishes of the child and family and to continue care at home. This involved: preparing a hospital team that did not provide home care; performing specific therapeutic procedures; collaborating with community teams; empowering the family and increasing their involvement in decision-making and shifting priorities (from changing dressings to fulfilling dreams). The collaborative work of this team and family made it possible to achieve a higher quality of life at the end of life.

Discussion/Conclusion: Pediatric palliative care is an inalienable right of children with chronic, advanced, and progressive illnesses and their families.

The benefits of this care, as demonstrated in this clinical case, include efficiency, improved care delivered with greater technical rigor and humanity, better resource management, and the reduction of avoidable suffering.

An Individual Care Plan guided by a Pediatric Palliative Care Team enabled care tailored to the needs of the child and their family, allowing for a more individualized and humanized intervention.

The intervention of the In-Hospital Pediatric Palliative Care Support Team allowed for bolder and more effective action, with a focus on the quality of life of the child and family.

Palavras-chave: Palliative Care; Team; Individual Care Plan; Pediatrics.

EMOTIONAL VULNERABILITY AND OCCUPATIONAL STRESS AMONG OPERATING ROOM NURSES: IMPLICATIONS FOR PERIOPERATIVE EMOTIONAL SUSTAINABILITY

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Perioperative nurses work in highly complex environments characterized by intense rhythms, technical precision, and constant responsibility for patient safety. Within the operating room, where silence functions as discipline, concentration, and latent tension, emotional fragilities often remain invisible yet deeply present. Continuous exposure to emotional, psychological, and physical pressures makes these professionals particularly vulnerable to exhaustion, affecting their well-being, performance, and the quality of care delivered.

This study examines the emotional sustainability of perioperative nurses, exploring the factors that contribute to their vulnerability and the strategies that may promote balance and resilience. Existing literature shows that persistent occupational stress is associated with burnout, compassion fatigue, and reduced professional quality of life. Conversely, elements such as social support, positive leadership, emotional intelligence, and adaptive coping strategies emerge as essential protective factors. Psychosocial risks—including time pressure, interpersonal conflict, rotating shifts, and lack of recognition—further intensify emotional fragility, underscoring the need for structured organizational interventions.

To deepen the understanding of this reality, a questionnaire was administered to perioperative nurses, allowing the collection of data on their perception of experienced pressures, the emotional regulation strategies employed, and the impact felt in their daily professional practice. The results obtained contribute to a more concrete and contextualized understanding of these professionals' emotional experience.

Findings highlight that the emotional fragility of perioperative nurses is not a sign of individual weakness but a natural consequence of working in a highly demanding environment. Recognizing, studying, and addressing this dimension is an ethical and organizational imperative, essential for ensuring patient safety, quality of care, and the emotional well-being of those who provide it.

Palavras-chave: Perioperative nurse, Emotional sustainability, Mindfulness

HUMANIZATION AS INNOVATION IN NEONATAL CARE

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Abstract: Background: Preterm newborns (PTNBs) are more vulnerable to developing respiratory and nutritional complications, difficulties in body thermoregulation, a higher risk of acquiring infections, prolonged hospital stays and greater susceptibility to delays in overall, motor, and neurobehavioral development. These particularities require specialized and humanized nursing care.

Objectives: The objectives of this study are to reflect on humanization as an innovation in the neonatal context and to identify factors that hinder the provision of humanized care to PTNBs in Neonatology.

Materials and Methods: We conducted an integrative literature review with the aim of presenting a synthesis of multiple studies published over the past five years. The PRISMA guidelines guided our study.

We searched for publications in the database available at our institution, using the following descriptors: humanization, neonatal, and premature newborn. The search revealed 368 publications, which were analyzed according to the inclusion criteria we defined, resulting in the selection of 5 articles that met the objectives of our study. Of the 5 selected publications, we included exclusively scientific articles due to their demonstrated scientific rigor.

Discussion and Results: It was found that there is a growing concern among nurses regarding care in neonatology, which is reflected in increased humanization of care. The support provided to families, as well as the inclusion of parents/caregivers in the care process, is essential for the fulfillment of the parental role, as well as for the growth and development of newborns.

Interventions such as kangaroo care, minimal handling, clustered care, positioning, non-nutritive sucking, colostrum therapy, administration of sweetened solutions, and environmental management aim to improve breastfeeding, weight gain, psych-affective and neurobehavioral responses, reduce stress, and prevent infections and readmissions.

Palavras-chave: humanization, neonatal, and premature newborn

HUMANIZATION OF CARE IN HIGH-COMPLEXITY DELIVERY ROOMS: BETWEEN TECHNOLOGY AND PRESENCE

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Introduction: The increasing complexity of obstetric care, associated with the incorporation of advanced technology, has contributed to significant improvements in maternal and fetal safety. Humanization of care in high-complexity delivery rooms represents a contemporary challenge, requiring the integration of advanced technical competence with relational care based on respect, dignity, and autonomy.

Methods: A narrative review of the literature was conducted using international databases, focusing on studies published between 2020 and 2026 in the field of maternal and obstetric nursing. Studies addressing humanized practices in high-complexity settings were included, with emphasis on the integration between technology and woman-centered care.

Results: Evidence shows that humanized care is associated with improved maternal experiences, greater perceived control, and higher satisfaction with childbirth (Cantor et al., 2024). In high-complexity contexts, constraints include workload pressure, the centrality of technology, and fragmentation of care (Curtin et al., 2023). Nevertheless, therapeutic communication, continuous emotional support, and women's involvement in decision-making emerge as key determinants of care quality (Leinweber et al., 2024). Furthermore, the implementation of woman-centered care depends on the intentionality of the healthcare team, particularly specialized nursing (Pereira et al., 2025).

Discussion: Evidence supports that humanization in high-complexity delivery rooms does not oppose technology, but rather the depersonalization of care. Strategies such as therapeutic communication, professional presence, respect for dignity, women's involvement in decision-making, and relational continuity are fundamental. The Specialist Nurse plays a central role in integrating technical competence with woman-centered care. In high-complexity contexts, humanizing care does not mean reducing interventions, but ensuring that, amidst technology, the woman remains at the center of care.

Palavras-chave: Humanization of care, Respectful maternity care, Woman centered care

BETWEEN SHIFTS AND NOCTURNAL SILENCES: THE QUIET VULNERABILITY OF NURSES FACING BREAST CANCER RISK

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Breast cancer remains the most prevalent malignant neoplasm among women, representing a significant challenge for public health and for the protection of occupational health. Among emerging risk factors, shift work—and particularly night work—has been associated with circadian rhythm disruption, melatonin suppression, and hormonal alterations that may contribute to breast carcinogenesis.

Nurses, due to their high exposure to rotating shifts, consecutive night shifts, and demanding work environments, constitute a particularly vulnerable professional group. The International Agency for Research on Cancer (IARC) classifies night work as “probably carcinogenic to humans (Group 2A),” reinforcing the relevance of further exploring this association. Several studies have deepened this relationship, highlighting the biological and psychosocial impact of prolonged exposure.

A structured narrative review of the literature was conducted using international and national databases, integrating epidemiological studies, systematic reviews, and integrative reviews published over the past ten years. The thematic analysis enabled the synthesis of available evidence, focusing on the consistency of findings and biological plausibility.

The results reveal a consistent association between prolonged exposure to night work and an increased risk of breast cancer, particularly when exposure exceeds 10 to 15 years. The mechanisms described include circadian disruption, hormonal alterations, sleep disturbances, chronic fatigue, and occupational stress. Nurses exhibit a higher prevalence of these factors, which may amplify oncological vulnerability. Although methodological differences exist across studies, epidemiological trends are convergent and supported by robust biological evidence.

It is concluded that night work constitutes a potential occupational risk factor for the development of breast cancer in nurses, particularly due to its capacity to induce circadian disruption and alter biological processes essential to cellular homeostasis.

It is therefore imperative to implement occupational health policies that reduce prolonged exposure, ensure regular breast health monitoring, and promote shift reorganisation that prioritises safety, rest, and the emotional sustainability of professionals. The synthesis of available evidence confirms that night work, by persistently disturbing circadian rhythms and modulating hormonal, immune, and metabolic mechanisms, represents a risk that cannot be overlooked.

The IARC classification of night work as “probably carcinogenic to humans” reinforces the urgency of institutional strategies that ensure safer working environments and continuous surveillance programmes, protecting nurses’ health throughout their professional trajectory.

Palavras-chave: Breast Neoplasms; Shift Work; Circadian Rhythm; Occupational Exposure, Nurses

BREASTFEEDING AND DOWN SYNDROME: ANALYSIS OF A CASE STUDY.

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Introduction: Down syndrome can imply a delay in development, in motor, physical, and cognitive functions, which in a newborn (NB) can translate into hypotonia and reduced reactivity (Silva et al., 2023).

Clinical Case: The case study refers to a female newborn at early term with a prenatal diagnosis of trisomy 21. Admitted to the pediatric service for the acquisition of feeding autonomy (fed partly spontaneously and partly by gavage). Primitive reflexes present and adequate, mild hypotonia, reflex incoordination, and weak sucking reflexes. Mother intends to breastfeed and with regular breast milk extraction. This case study aims to describe the care process of acquiring oral skills in a newborn with Down syndrome.

