

Dry Eye Disease Management in Portugal: Online Survey Results

Abordagem e Tratamento da Doença de Olho Seco em Portugal: Resultados de um Questionário Online

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ABSTRACT

INTRODUCTION: With growing prevalence, reduced quality of life, significant socio-economic burden and a definite impact in cataract and laser vision correction surgeries, dry eye disease (DED) is currently a hot topic in ophthalmology. In recent years, several guidelines have been carried out to standardize the diagnosis and improve treatment approach. We intend to characterize current practices in Portugal, identify opportunities for improvement and delineate strategies to address them.

MATERIAL AND METHODS: Cross-sectional online survey designed to assess the diagnostic approach and treatment of DED and made available to ophthalmologists across the country. The survey included 5 questions on ophthalmological profile of participants, 4 questions on DED diagnosis and 3 questions on DED treatment. Statistical analysis was made using SPSS version 26.

RESULTS AND DISCUSSION: One hundred twenty two ophthalmologists answered the survey (about 10% of practitioners in Portugal). A percentage of 48% observe between 20-40 patients with DED per month. A total of 67% always examine ocular surface of laser vision correction candidates, whereas only 30% always do it for cataract surgery patients. The most frequently identified DED symptom is foreign body sensation. The most commonly used diagnostic methods are fluorescein staining and tear break up time. Regarding treatment modalities, almost 50% of participants never used lacrimal plugs and very few recommended contact lenses or autologous serum. Mild DED treatment is considered to be very effective by 80% of ophthalmologists, while in severe DED by only 0.01%. 36% believe available treatment options are ineffective in severe DED.

CONCLUSION: DED represents a high volume of patients seen in ophthalmology clinics. Our results mimic others in Europe and the United States. Overall, diagnosis and treatment practice patterns are in agreement with the current recommendations. However, there is still room for improvement. All patient prior surgery should be examined for DED, symptoms should be considered more as part of diagnosis and follow-up, and some easily available treatment options should be considered more often. Our findings also highlight the concern with treatment in severe DED, in which more effective therapies are needed.

KEYWORDS: Dry Eye Syndromes/diagnosis; Dry Eye Syndromes/therapy; Ophthalmologists; Portugal; Surveys and Questionnaires.

RESUMO

INTRODUÇÃO: A doença do olho seco apresenta uma prevalência crescente e impacto socioeconómico significativo, resultando em diminuição de qualidade de vida e com repercussões demonstradas em cirurgia de catarata e refrativa a laser. Nos últimos anos, várias *guidelines* foram realizadas para padronizar a abordagem diagnóstica e terapêutica. Pretendemos com este estudo caracterizar as práticas atuais em Portugal e identificar oportunidades de melhoria.

MATERIAL E MÉTODOS: Estudo transversal com recurso a questionário *online*, elaborado para avaliar a abordagem diagnóstica e tratamento do olho seco por oftalmologistas do setor público e privado em Portugal. O questionário incluía 5 perguntas sobre o perfil dos participantes, 4 perguntas sobre o diagnóstico e 3 sobre o tratamento da doença do olho seco. A análise estatística foi realizada com recurso a versão 26 do SPSS.

RESULTADOS E DISCUSSÃO: Um total de 122 oftalmologistas responderam ao questionário. Dos inquiridos, 48% observa entre 20 e 40 doentes com olho seco por mês. Avaliam sempre a superfície ocular em candidatos a cirurgia refrativa a laser 67%, enquanto apenas 30% realizam essa avaliação na cirurgia de catarata. O sintoma de olho seco mais frequentemente identificado é a sensação de corpo estranho. Os métodos diagnósticos complementares mais utilizados são a coloração com fluoresceína e o TBUT. Quase 50% nunca utilizou *plugs* lacrimais e um menor número utilizou lentes de contato e soro autólogo. A maioria dos oftalmologistas (80%) considera a terapêutica para olho seco ligeiro muito eficaz. Por outro lado, apenas 0,01% considera a terapêutica muito eficaz no olho seco grave e 36% afirma que a mesma é ineficaz.

CONCLUSÃO: O olho seco afeta um grande número de doentes observados em consulta de oftalmologia. Os nossos resultados são semelhantes a outros estudos na Europa e Estado Unidos e, em geral, estão de acordo com as recomendações atuais. No entanto, ainda há a necessidade de melhorar. Todos os pacientes antes da cirurgia devem ser avaliados para olho seco e algumas opções de tratamento devem ser consideradas mais frequentemente (por exemplo, *plugs* lacrimais). Destaca-se também a dificuldade no tratamento de doença grave, sugerindo que terapias mais eficazes são necessárias.

PALAVRAS-CHAVE: Inquéritos e Questionários; Oftalmologistas; Portugal; Síndromes do Olho Seco/diagnóstico; Síndromes do Olho Seco/tratamento.