Discussion: Breastfeeding is a practice that promotes cognitive and emotional development through the bonding, connection, and interaction that occurs between the mother-child dyad. It is essential for immunological and nutritional development and for stimulating oral/facial motor skills, making it necessary for the mother to know the ways and techniques of breastfeeding her child (Silva et al., 2023). Children with Down syndrome have a weak sucking reflex, so they learn to control the flow of liquids by sticking their tongue out. They have difficulty producing and coordinating the movements necessary to control their tongue due to their hypotonia, which induces a delay in the acquisition of oral competence (Fundación Iberoamericana Down21, n.d.). In the case study, the newborn began oral skills training with a bottle from the 4th day of life. However, given her weak sucking/swallowing reflexes, it was necessary to maintain nasogastric tube feeding until approximately 2 months of age. During hospitalization, training in the acquisition of oral skills was carried out: sucking at the breast at the beginning of feeding for 5 minutes, subsequently fed by bottle, and the remaining milk not ingested was administered by gavage. Because the transition from nasogastric tube feeding to oral feeding is a continuous and slow process, the parents were trained in this area. Given the mother’s intention to breastfeed, the acquisition of this skill was always encouraged. The support provided by the nurses was fundamental in this adaptation. The newborn achieved feeding independence at around 2 months of age and at 3 months of age was exclusively breastfed (Sousa et al., 2023).

Palavras-chave: Breastfeeding; Down Syndrome; Nursing.

FROM SKIN-TO-SKIN TO PAIN RELIEF: TRANSLATING EVIDENCE INTO INNOVATION IN PRETERM NEONATAL CARE

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Introduction: In neonatal intensive care, preterm newborns are repeatedly exposed to painful procedures, with potential long-term neurodevelopmental consequences. Translating evidence into clinical innovation is essential to improve outcomes. Kangaroo Mother Care (KMC), based on skin-to-skin contact, has emerged as a key evidence-based intervention with potential to transform pain management practices.

Methods: An integrative literature review was conducted using the EBSCO database, focusing on studies published in the last five years. The search included the descriptors “premature”, “kangaroo mother care method” and “pain”. Of the 22 studies identified, 9 met the inclusion criteria after screening.

Results: Evidence consistently demonstrates that KMC effectively reduces procedural pain in preterm and term newborns. Lower pain scores (e.g., Premature Infant Pain Profile), improved heart rate stability, higher oxygen saturation, and better cerebral oxygenation were reported during painful procedures such as heel lance and tube insertion. Compared to oral sucrose, KMC showed comparable or superior effectiveness, with additional benefits related to physiological regulation and absence of adverse effects. Enhanced outcomes were observed when combined with breastfeeding.

Discussion: KMC represents a shift from evidence to innovation in neonatal care by integrating effective pain management with humanized, family-centered practices. As a low-cost and easily implementable intervention, it empowers healthcare professionals - particularly nurses, to lead evidence-based change. Its systematic adoption can redefine pain management as a quality indicator in neonatal care, improving both clinical outcomes and parent-infant bonding.

Embedding KMC into routine neonatal practice is not only an evidence-based choice, but a transformative step towards more humane, effective, and innovative care.

Palavras-chave: premature, kangaroo mother care method, pain

ECTOGENESIS AND ARTIFICIAL WOMBS: EMERGING CHALLENGES FOR OBSTETRIC NURSING PRACTICE

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Introduction: Advances in reproductive medicine and biomedical engineering have driven the development of systems capable of supporting fetal development outside the human body, either partially (partial ectogenesis) or fully (complete ectogenesis). Commonly referred to in simplified terms as an “artificial womb”, this possibility remains outside clinical practice but raises important questions regarding reproduction, parenthood, and care in high-risk contexts. This study aims to analyse the current state of ectogenesis and artificial womb development, exploring its clinical and ethical implications and its potential impact on obstetric nursing practice.

Methods: Narrative review of scientific literature published between 2020 and 2025, using PubMed, Scopus, and Web of Science databases. Eleven articles were selected based on scientific relevance.

Results: Artificial wombs are currently in an experimental stage, with results limited to animal models and partial fetal support systems, including extracorporeal circulation devices and biomimetic environments that simulate intrauterine conditions. Some studies demonstrate the feasibility of supporting fetuses at advanced stages of development, with preservation of essential physiological functions and potential improvements in neonatal outcomes and reduction of complications associated with extreme prematurity. These advances may also contribute to redefining the role of obstetric nursing in the care of highly complex technological scenarios. However, significant technical limitations persist, particularly in oxygenation control, nutrition, and infection prevention. Currently, no technology exists capable of sustaining a complete human pregnancy outside the maternal body.

Discussion: Ectogenesis may transform the paradigm of human reproduction, raising ethical, legal, and social issues, particularly regarding fetal status and the medicalisation of pregnancy. It may also impact fetal viability and the limits of prematurity. In this context, obstetric nursing plays a central role in parental education, supporting informed decision-making, and promoting humanised care. At the same time, this scenario requires the development of new competencies, particularly in the monitoring of advanced technologies and communication in ethically complex contexts.

Palavras-chave: Ectogenesis and artificial wombs: emerging challenges for obstetric nursing practice

INFANT MASSAGE IN PREMATURE NEWBORNS ADMITTED TO NEONATAL INTENSIVE CARE UNITS: INTEGRATIVE LITERATURE REVIEW

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Introduction: Premature newborns suffer early sensory deprivation resulting from their early birth. Neonatal Intensive Care Units (NICUs), despite guaranteeing the clinical stability and survival of premature newborns, are a completely different environment from the intra-uterine environment, presenting harmful effects and putting their neurodevelopment at risk.

Massage is an ancient therapeutic technique, first documented in Chinese medical literature around 4000 years ago and its application in NICUs dates back to the year 1980. It consists of the systematic application of tactile stimulation through a variety of techniques, stimulating the sensory receptors of the skin, muscles, bones and joints. The studies carried out revealed that this technique provides positive sensory stimuli to premature newborns, with indicated benefits in their growth and development. In this context, the research question arose "What are the effects of infant massage on premature newborns admitted to Neonatal Intensive Care Units."

The objective of this literature review is to compile the results of existing scientific evidence on the effects of infant massage on premature newborns admitted to NICUs.

Methods: An integrative literature review was carried out by searching the databases: "Medline", "Cochrane Central Register of Controlled Trials", "CINAHL Complete", "MedicLatina" and "Cochrane Clinical Answers". The research was carried out using the selected descriptors and took place between March and April 2024. A total of 357 articles emerged from this research. The research was subsequently improved, which now includes only studies published in English and Portuguese and with full text available, carried out in the period between 2014 and 2024, regardless of their methodology. After the selection process, a total of 12 articles were analyzed, including systematic literature reviews, randomized clinical trials and pilot studies.

Results: The articles analyzed allowed us to verify that the majority of studies carried out reported the positive effect that massage has on increasing the weight of premature newborns. Some studies have also shown that massage has benefits in decreasing length of stay, improving gastrointestinal symptoms, reducing pain, improving sleep patterns, reducing the risk of infections and decreasing transcutaneous bilirubin levels. Most studies have also proven the existence of a positive relationship between massage and progress in the neurodevelopment and behavior of newborns.

Discussion: Massage in the NICU context should be seen as part of care focused on the development of premature newborns, but more studies are still needed in this area. It is not known which massage technique is best, although the most widely described in the literature is the Field technique; which babies benefit most from massage; whether any oil should be used during the massage and what is the best time, duration and frequency of the massage.

The studies analyzed did not identify any risk in performing massage for premature newborns who were clinically stable and had no contraindications for performing it.

There still seems to be some reluctance on the part of nurses in carrying out the intervention and it is suggested by the authors of the studies to reinforce education and training for both health professionals and parents.

Palavras-chave: Massage, Premature Newborns, NICU, Development-Centered Care

COMMUNICATING WITH CHILDREN IN THE OPERATING ROOM: THE NURSE'S ROLE IN REDUCING FEAR

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Introduction: Hospitalization and surgery are potentially negative experiences that can cause fear and anxiety in children and their families. Fear varies according to age, cognitive development, and previous experiences, and is often exacerbated by the unknown. In this context, communication plays a central role in the practice of perioperative nursing, allowing the child and family to be prepared for surgery with the least possible emotional impact.

Methods: Literature review based on reference data.

Results: The analysis shows that preparing the child through communication appropriate to their developmental level is the most effective intervention in reducing fear and anxiety. Strategies such as therapeutic play, distraction, and the progressive explanation of procedures promote greater understanding, cooperation, and a sense of control. Parental involvement is essential, positively influencing the child's emotional adaptation and sense of security. Clear and individualized communication also contributes to reducing negative behaviors in the postoperative period.

Discussion: Communication tailored to each child and family is crucial to humanizing perioperative care and constitutes a fundamental nursing intervention that helps demystify the surgical environment and restore a sense of security. In short, the goal is to ensure the most positive surgical experience possible, one that restores the child's health and further strengthens the bond between child and parents.

ENFERMAGEM

POSTERS

SEXUAL AND REPRODUCTIVE HEALTH NEEDS OF HOMELESS WOMEN: PROTOCOL FOR A SCOPING REVIEW

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Introduction: The number of people experiencing homelessness has been rising worldwide. Whilst it is well established that homelessness increases health needs, it is also recognised that this situation can limit access to healthcare. For women, health concerns are even greater, as they require support in the area of sexual and reproductive health.