INTRODUCTION

Dry eye disease (DED) is defined as a multifactorial pathology of the ocular surface resulting from loss of tear film homeostasis, accompanied by ocular symptoms, in which tear film instability, hyperosmolarity, inflammation of the ocular surface and neurosensory changes have an etiological role.¹ With an estimated prevalence of symptoms between 5% to 50% and a 10-year incidence of 21.6% around the world, this disease represents about 1/3 of patients who seek an ophthalmologist.²⁻⁴

Studies show that without diagnosis and adequate treatment, dry eye disease has a great deleterious impact on patients' quality of life. According to Buchholz P *et al*, patients with severe DED have quality of life scores similar to patients with angina pectoris.⁵

In addition, from the surgeons' point of view, dry eye disease can worsen after cataract and laser vision correction (LVC) surgery but also negatively impact their outcomes.³

The presence of symptoms without documented signs, asymptomatic patients with signs, the multifactorial aetiology

and limitations on accessibility of approved therapies, are some factors that hinder the approach and treatment of this disease.⁶

Starting with diagnosis, there is no gold standard.⁷ The subjectivity of the patient's complaints may contribute to this.⁸ In the latest consensus of the International Dry Eye Workshop in 2017 (DEWS II), a group of about 150 experts in the field defined that the diagnosis of DED should include both the assessment of patient's symptoms (using specific questionnaires such as DEQ-5 or OSDI) and ocular surface homeostasis markers (like tear breakup time (TBUT), tear osmolarity and observation of the ocular surface after instillation of vital dyes). The presence of both is required for definitive diagnosis (DEQ 5 > 5 or OSDI > 12 and TBUT less than 10 seconds, presence of ocular staining or tear osmolarity above 312 mOsm or inter eye osmolarity difference of 8 mOsm).⁷

Regarding DED treatment, the main objective is to restore homeostasis of ocular surface and tear film, breaking the vicious circle of the disease. Most therapies aimed to maintain lubrication of the ocular surface, while more re-

cent approaches focus on suppressing inflammation and stimulating tear production.⁹ Guidelines, such as DEWS II and the Dry Eye Syndrome Preferred Practice Pattern from the American Academy of Ophthalmology, present treatment algorithms that should be adjusted according to the patient, his symptoms, type and severity of dry eye.^{10,11}

With this study, we intend to describe current practices in the approach and treatment of this disease by ophthalmologists in Portugal and identify potential targets for improvement.

MATERIAL AND METHODS

Cross-sectional study using an online questionnaire addressed to ophthalmologists working in Portugal. Responses were collected between 1st and 31st August 2020.

The questionnaire consisted of 12 questions, divided into 2 parts (Appendix 1). The first part is focused on the approach and treatment of DED. In this section, questions were asked about the profile of evaluated patients, risk factors and symptoms most frequently identified, diagnostic tests used, prescribed therapies and objectives of treatment. The perception on therapeutic success for patients with DED according to disease severity was also investigated. The answers to these questions, except for prescribed therapies, were given according to a Likert scale (from 1 to 3), with greater values meaning increasing order of importance or frequency.

The second section analysed the demographic profile of the ophthalmologists involved in the study, such as gender, number of years in practice, subspecialty, and work region.

Statistical analysis was performed using SPSS version 26. Descriptive statistics was used to determine frequency and mean of the responses given. The Mann-Whitney non-parametric test was used to assess differences in responses between cornea and refractive surgery specialists and ophthalmologists from other subspecialties. A *p* value of 0.05 or less was considered to denote statistical significance throughout the study.

RESULTS

PARTICIPANTS' DEMOGRAPHICS

One hundred twenty two ophthalmologists answered the survey, representing about 10% of ophthalmologists working in Portugal. Sixty two (50.8%) were male and 60 (49.2%) female.

All regions of Continental Portugal and Madeira were represented, with a greater number of responses in the South (46.7%), followed by the North (29.5%), Centre (21.3%) and Madeira (2.5%).

The most represented subspecialties in our study were cornea and refractive surgery (22.1%), medical retina (22.1%) and surgical retina (16.4%).

Regarding years of practice, 69.9% of ophthalmologist were specialists, 22.1% of whom have worked for 1-10

years, 23.8% for 11-20 years, 13.1% for 20-30 years and 9.8% for more than 30 years. The remaining 31.1% of participants included ophthalmology residents.

A percentage of 26.1% of the ophthalmologists observe less than 20 patients with dry eye per month, 48.4% between 20 to 40 patients, 14.8% between 40 to 60 and 10.7% more than 60.

PATIENTS' SELECTION

A percentage of 50% of professionals answered that they rarely evaluate asymptomatic patients for DED, with a statistically significant difference ($p=0.02$) between cornea and refractive surgery specialists and other specialists, with a mean response of 1.88 and 1.53, respectively. Regarding symptomatic patients, 88% of respondents always evaluate these patients.

About 2/3 (67%) always evaluate LVC surgery candidates. Regarding cataract surgery candidates, only 30% of ophthalmologist systematically do it (Fig. 1). There was no statistically significant difference between corneal and refractive surgery specialists and other specialists' responses.