It is therefore essential to review the available evidence on the sexual and reproductive health needs of homeless women, as well as to identify barriers and facilitators to accessing care.

Methods: A scoping review will be conducted in accordance with the Joanna Briggs Institute (JBI) methodology and reported using the PRISMA-ScR checklist. The review will be guided by the acronym PCC: homeless women (Population), sexual and reproductive health needs (Concept) and access to healthcare (Context).

Quantitative, qualitative and mixed-methods studies will be included, as well as grey literature. No geographical, linguistic or temporal restrictions will be applied.

The search will be conducted in the following databases: MEDLINE (PubMed); Embase; CINAHL (EBSCOhost); PsycINFO (EBSCOhost); Scopus; and Web of Science Core Collection, supplemented by a search of grey literature, namely RCAAP, the CAPES Thesis Database, ProQuest Dissertations & Theses, and organisational websites (e.g. FEANTSA, UNFPA). Two independent reviewers will select the studies and extract the data, resolving any disagreements by consensus or by consulting a third reviewer. The data will be synthesised using descriptive analysis and inductive thematic mapping.

Results: The aim is to identify and categorise the main sexual and reproductive health needs, as well as the barriers and facilitators to accessing care. The results will enable the information to be organised into thematic categories, allowing critical areas to be mapped, gaps in knowledge to be highlighted, and priority areas for future research to be identified.

Discussion: This review will provide a deeper understanding of the needs of this vulnerable population and the factors that influence their access to care, and may inform the development of more equitable health interventions and policies.

Palavras-chave: Homeless women, Sexual and reproductive health, Access to healthcare, Barriers, Facilitators

FAMILY-CENTRED CARE IN NEONATAL INTENSIVE CARE UNITS

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Introduction: The parenting process is disrupted when a newborn is admitted to a neonatal intensive care unit (NICU). As it is estimated that around 10% of newborns require NICU care (WHO, 2022), it is imperative that nurses meet the health needs of both the newborn and their family. Nurses must involve the family as integral member of the team and a partner in care.

Family-Centred Care (FCC) is based on the principles of dignity and respect, effective information sharing, care partnerships, and inclusive decision-making processes. Implementing this strategy has been demonstrated to promote weight gain, breastfeeding, satisfaction, trust, and parental empowerment.

This review aims to identify nursing interventions that promote FCC, aiming to excellence in neonatal clinical practice.

Methods: Narrative literature review conducted in PubMed and ScienceDirect.

Results: Educational interventions: support parents and promotes partnership.

Communicational interventions: information sharing that promote parents/nurse relationships, and emotional support.

Environmental interventions: family rooms, dedicated spaces, and the guarantee of 24-hour parental access and visits (Kleger et al., 2024; Mariani et al., 2024; Yeomans et al., 2026; Zhang et al., 2026).

Education interventions for staff: support practice (Mariani et al., 2024; Yeomans et al., 2026; Zhang et al., 2026).

Support interventions: psychosocial and peer support (Kleger et al., 2024; Mariani et al., 2024; and Zhang et al., 2026), and religious support (Mariani et al., 2024).

Discussion: The educational approach is characterized by parental empowerment and negotiated of their involvement in care and decision-making processes, promoting parental satisfaction, active participation, and the development of parental capacities. Communication requires the sharing of impartial information, thereby mitigating parental stress and fostering trust and engagement in care (Kleger et al., 2024; Mariani et al., 2024; Yeomans et al., 2026). It is imperative that education and communication be culturally sensitive, and that nurses receive adequate training (Yeomans et al., 2026).

The practice of rooming-in and kangaroo care has been demonstrated to promote bonding, parental autonomy, and the neurobehavioral development of the newborn.

The integration of psychosocial and peer support, in conjunction with the facilitation of visitor access, has been demonstrated to fortify the parental support network (Kleger et al., 2024; Mariani et al., 2024; Zhang et al., 2026).

Conclusion: The effectiveness of FCC is contingent upon the implementation of structural changes in the NICU and training to the entire team. Furthermore, it is essential to acknowledge the role of parents as active partners, while respecting their cultural beliefs and practices.

Palavras-chave: Family, Infant, Newborn, Nursing Care, Neonatal Intensive Care Unit

EFFECTIVE COMMUNICATION DURING HANDOVER SHIFTS IN NEONATAL UNITS: IMPLEMENTATION OF THE ISBAR METHODOLOGY

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Background: Effective communication is essential for healthcare safety, particularly during nursing handover shift, a critical moment in the transition of care. It is estimated that up to 70% of adverse events result from communication failures. In Portugal, the health department (DGS) has established the ISBAR methodology (Identify, Situation, Background, Assessment, Recommendation) as a mandatory model for standardising clinical communication, in accordance with Regulation No. 001/2017. In Neonatal Units, where clinical complexity and the vulnerability of newborns demand a high degree of precision, this structured approach to communication is essential to ensure the continuity and quality of the care provided.

Aims: The study aimed to analyse the evidence regarding the use of ISBAR during neonatal handover, identify its contributions to patient safety and quality of care, and summarise the challenges and strategies involved in its implementation.

Method: An integrative literature review was conducted using the PubMed, CINAHL, Scielo and B-on databases, supplemented by official documents from the DGS, WHO and Joint Commission International, focusing on articles published between 2017 and 2025 that addressed structured communication in neonatal or paediatric settings.

Results: The results show that the adoption of ISBAR is associated with a reduction in clinical errors, due to fewer omissions of relevant information (allergies, medication, haemodynamic status), improved interprofessional communication and a reduction in handover time, thanks to the elimination of redundant information. There is also an increase in confidence among staff, particularly among less experienced staff, and a better structuring of clinical information specific to the neonatal context, such as gestational age, weight, ventilatory support and vascular access. The literature indicates that prior training of teams and the use of checklists adapted to the department are key factors for the success of the methodology.

Conclusions: The ISBAR methodology proves to be an effective and flexible tool that meets the safety and quality requirements of neonatology. Its implementation must be supported by ongoing training, active leadership and regular audits, ensuring the establishment of a culture of safe communication centred on the newborn and the family.

Palavras-chave: ISBAR, Neonatal Intensive Care Unit, nursing handover, patient safety, transition of care

POSITIVE TOUCH IN NEONATOLOGY

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Introduction: Touch is the first sense to develop and constitutes a fundamental need for newborns. However, newborns admitted to neonatal intensive care units (NICUs) often experience tactile deprivation (La Rosa et al., 2024), which impacts cardiorespiratory stability, stress, neurosensory development, self-regulation, and bonding (Bond, 2002; La Rosa et al., 2024; Nguyen et al., 2025; Valori et al., 2025).

In 2002, Bond conceptualized positive touch as a structured, intentional, gentle tactile interaction sensitive to the newborn's cues, performed by a healthcare professional or parent.

Given the above, there is an urgent need to identify interventions that promote positive touch in NICUs.

Methods: Narrative literature review in the PubMed and CINAHL databases.

Results: The interventions identified include: skin-to-skin contact (SSC)/Kangaroo Care (KC), therapeutic massage (TM) (Bond, 2002; Chandannavar, 2021; La Rosa et al., 2024; Nguyen et al., 2025; Valori et al., 2025), Gentle Human Touch (GHT)/holding (Bond, 2002; Nguyen et al., 2025; Valori et al., 2025), cradling (Bond, 2002), and handling (Bond, 2002; Howe, 2022).

SSC/KC consist of skin-to-skin contact with the newborn in a prone position on the parent's chest, differing in that SSC involves occasional sessions while KC is integrated as a continuous care practice, respectively. TM involves tactile-kinesthetic stimulation. GHT corresponds to placing warm hands on the newborn's body, typically the head and buttocks (Valori, et al., 2025). Handling refers to tactile interaction during care, involving gentle, organized movements and positioning that are sensitive to the newborn's cues (Bond, 2002; Howe, 2022).

Discussion: Positive Touch integrates the identified practices and, across the board, reduces stress and pain, promotes comfort, self-regulation, healthy sleep patterns, neurosensory development, and parental bonding. Additionally, SSC/KC contribute to cardiorespiratory stability and thermoregulation (Bond, 2002; Chandannavar, 2021; La Rosa et al., 2024; Nguyen et al., 2025; Valori et al., 2025).

TM yields mixed results regarding physiological parameters and may increase wakefulness and motor activity, requiring caution in the NICUs (Valori et al., 2025).

GHT is effective in modulating pain, promoting self-regulation, and reducing cardiorespiratory instability during procedures (Nguyen et al., 2025; Valori et al., 2025).

Handling is a neuroprotective intervention that promotes physiological stability and self-regulation (Bond, 2002; Howe et al., 2022).

Conclusion: The systematic integration of positive touch into neonatal care is essential. It requires specific professional training and the active involvement of caregivers. The effectiveness of these interventions relies on the caregiver's sensitivity and their ability to interpret the newborn's cues.

Palavras-chave: Newborns, Positive Touch, Neonatal Intensive Care Units

REALIDADE VIRTUAL COMO ESTRATÉGIA NÃO FARMACOLÓGICA NA PEDIATRIA

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Virtual reality (VR) has emerged as an innovative non-pharmacological intervention in pediatric healthcare, particularly for the management of pain, anxiety, and fear associated with invasive procedures and hospitalization. By promoting immersive distraction and attentional redirection, VR may reduce both pain perception and emotional distress. In pediatric populations, these benefits are especially relevant, as anxiety and fear may compromise cooperation, adherence, and the overall care experience. This review aimed to assess the current scientific evidence on the clinical application of VR in pediatric care.

Methods: A narrative literature review was conducted using PubMed, MEDLINE, Scopus, and Web of Science. The search strategy included the descriptors “virtual reality,” “pediatrics,” “children,” “pain,” “anxiety,” “vaccination,” and “healthcare.” Eligible studies comprised original articles, systematic reviews, randomized controlled trials, and meta-analyses published in recent years, focusing on the direct clinical use of VR in children and adolescents. Studies related exclusively to professional training or rehabilitation without direct pediatric clinical application were excluded.

Results: The available evidence supports the effectiveness of VR in reducing preoperative anxiety, procedural fear, and pain during vaccination, venipuncture, burn care, and pediatric oncology procedures. A randomized controlled trial involving 107 child-caregiver dyads demonstrated that preoperative VR significantly reduced anxiety by increasing calmness and decreasing worry in both children and caregivers. In vaccination settings, VR significantly reduced fear, although pain reduction was not statistically significant. Additional reported benefits included improved cooperation, reduced need for physical restraint, and high satisfaction among caregivers and health-care professionals.

Discussion: VR appears to be a safe, feasible, and well-accepted adjunctive intervention, with potential to enhance the humanization of pediatric care and reduce procedural distress without increasing pharmacological burden. However, heterogeneity of study protocols and lack of device standardization remain important limitations. Further research is needed to clarify clinical indications, optimal duration of exposure, and cost-effectiveness.

Palavras-chave: Realidade Virtual, inovação, dor, ansiedade, pediatria

HEALTH LITERACY IN OUTPATIENT SURGERY: THE PIVOTAL ROLE OF NURSING IN THE TRANSITION OF CARE

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Introduction: Outpatient surgery has seen significant growth, driven by technological innovation and the optimization of hospital resources. This model involves early discharge, assigning the patient and their informal support network a central role in postoperative management. In this context, Health Literacy (HL) emerges as a critical determinant of clinical outcomes, with inadequate levels associated with a higher risk of complications, readmissions, and non-adherence to treatment.

Objectives: To analyze the scientific evidence on the impact of HL on clinical outcomes in outpatient surgery and to identify the most effective nursing interventions for empowering surgical patients.

Methods: A narrative review of the literature in the PubMed, CINAHL, and SciELO databases, including articles published in the last 5–7 years in Portuguese and English, using the following search terms: Ambulatory Surgery, Health Literacy, Nursing Care, and Patient Education.

Results/Discussion: Three domains of nursing intervention with an impact on clinical outcomes were identified. In preoperative assessment, the use of HL screening tools allows for personalized education; the Teach-Back technique has proven effective in identifying gaps in understanding, particularly in populations with low literacy. In information management, materials with visual aids and accessible language promote greater retention of clinical guidelines compared to verbal instructions or documents with high linguistic complexity. In continuity of care, structured telephone contact within the first 24 hours after discharge proved effective in the early detection of warning signs and in reducing unplanned readmissions.

Conclusion: Health literacy transcends mere reading ability, constituting the capacity to understand, interpret, and act upon clinical guidelines. Nurses play a central role in empowering patients and their support networks. Interventions aimed at promoting health literacy contribute to reducing preoperative anxiety and increasing patient safety, satisfaction, and autonomy in the post-discharge period, thereby enhancing the quality of outpatient care.

Palavras-chave: Ambulatory Surgery, Health Literacy, Nursing Care, Patient Education

INNOVATING PERINATAL BEREAVEMENT CARE: THE HUMANIZED APPROACH OF THE BUTTERFLY PROJECT

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Introduction: Perinatal loss in a Neonatal Intensive Care Unit (NICU) represents a moment of profound vulnerability for families and a significant emotional and ethical challenge for healthcare professionals. The need for a structured, empathetic, and humanized approach to bereavement motivated the implementation of the Neonatal Butterfly Project at the Centro Materno Infantil do Norte (CMIN). Developed in the United Kingdom by Dr. Nicholas Embleton and the Newcastle University team, the project aims to support families experiencing the loss of one baby in a multiple pregnancy, enhance staff sensitivity and training, and improve communication during and after the loss.

Objectives: Implement a structured perinatal bereavement support strategy based on the Neonatal Butterfly Project. Promote humanized care through sensitive and coherent communication among professionals. Strengthen nurses' emotional, communicational, and clinical preparedness. Create conditions that support memorymaking and farewell rituals tailored to each family.

Materials and Methods: Implementation included reviewing international best-practice models and adapting them to the NICU; creating specific materials such as Butterfly signage, condolence cards, and memory kits; providing training focused on communication and emotional support; defining an assisted care pathway for families before, during, and after the loss; and establishing partnerships with bereavement associations and providers of memory items.

Results: The project standardized practices and improved the sensitivity of bereavement care. Butterfly signage enhanced team communication and reduced inadvertent interactions. Nurses reported increased confidence and preparedness, recognizing the positive impact of training and dedicated resources.

Discussion: Integrating the Butterfly Project proved essential for promoting humanized care and strengthening professionals' emotional and communicational competence. Standardized practices reduced variability and enhanced families' emotional safety, highlighting the importance of continuous training and interprofessional collaboration.

Conclusion: The Butterfly Project represents a significant advancement in humanized perinatal bereavement care. Families benefit from more empathetic, coherent, and dignified support, while nurses gain essential emotional and professional competencies. The project stands as a high-value human and clinical strategy.

Palavras-chave: Perinatal bereavement; Humanized care; Neonatology

NURSING CARE FOR CHILDREN ON EXTRACORPOREAL MEMBRANE OXYGENATION: WHAT DOES THE SCIENCE TELL US?

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Introduction: Extracorporeal Membrane Oxygenation (ECMO) is a therapy that uses a partial cardiopulmonary bypass or a serial pulmonary circuit to provide cardiac and/or pulmonary support. This therapy is indicated for adult, pediatric, and neonatal patients with severe respiratory and/or cardiac diseases that are potentially reversible and unresponsive to conventional therapy. The physiological goals of ECMO include improving oxygen delivery to tissues, removing carbon dioxide from venous blood, supporting aerobic metabolism, and minimizing lung injury. The main objective of this article is to describe the scientific evidence produced regarding nursing interventions related to ECMO in the pediatric population.

Methodology: This is an integrative literature review using the electronic databases SciELO, EBSCO, and PubMed, with the search restricted to studies published between 2018 and 2024. Studies published in Portuguese, English, and Spanish were included. Exclusion criteria comprised all studies that did not address the research question, as well as studies without free full-text access. Data collection was carried out from May to June 2024.

Results: Initially, 71 articles were identified across the databases, and after a thorough selection process, 5 articles remained to compose the final results, including quantitative and mixed-methods studies. Data analysis revealed that extracorporeal membrane oxygenation is performed by a multidisciplinary team composed of physicians, nurses, and anesthesiologists. Nursing professionals play a fundamental role in patient monitoring and in the functioning of the entire ECMO system. Monitoring peripheral circulation (presence of neurovascular impairment), dressing changes, prevention of possible infections, blood gas analysis, neurological and cardiac assessment, among others, are some of the nursing interventions performed in children undergoing ECMO.

Discussion: The studies analyzed, mostly conducted outside Europe, demonstrate that ECMO is an increasingly used technique in critically ill children, with nursing care being fundamental to treatment success. Nurses assume a central role in continuous monitoring, prevention of complications, and comprehensive care management, with interventions such as hemodynamic assessment, infection control, and nutritional support standing out. Despite the benefits of ECMO, there are significant risks, including hemorrhage and cardiovascular and respiratory alterations, requiring a high level of technical competence. The evidence reinforces the need for evidence-based recommendations and further research in this area due to the scarcity of available studies.

Palavras-chave: ECMO, Children, Nursing

CONSTRUCTION OF HEALTHY NURSING ENVIRONMENTS: THE STRATEGIC ROLE OF THE NURSE MANAGER IN BRIDGING EVIDENCE AND PRACTICE

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Introduction: Healthy nursing environments constitute a central determinant of care quality, patient safety, and professionals' well-being. Scientific evidence recognizes the nurse manager as a key element in the development of favourable practice settings, through the implementation of strategies that promote professional recognition, teamwork, and the development of positive organizational cultures, acting as catalysts for innovation within services.

Methods: Exploratory-descriptive study, centred on a narrative literature review on healthy nursing environments and the role of leadership, with the aim of identifying factors and strategies that promote favourable practice settings. As a complement, an online questionnaire was applied to nurses from different services, composed of questions derived from the scientific evidence identified in the literature review, with the aim of exploring the concordance between participants' perceptions and the findings from the literature.

Results: The literature review shows that healthy environments are strongly associated with participative and transformational leadership styles, effective organizational support, effective communication, involvement of professionals in decision-making processes, adequacy of resources, and promotion of continuous professional development. Professional recognition, appreciation, and satisfaction emerge as determining factors for nurse retention and improvement in care quality. The data obtained corroborate these findings, highlighting positive leadership, professional recognition and appreciation, and the strengthening of team spirit as priority strategies.

Discussion: The results demonstrate convergence between scientific evidence and professionals' perceptions, reinforcing the relevance of the nurse manager's leadership in the construction of healthy practice environments. The centrality of relational, organizational, and professional development strategies highlights the role of the nurse manager as a facilitator of change and innovation. Support for professional development and communication were identified by nurses as the strategies most promoted by the nurse manager within service contexts.

Palavras-chave: leadership; healthy environments; communication; teamwork; strategies

SURGERY FOR ADOLESCENTS: CHALLENGES AND NEW PERSPECTIVES

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Introduction: Severe paediatric obesity is a growing public health problem, associated with metabolic, psychosocial and functional comorbidities. The rise in its prevalence over recent decades reinforces the need for effective interventions. Although bariatric surgery is not the first-line treatment in paediatric patients, it has established itself as a safe and effective option for adolescents with morbid obesity, when carefully selected, reflecting advances in scientific evidence and clinical approaches.

Methods: A narrative review of the literature was conducted in the EBSCO, PubMed and Scopus databases, using the search terms "bariatric surgery", "childhood obesity" and "adolescent".

Results: There has been a shift in clinical thinking, with bariatric surgery now being considered a valid treatment option for adolescents with severe obesity, provided it is part of a multidisciplinary assessment that takes into account emotional maturity, family support and rigorous clinical criteria. The role of nursing is central to all stages of the process. In the preoperative phase, this includes clinical and psychosocial assessment, health education, emotional preparation and nutritional screening. In the perioperative phase, the focus is on haemodynamic and respiratory monitoring, prevention of complications, promotion of early mobilisation, and ensuring a safe and patient-centred environment. In the postoperative phase, it involves monitoring adherence to treatment, early detection of complications, psychosocial support, and promotion of health literacy.

Discussion: Bariatric surgery in adolescence has been shown to be an effective intervention when integrated into a structured, multidisciplinary, adolescent-centred care model. Early intervention can alter the course of the disease and reduce future comorbidities. Nurses play a decisive role in safety, education, follow-up and continuity of care, contributing to sustainable clinical and psychosocial outcomes.

Palavras-chave: bariatric surgery, childhood obesity, adolescent

DEVELOPMENT OF A MANAGEMENT FLOWCHART FOR PLACENTAL ABRUPTION IN AN OBSTETRIC EMERGENCY CONTEXT

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Introduction: Placental Abruption is a serious obstetric complication associated with high maternal and perinatal morbidity and mortality, requiring rapid, coordinated, and evidence-based management (Yinka Oyelese et al., 2024). This work aims to develop a standardized management flowchart that promotes timely decisionmaking, effective communication and maternal–fetal safety.

Methodology: A literature review was conducted using the EBSCO-Host, accessing the MEDLINE and CINAHL databases. The MeSH descriptors “Abruptio Placentae,” “Pregnancy Complications,” and “Cesarean Section” were used and combined in a Boolean search phrase with the connector “AND.” The research question was structured according to the PICO methodology, and four articles were analyzed after applying inclusion criteria. The analysis was complemented with guidelines from the Direção Geral de Saúde and international recommendations from the Royal College of Obstetricians and Gynaecologists (RCOG) and the World Health Organization.

Results: The analysis of the articles shows consistency in identifying risk factors: advanced maternal age, preeclampsia, smoking and complications in the current pregnancy (Chen et al., 2025). There is a higher risk of recurrence in women with a prior history of placental abruption, reinforcing the need for appropriate surveillance (Oyelese et al., 2024).

The clinical approach depends on the severity and maternal–fetal stability and may result in an emergency cesarean section. The literature identifies critical decision points, namely the activation of the multidisciplinary team and the determination of the timing of intervention (RCOG, 2011).

Discussion: Placental abruption has a sudden onset, unpredictable progression, and high maternal–fetal risk. The identified risk factors and the possibility of recurrence reinforce the need for a rapid, structured, and evidence-based clinical response. Therefore, the development of a management flowchart stands out as an important guiding tool for the multidisciplinary team in emergency settings.

The flowchart systematizes processes, facilitates decision-making, and highlights critical points, enabling the reorganization of health-care delivery (Plassa et al., 2018). It is a useful tool for training teams in emergency contexts, contributing to improved quality of care and better maternal-fetal outcomes.

Palavras-chave: Abruptio Placentae, Pregnancy Complications, Cesarean Section

CHALLENGES AND PRACTICES IN ROBOTIC GYNAECOLOGICAL SURGERY: THE IMPORTANCE OF PATIENT POSITIONING

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Introduction: The integration of robotic-assisted surgery in gynaecology has significantly transformed perioperative practice, introducing complex and evolving challenges for nursing teams in technologically advanced environments. In this context, patient positioning is essential to ensure procedural safety, effectiveness, and high-quality care. Prolonged and extreme positions, such as Trendelenburg and lithotomy, combined with immobilisation and the use of robotic arms, increase the risk of intraoperative and postoperative complications, including immediate and delayed adverse outcomes, requiring close surveillance, continuous assessment, and specialised perioperative nursing intervention.

Methods: A scoping review was conducted using EBSCO, PubMed, and RCAAP databases, complemented by official publications from the Directorate-General of Health (DGS), the World Health Organization, and clinical guidelines related to the Hugo RAS robotic system, focusing on patient positioning strategies in robotic gynaecological surgery and associated nursing responsibilities.

Results: Patient positioning is recognised as a structured, evidence-based nursing intervention that must be individually planned based on comprehensive risk assessment. Its appropriate implementation optimises surgical exposure and significantly reduces complications, including neuromuscular injuries, pressure injuries, facial oedema, and ventilatory and haemodynamic alterations. The role of support devices, continuous intraoperative monitoring, and effective multidisciplinary collaboration between surgeons, anaesthetists, and nursing teams is fundamental to patient safety and procedural success.

Discussion: Patient positioning extends beyond technical execution, representing an autonomous, critical, and specialised component of perioperative nursing practice. It requires competencies in ergonomics, biomechanics, clinical risk management, and patient safety, alongside effective clinical reasoning in complex environments. The standardisation of practices contributes to improved quality of care, enhanced patient safety, and reduction of preventable complications, reinforcing the evolving role of nursing in robotic surgical settings.

Palavras-chave: Gynecology, Patient Positioning, Perioperative Nursing, Surgical Procedures, Operative

MAINTAINING LACTATION AFTER PREGNANCY LOSS: INSTITUTIONAL PROTOCOLS OR WOMEN'S CHOICE?

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Introduction: Pregnancy loss is a traumatic event with significant physical, emotional, and social impacts on women. Among the physiological changes that may occur, lactation is particularly relevant, resulting from hormonal processes of the pregnancy–postpartum cycle. Even in the absence of the baby, the maternal body may initiate or maintain milk production, creating important clinical and emotional challenges for both women and healthcare professionals. Gaps in clinical practice, training, and consensus regarding lactation after loss raise important questions. The specialist nurse in maternal and obstetric health plays a key role in supporting women through evidence-based information, communication, and individualized care, particularly in informed decision-making.

Objective: To analyze scientific evidence on lactation after pregnancy loss, discussing institutional protocols and women's autonomy in decision-making, highlighting the role of the specialist nurse.

Methods: An integrative literature review was conducted using PubMed, CINAHL, Scopus, SciELO, ScienceDirect, and MEDLINE. Twelve studies published between 2015 and 2025 were included.

Results and Discussion: The literature suggests a dual dimension of lactation after pregnancy loss. Some studies emphasize the physical and emotional discomfort caused by the incongruence between the loss and continued lactation. Others indicate that maintaining lactation-through human milk donation or symbolic practices such as breast milk jewelry-may act as a coping mechanism, helping women attribute meaning to the experience and maintain a bond with their baby.

Conclusion: Institutional protocols should guide but not replace women's individual choices, ensuring comprehensive support in both grief and lactation decisions. Respect for autonomy, emotional needs, and sociocultural context is essential. The specialist nurse plays a crucial role in providing evidence-based information, emotional support, clinical follow-up, and support in decision-making. Women's autonomy should remain central, with decisions approached in an individualized, humanized, and evidence-based manner, promoting more sensitive and integrated care.

Palavras-chave: lactation, pregnancy loss, perinatal grief

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CULTURAL SAFETY IN MATERNITY CARE IN MIGRATORY CONTEXTS: CONTRIBUTIONS FROM PERIOPERATIVE NURSING

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Introduction: Maternal care in migratory contexts is central to equity, quality and safety, particularly when surgical obstetric complications occur. Emergency caesarean section, haemorrhage, infection or reintervention increase vulnerability and may intensify fear, anxiety and traumatic experiences. In migrant, refugee or culturally diverse women, these risks are compounded by language barriers, low health literacy, consent difficulties and institutional responses insufficiently adapted to diversity.

Methods: A narrative literature review was combined with a critical-reflective analysis of perioperative nursing practice. Evidence on migrant women's experiences in maternity care, intercultural communication, obstetric complications, emotional suffering and cultural safety was analysed.

Results: The maternal perioperative setting emerges as a sensitive space where vulnerabilities may be reinforced or mitigated. Urgency, pain, bodily exposure, technological dependence, power asymmetry and rapid decisions may compromise autonomy, privacy and participation. In migrant women, language barriers, limited knowledge of rights, absence of mediation and difficulty navigating services may transform communication failures into safety risks. Gender-related issues, including modesty, the gender of professionals and clinical paternalism, also influence care experience.

Discussion: The perioperative nurse has a decisive role in articulating surgical, emotional and cultural safety. Through continuous presence across the perioperative pathway, nurses can identify cultural discomfort, adapt communication, protect privacy, promote informed participation, manage pain and mediate gender-sensitive needs. However, culturally safe care cannot depend only on individual sensitivity. Institutional pathways for qualified interpretation, multilingual and visual resources, protocols, training and recognition of women's experiences as quality indicators are required. Innovation lies in transforming technical environments into spaces that are intelligible, inclusive and responsive to diversity.

Conclusion: Maternal perioperative care in migratory contexts requires an integrated approach to clinical, emotional, social and cultural vulnerability. Cultural safety is a relevant framework for perioperative nursing, enabling care that is technically safe, ethically grounded, humanised and culturally responsive

Palavras-chave: Cultural safety; Migrant; maternity; Perioperative nursing; Obstetric complications Informed consent

FACILITATED SUBCUTANEOUS IMMUNOGLOBULIN IN A PEDIATRIC PATIENT WITH DIFFICULT VENOUS ACCESS: A CASE REPORT

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Introduction: Intravenous immunoglobulin (IVIg) is widely used in pediatric patients requiring immunoglobulin replacement or immunomodulation. However, repeated venous access can be difficult and distressing. Facilitated subcutaneous immunoglobulin (fSCIg), using recombinant human hyaluronidase, enables the administration of larger volumes subcutaneously and may represent an effective alternative.

Case Report: We report the case of a pediatric patient requiring immunoglobulin therapy, with difficult peripheral venous access and no indication for a totally implantable central venous catheter. Multiple failed cannulation attempts led to significant distress, prompting the transition to fSCIg in a hospital setting.

Administration was performed in a controlled hospital environment. Nursing interventions included patient and family education, drug preparation, selection of infusion sites, and monitoring during and after administration. Aseptic technique and comfort measures were prioritized.

Discussion: fSCIg has been well tolerated, with only mild local reactions and no systemic adverse events. The need for repeated venous access was eliminated, reducing distress and improving the treatment experience. The patient and family reported high satisfaction.

fSCIg represents a safe and effective alternative in pediatric patients with difficult venous access. Nursing plays a key role in education, administration, and monitoring, contributing to improved patient comfort and adherence. At this stage, the team aims to strengthen confidence and promote patient and family satisfaction and autonomy in decision-making regarding the future treatment regimen.

Palavras-chave: Facilitated subcutaneous immunoglobulin, Pediatrics, Difficult venous access, Nursing care, Case report

FROM SCREEN TO CRADLE, NEW REALITIES IN CHILDBIRTH ANTENATAL CLASSES

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Introduction: Antenatal education is one way to increase knowledge about pregnancy, childbirth and childcare, and improve quality results. We developed a project, telework based, childbirth and parenting preparation in antenatal classes.

Methods: This project was conducted in Centro Materno Infantil do Norte, between May 2024 and November 2026. Every program was composed by 4 synchronous online classes, through Microsoft Teams. 447 pregnant women participated in the project, 57% were first gesta, 23% primipara and 95% with singleton.

Results: Within this program 87% of the pregnant had childbirth in the same hospital, where the project was developed. In the vaginal deliveries supported by midwives 34% had no alteration in the perineum, 35% had perineal lacerations and 12% had episiotomy. The medium birth weight was 3098g, with medium apgar at first minute of 9, and 10 at the 5th and 10th minute. The exclusive breastfeeding rate at mother discharge was 79%. The participation of significant other on the project (declared) was of 16%. Online antenatal classes offer a significant carbon footprint reduction by eliminating the need for commuting, estimated between 16 and 39 tons of CO₂, in this project according to the transportation (public transport or private car). The families reported a 4.69/5 satisfaction rate regarding the overall quality of the service, and with 99% stating that the program met their expectations.

Discussion: This new approach to prenatal education opens up care to community participation in its own space, without the need for travel, thus adapting to the new experiences of the modern world and can still empower women.

Palavras-chave: Antenatal classes; Childbirth

NURSING INTERVENTION IN PEDIATRIC ANOREXIA IN A SPECIALIZED PEDIATRIC CARE SETTING: CLINICAL MONITORING, THERAPEUTIC RELATIONSHIP, AND FAMILY EMPOWERMENT

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Introduction: Pediatric anorexia, within the spectrum of anorexia nervosa, is a severe psychiatric disorder with multisystem impact and significant morbidity risk when not identified early. Although more prevalent in adolescence, there is a growing incidence in younger pediatric populations, often with atypical presentations that hinder clinical recognition. In specialized pediatric care settings, nurses play a central role from the first point of contact.

Materials and Methods: A narrative literature review was conducted, based on international guidelines and current scientific evidence, integrated with clinical practice in specialized pediatric care. The nurse's role in initial assessment, clinical monitoring, risk management, and implementation of structured therapeutic interventions was analyzed.

Results: Diagnosis in pediatric patients relies on the assessment of growth trajectories, with deviations from weight-for-height curves representing an early warning sign. Clinical manifestations are often atypical, including food avoidance, selectivity, and anxiety related to eating. Nurses play a key role in continuous and systematic clinical monitoring, integrating physical, behavioral, and emotional data, enabling early detection of subtle changes and effective risk management. They are also essential in surveillance and communication within the multidisciplinary team. The therapeutic relationship, grounded in empathetic, consistent, and non-judgmental communication, is crucial for treatment adherence. Interventions such as assisted meals, therapeutic education, and child and family empowerment are fundamental to promoting health literacy, clinical stability, and continuity of care.

Conclusion: Nursing intervention in specialized pediatric settings is pivotal for early detection of clinical deterioration and for guiding clinical decision-making. Continuous nursing care allows anticipation of complications and promotes improved health outcomes, being decisive for treatment adherence and the protection of child development.

Palavras-chave: Pediatric anorexia, Nursing intervention, Clinical monitoring, Therapeutic relationship, Child and family empowerment

WHICH IS THE MOST APPROPRIATE THERMOMETRY METHOD FOR ASSESSING BODY TEMPERATURE IN INFANTS UP TO 1 YEAR OF AGE?

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Introduction: Body temperature plays a central role in the early identification of significant pathological processes (Alayed et al., 2022). The choice of measurement method must ensure accuracy, reliability, and suitability to the clinical context.

Methods: Literature review guided by the central question: "What is the suitability of rectal and axillary methods for measuring body temperature in newborns/infants in the context of clinical practice?". The bibliographic search was conducted on the EBSCOHost Web content aggregator and in the Web of Science and Scopus databases. Original studies conducted on newborns/infants that directly compared rectal and axillary body temperature measurement, evaluating parameters such as accuracy, reliability, and agreement, were included. Studies that analyzed only one of the methods without direct comparison and other types of publications that did not correspond to original scientific studies were excluded.

Results: The evidence suggests that axillary thermometry can be safely used for screening and monitoring temperature in clinically stable newborns and infants. However, rectal thermometry remains the reference method when greater precision is required, particularly in the context of admission to the neonatal unit or in the presence of clinical instability.

Discussion: Rectal thermometry continues to be considered the reference method for assessing core temperature in newborns, showing greater accuracy and better ability to detect hyperthermia and hypothermia, especially in premature and clinically unstable neonates (Halabi et al., 2024). Axillary thermometry proves to be a safe, simple, and widely used method. In term and clinically stable newborns, several studies demonstrate good correlation with rectal temperature and reduced mean differences (Nadkarni et al., 2021). Friedrich et al. (2013) demonstrated the use of axillary temperature measurement in term newborns as a safe and accurate alternative to rectal temperature, minimizing discomfort and the risk of potential perforation. Rectal thermometry is considered the gold standard for measuring temperature in newborns/infants. Axillary thermometry is an accurate and reliable method for temperature screening in healthy neonates (Nadkarni et al., 2021).

Palavras-chave: Axilla; Body Temperature; Newborn

PROMOTING EMOTIONAL INTELLIGENCE AND SELF-CARE IN PERIOPERATIVE NURSING: A CONTINUOUS IMPROVEMENT PROJECT

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Introduction: Perioperative nursing is practiced in settings characterized by high technical and scientific complexity and emotional demands, which are frequently associated with occupational stress, emotional fatigue, and burnout, impacting both the well-being of healthcare professionals and the quality and safety of care. National evidence indicates a prevalence of burnout in 61% of operating room nurses, associated with sociodemographic factors and workload, reinforcing the need for a structured intervention. In this context of evidence and innovation in healthcare, the promotion of emotional intelligence (EI) and self-care is established as an integral component of excellence in perioperative nursing practice, being central to adaptation and resilience in demanding contexts.

Objective: To develop, implement, and evaluate a structured program to promote EI and self-care among perioperative nurses, integrated into a continuous improvement model.

Methods: Project based on the PDCA (Plan-Do-Check-Act) cycle. In the Plan phase, high levels of emotional exhaustion were identified, and objectives aligned with EI models were defined. In the Do phase, multimodal interventions will be implemented: training in EI, mindfulness, stress management, peer reflection, self-care plans, and organizational strategies centered on active listening and emotional support. In the Check phase, pre- and post-intervention assessments will be conducted using validated instruments for burnout, resilience, and well-being. In the Act phase, the results will guide the consolidation and adjustment of strategies.

Expected results: A reduction in emotional exhaustion and the risk of burnout, an increase in emotional self-regulation, a strengthening of resilience, and an improvement in team cohesion are anticipated, with a positive impact on the quality and safety of care.

Conclusion: Grounded in evidence and practice-oriented, this project translates knowledge into innovative intervention, aligning with the "from evidence to innovation" paradigm. It constitutes a structured, replicable, and strategic approach to team sustainability and clinical excellence.

Palavras-chave: Emotional Intelligence, Self-Care, Perioperative Nursing, Burnout, Continuous Improvement Project

ADMITTING SAFELY, CARING WITH HUMANITY

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Admitting Safely, Caring with Humanity: Strategic Placement of Women in Inpatient Care — Impact on Patient Safety, Humanisation of Care and Nursing Advocacy. Introduction: Hospital admission represents a moment of particular vulnerability for women, in which the decision about where and how to admit is not a logistical procedure it is a nursing intervention with a direct impact on safety, comfort and emotional well-being. In the Women's Area Inpatient Unit of the Centro Materno Infantil do Norte, the coexistence of patients at end of life, experiencing perinatal bereavement, with dementia, in the context of domestic violence, infectious risk or requiring intensified monitoring presented the team with a concrete challenge: to ensure, for each woman, the most appropriate therapeutic environment suited to her individuality, from the moment of admission.

Methods: An integrative literature review was conducted across the PubMed, Scopus, SciELO and LILACS databases, using the descriptors patient safety, nursing assessment, hospital admission, therapeutic environment, person-centered care and nursing-sensitive outcomes, prioritising publications from 2010 to 2026. Inclusion criteria were established for studies addressing patient safety, care organisation, humanisation of care and nursing advocacy, supplemented by guidelines from the Directorate-General of Health and the World Health Organization.

Results: The strategic placement of women, based on systematic nursing assessment, produces an impact across three interdependent dimensions of care quality. In patient safety: it contributes to the prevention of adverse events, reduction of falls, healthcare-associated infections and pressure injuries. In the humanisation of care: it promotes comfort, privacy, well-being and patient satisfaction, adapting the therapeutic environment to the individuality of each clinical situation. In nursing advocacy: it ensures that the rights, preferences and autonomy of each woman are respected and upheld, with particular attention to situations of greater vulnerability.

Discussion and Conclusion: The findings of this integrative review demonstrate that strategic placement, grounded in systematic nursing assessment, is an intervention with demonstrable clinical, organisational and ethical impact across three dimensions: patient safety, humanisation of care and nursing advocacy. Standardised ICNP terminology was employed, as it confers rigour, visibility and comparability to nursing practice, enabling an explicit relationship to be established between the interventions implemented and the outcomes achieved (International Council of Nurses, 2020; Moorhead et al., 2018).

Admitting safely and caring with humanity is a daily commitment, renewed at each admission, by every nurse who decides with rigour, with science and with heart.

The right place, at the right time.

Palavras-chave: patient safety, nursing assessment, hospital admission,

SKIN-TO-SKIN CONTACT IN THE OPERATING ROOM: A PROPOSED QUALITY IMPROVEMENT PROTOCOL FOR CESAREAN BIRTHS

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Introduction: The postpartum period is a critical phase for maternal and neonatal adaptation, where early interventions significantly influence health outcomes. Immediate skin-to-skin contact (SSC) is an evidence-based practice associated with improved neonatal physiological stability, breastfeeding success, and early mother-infant bonding.

Methodology: An integrative literature review was conducted using the PICO strategy: term newborns delivered by cesarean section (P), SSC in the operating room (I), delayed or no SSC (C), bonding, breastfeeding success and thermal stability (O).

The search was conducted in CINAHL, MEDLINE and MEDICLATINA via EBSCOhost, using MeSH terms and Boolean operators. Articles published within the last five years were included and complemented by guidelines from the Direção Geral de Saúde, Sociedade Portuguesa de Neonatologia and a Cochrane article.

Results: Evidence shows that immediate, continuous and supervised SSC improves neonatal thermal, metabolic and cardiorespiratory stability, increases exclusive breastfeeding rates and enhances mother-infant bonding.

The protocol defines strict eligibility criteria, including maternal and neonatal clinical stability and incorporates continuous monitoring using the RAPP assessment (Respiration, Activity, Perfusion, Position) to prevent sudden unexpected postnatal collapse.

It also outlines SSC initiation in the operating room, maintenance for at least 60 minutes, early breastfeeding support, and continuity during postoperative recovery, with active involvement of the companion. Organizational needs such as staff training, space adaptation, and monitoring tools are identified.

Discussion: Implementing SSC during cesarean section is a safe, evidence-based intervention when supported by structured protocols and adequate monitoring. Although potential risks exist, they can be minimized through systematic surveillance and team training.

This project provides a multidisciplinary approach to integrating SSC into surgical birth settings, promoting humanized care and improved maternal and neonatal outcomes. Although not yet implemented, its adoption is a key objective of the working group, with the aim of enabling future evaluation of its impact on clinical outcomes and quality of care indicators.

Palavras-chave: Skin-to-Skin and Operating Room and Cesarean Births

THE ROLE OF THE SPECIALIST NURSE IN CHILD HEALTH AND PEDIATRIC NURSING IN THE PROCESS OF BREAKING BAD NEWS

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Introduction: Breaking bad news in pediatrics is a complex, ongoing process that extends beyond the moment when the information is delivered, encompassing phases of preparation, communication, and follow-up. Because nurses are the professionals who maintain the closest proximity to the child and family throughout hospitalization, they play a central role in this process. However, institutional, training-related, and emotional barriers often compromise the quality of therapeutic communication. This study aimed to map the scientific evidence on the role of the Specialist Nurse in Child Health and Pediatric Nursing (EESIP) in the process of Breaking Bad News (BBN) and identify gaps in competencies related to communicating bad news in the pediatric setting.

Methods: A narrative literature review was conducted using the EBSCO databases (CINAHL, MEDLINE) and Google Scholar, covering publications from 2013 to 2025 in Portuguese, English, and Spanish. The descriptors used were “breaking bad news” OR “bad news communication” AND “nursing” AND “pediatric” AND “parents”. Original and review articles addressing the nurse’s role in BBN, with a focus on the pediatric context, were included; duplicates, editorials, and studies unrelated to nursing were excluded. A total of 14 articles were selected for analysis. Relevant reference works on the topic were also consulted.

Results: According to the studies analyzed, between 22% and 76% of nurses have independently communicated bad news, 40% to 55.5% reported direct involvement in providing emotional support to families, and 81% collaborate with physicians in sharing clinical information. However, despite this active participation, 75.2% reported having received no specific training in BBN, and only 16.2% demonstrated a good level of knowledge in this area.

Discussion: Despite the integral role the EESIP plays in BBN, the lack of preparation, combined with institutional and organizational barriers, generates uncertainty and compromises effective therapeutic communication. Since this is a core competency of specialized practice, it is essential to invest in continuous training and in the recognition of the nurse’s role, thereby promoting more humanized care for the child and family.

Palavras-chave: Breaking Bad News, Paediatric Nursing, Therapeutic Communication, Specialist Nurse

THE APPROACH TO WOMEN WITH ENDOMETRIOSIS – THE IMPORTANCE OF THE NURSING ROLE

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Background: Endometriosis is characterized by the presence of endometrial tissue outside the uterine cavity, causing chronic inflammation. It affects 10% of women of reproductive age and is associated with 30–50% of female infertility cases. Chronic pelvic pain is the most frequent symptom, although dyspareunia, dysmenorrhea, dysuria, and dyschezia may also occur, significantly affecting quality of life.

In recent years, the institution has received women with endometriosis from different geographic regions and at different disease stages. Delayed diagnosis remains common, often due to pelvic pain being underestimated, making symptom control more difficult as the disease progresses.

This project aims to establish a multidisciplinary care pathway as a reference for diagnosis, treatment, support, and individualized follow-up of women with endometriosis, improving quality of care, access, and patient satisfaction within the Endometriosis Unit. Nursing plays a central role in care coordination and management.

Aims:

- Present the project and consolidate CMIN as a reference center in endometriosis management;
- Highlight the importance of nursing in care coordination;
- Describe implementation strategies:
- Creation of the Endometriosis Nursing Consultation (CENF);
- Referral to Psychology, Sexual Medicine, Nutrition, and Physiotherapy;
- Ensure individualized follow-up throughout the care pathway;
- Promote collaboration with other centers and primary health care services;
- Identify constraints, present 2025 results, and define future strategies.

Methodology:

- Creation of a Working Group;
- Project presentation to involved services;
- Definition of indicators;
- Clinical staff training;
- Updating support documents;
- Implementation of the Endometriosis Nursing Consultation;
- Integration into multidisciplinary meetings;
- Patient referral and selection.

Conclusion: Our institution recognizes the importance of a multidisciplinary approach to ensure continuity of care, symptom control, and improved quality of life for women with endometriosis. Recent data demonstrate that nursing interventions positively impact patient safety, symptom management, and satisfaction. Continued development of this project will strengthen responsibilities, strategies, and quality of care.

Palavras-chave: Endometriosis, Gynecology

SURGICAL RELEVANCE OF THE CO₂ INSUFFLATOR/ ASPIRATOR U600 FOR THE PATIENT

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Introduction: Laparoscopic surgery has significantly transformed modern surgical practice by enabling minimally invasive procedures associated with reduced morbidity and accelerated postoperative recovery. The establishment of pneumoperitoneum through carbon dioxide (CO₂) insufflation constitutes a fundamental step in these procedures. The CO₂ insufflator/aspirator U600 plays a pivotal role in maintaining optimal and safe operative conditions, thereby exerting a direct influence on patient outcomes and overall perioperative well-being.

Objectives:

- To evaluate the clinical relevance of the CO₂ insufflator/aspirator U600 for the patient
- To identify the principal clinical benefits associated with its use
- To assess the physiological effects and potential risks related to pneumoperitoneum
- To examine the contribution of this device to overall surgical safety

Methodology: A descriptive review of the scientific and technical literature was conducted, focusing on the use of CO₂ insufflation systems in laparoscopic surgery. Emphasis was placed on patient-centered outcomes, including clinical benefits, associated risks, and underlying physiological mechanisms.

Discussion: The use of a CO₂ insufflator facilitates the creation of an adequate operative workspace, enabling enhanced surgical precision and minimizing tissue trauma. From the patient's perspective, this is associated with reduced postoperative pain, a lower incidence of surgical site infection, and shorter recovery times when compared to conventional open surgery.

Carbon dioxide is the preferred insufflation gas due to its high solubility and rapid systemic elimination, which significantly reduces the risk of gas embolism. Furthermore, precise regulation of intra-abdominal pressure and insufflation flow contributes to improved hemodynamic stability and enhanced intraoperative safety. The warming of insufflated gas has also been associated with a reduction in perioperative hypothermia and postoperative discomfort.

The integrated aspiration function of the U600 enables effective evacuation of surgical smoke, thereby improving intraoperative visibility and limiting exposure to potentially harmful particulate matter. This indirectly benefits the patient by optimizing surgical performance and procedural efficiency.

Nevertheless, the induction of pneumoperitoneum is associated with several physiological alterations, including increased intra-abdominal pressure, reduced venous return, and the potential development of hypercapnia. These changes necessitate vigilant anesthetic monitoring. Although uncommon, complications such as subcutaneous emphysema and referred shoulder pain may occur.

Conclusion: The CO₂ insufflator/aspirator U600 represents a critical component in laparoscopic surgery, with a substantial impact on patient safety and clinical outcomes. Its use supports minimally invasive techniques that enhance surgical precision and promote faster recovery. However, its safe application requires careful monitoring and control to mitigate potential adverse physiological effects.

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Palavras-chave: Laparoscopic surgery; CO₂ insufflator; Pneumoperitoneum; Patient safety; Minimally invasive surgery; Surgical smoke

PEDIATRIC CIRCUMCISION: THE ROLE OF PENILE BLOCK IN AMBULATORY SURGERY

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Introduction: Phimosis is one of the most common urological conditions in pediatric patients and may require surgical treatment when pathological. Circumcision, frequently performed in an outpatient setting, is associated with significant nociceptive stimulus, justifying the need for effective analgesic strategies.

Objective: To analyze the role of penile block as an analgesic technique in pediatric circumcision in the ambulatory setting.

Methods: Literature review including randomized controlled trials, systematic reviews, and observational studies on analgesic techniques in pediatric circumcision.

Results: The dorsal penile nerve block, often combined with a ring block, provides effective analgesia by acting directly on the innervation of the surgical area. It has demonstrated:

- Significant reduction in intraoperative and postoperative pain
- Decreased opioid consumption and associated adverse effects
- Faster recovery and shorter stay in the recovery unit
- Smoother emergence and reduced postoperative agitation

Compared to caudal block, it offers advantages such as greater technical simplicity, lower risk of urinary retention, and immediate mobilization.

Conclusion: Although it is a short-duration procedure, pediatric circumcision is associated with significant pain. Penile block proves to be a safe, effective, and targeted technique, representing a preferred option for optimizing analgesia in pediatric ambulatory surgery.

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Palavras-chave: Pediatric circumcision; penile block; locoregional analgesia; ambulatory surgery; postoperative pain

INFLUENCE OF AIR QUALITY ON THE PREVENTION OF SURGICAL SITE INFECTIONS: EVIDENCE AND PRACTICES

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Introduction: Surgical site infection (SSI) remains one of the most frequent healthcare-associated complications, with a significant impact on morbidity, mortality, length of hospital stays, and healthcare costs. Despite advances in surgical techniques and preventive protocols, its incidence remains relevant. Among modifiable perioperative factors, operating room air quality plays a critical role. The presence of airborne particles and microorganisms may promote surgical wound contamination, particularly in prolonged procedures or those involving implants, and is influenced by both ventilation systems and behavioral factors.

Methods: A literature review was conducted using EBSCO, SciELO, PubMed, and RCAAP databases, complemented by documents from the Directorate-General of Health and the World Health Organization. The aim was to analyze the influence of air quality on SSI prevention and to identify modifiable factors related to patient safety.

Results: Consistent evidence demonstrates an association between higher airborne microbial load and increased SSI risk. Effective ventilation systems, including HEPA filtration and adequate air exchange, contribute to reducing contamination. The effectiveness of laminar air-flow remains controversial, with heterogeneous findings, particularly in orthopedic surgery. Behavioral factors, such as the number of staff, movement within the room, and door opening, negatively affect air quality and system performance. Multimodal strategies integrating environmental and behavioral interventions show greater effectiveness.

Discussion: Operating room air quality is a critical factor in SSI prevention. The integration of appropriate technology, team behaviour, and efficient operating room management is essential to minimize environmental contamination and promote patient safety.

Palavras-chave: Surgical Wound Infection, Air Quality, Operating Rooms, Infection Control, Patient Safety.

THE PERIOPERATIVE NURSE IN ENDOSCOPIC CRANIOSYNOSTOSIS SURGERY – SAFETY, TECHNIQUE, AND HUMANIZATION OF CARE

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Introduction: Since 1996, nurses have played a fundamental role in endoscopic surgery for craniosynostosis. They are responsible for coordinating care, educating parents, monitoring the pre- and post-operative periods, collecting data, and supporting research. Clear and early communication with parents reduces anxiety and facilitates informed decision-making.

Objectives: To demonstrate the role of the perioperative nurse in endoscopic craniosynostosis surgery, to develop knowledge on the subject, and to adopt strategies to minimize noise.

Methodology: Literature review using reference databases.

Diagnosis: Craniosynostosis affects 1 in every 2,500 newborns. It is often noticed by parents soon after birth (cranial asymmetry, misaligned eyes, deviated nose). Early diagnosis is essential, as endoscopic surgery achieves better results when performed before 3–6 months of age, followed by the use of a molding helmet. Delays in diagnosis may limit treatment options and increase parental distress.

Endoscopic Procedure: The surgery removes the bone from the fused suture, allowing normal brain growth.

In infants, the bone regenerates quickly.

After a few days, the baby wears a custom-made helmet for 6–12 months to shape the skull.

Success depends on strict adherence to helmet use and close follow-up.

Conclusion: The diagnosis and treatment of craniosynostosis are highly challenging moments for families. The nurse is a key figure in clinical and emotional support, parental education, and coordination of care. Follow-up until school age is recommended due to the possibility of developmental changes. Many parents, after going through this process, become advocates for the minimally invasive technique and for the importance of early diagnosis.

Palavras-chave: craniosynostosis surgery and nurse and Operating Room and Cesarean Births

SUBCUTANEOUS INJECTION OF DOUBLE-DISTILLED WATER FOR THE RELIEF OF LOWER BACK PAIN DURING LABOUR: A NARRATIVE REVIEW

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Introduction: Pain during labour is a complex and multidimensional phenomenon influenced by physiological, psychological, and sociocultural factors. Lower back pain is a common complaint, often associated with posterior occipital fetal position or lumbosacral compression, and may persist between contractions, negatively affecting the birth experience and maternal satisfaction. Non-pharmacological strategies have been explored to improve maternal comfort, including subcutaneous sterile water injections.

Methods: A narrative literature review was conducted using PubMed and CINAHL via EBSCO. Studies in Portuguese, English, or Spanish with full-text access were included if they addressed subcutaneous double-distilled water injections in the lumbosacral region in women in labour with cephalic presentation. Studies not focused on this intervention were excluded. No temporal or geographical limits were applied. Of 33 identified articles, 12 met the inclusion criteria and were analysed.

Results: Findings suggest that subcutaneous double-distilled water injections may reduce lower back pain during labour. The analgesic effect typically begins within minutes and lasts one to two hours. Women often report a brief burning sensation at the injection site, generally well tolerated. The intervention does not appear to compromise maternal mobility or fetal well-being and may complement other pharmacological and nonpharmacological pain relief methods.

Discussion: This technique appears to be a simple, low-cost, and potentially effective non-pharmacological strategy. Its effect is commonly explained by the gate control theory of pain. However, heterogeneity in protocols and small sample sizes may limit comparability. Further robust, standardised, and larger-scale studies are needed to strengthen the evidence and support clinical implementation.

Palavras-chave: Labour Pain, lower back pain, sterile water, pain relief, subcutaneous injection