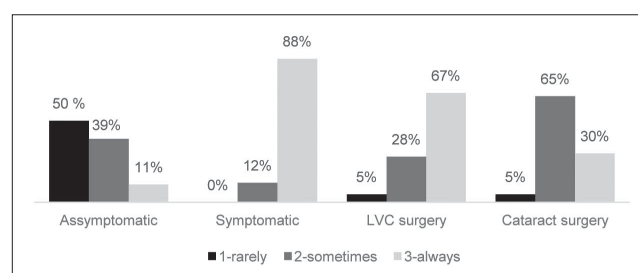


Figure 1. Patients selection for DED evaluation

RISK FACTORS

The most frequently identified risk factors in the pathogenesis of DED were environmental factors ($\bar{x}=2.49$), Meibomius gland dysfunction (MGD) ($\bar{x}=2.43$) and contact lenses wear ($\bar{x}=2.29$). There was no difference in responses between cornea and refractive surgery specialists and other specialists.

REPORTED SYMPTOMS

The most frequently reported symptoms identified overall were foreign body sensation, epiphora and itching (Fig. 2). When responses of corneal and refractive surgery specialists were analysed separately, the most frequently reported symptoms were foreign body sensation ($\bar{x}=2.77$), contact lenses intolerance ($\bar{x}= 2.19$) and blurred vision ($\bar{x}= 2.15$) ($p < 0.05$).

DIAGNOSTIC EVALUATION

Regarding diagnostic tests, the most frequently used were fluorescein staining ($\bar{x}=2.76$) followed by TBUT ($\bar{x}=2.73$) and Schirmer test ($\bar{x}=1.92$). DED questionnaires

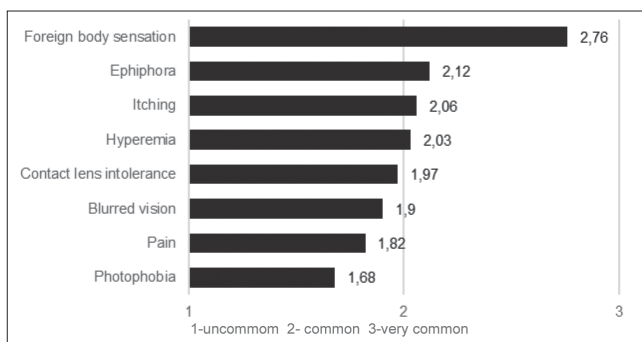


Figure 2. DED symptoms most commonly identified

(\bar{x} =1.20), lissamine green staining (\bar{x} =1.20) or tear osmolarity (\bar{x} =1.07) were rarely used (Fig. 3). There was no difference in responses between Cornea and Refractive Surgery specialists and other specialists.

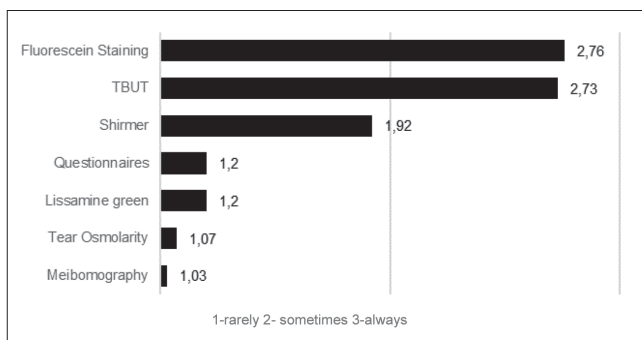


Figure 3. DED diagnostic tests used in clinical practice

TREATMENT GOALS AND EFFICACY

Treatment goals reported as most relevant for ophthalmologists were patient’s symptoms (\bar{x} =2.82), fluoropositive lesions reduction (\bar{x} =2.61) and corneal injury prevention (\bar{x} = 2.50) (Fig. 4). Cornea and Refractive Surgery specialists assign a greater relevance to symptoms improvement compared to other specialists (\bar{x} = 2.96 vs \bar{x} = 2.82 p =0.04).

Regarding treatment efficacy, there is a perception of decreased efficacy as disease becomes more severe. Most ophthalmologists (80%) consider mild DED treatment to be very effective but only 0.01% in severe DED. A percentage of 36% believe available treatment options are ineffective in severe DED (Fig. 5).

TREATMENT OPTIONS

All participants have already used lubricating eye drops and/or ointments and most have already prescribed topical corticosteroids (n=100).

More than half of the respondents have used: omega 3 supplements (n=71), tetracyclines (n=69), topical cyclosporine (n=66) and tear plugs (n= 64).

Therapeutic contact lenses were used by 39% (n=48). A percentage of 31% (n= 38) claim they have already prescribed autologous serum.

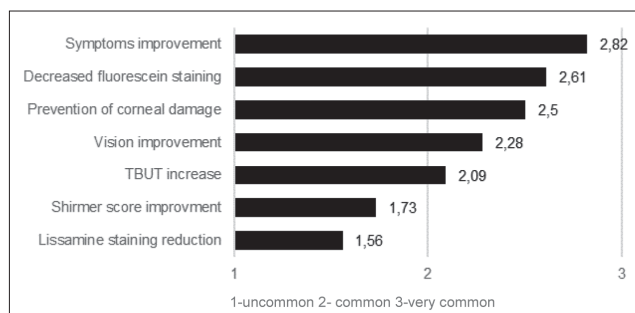


Figure 4. DED treatment goals

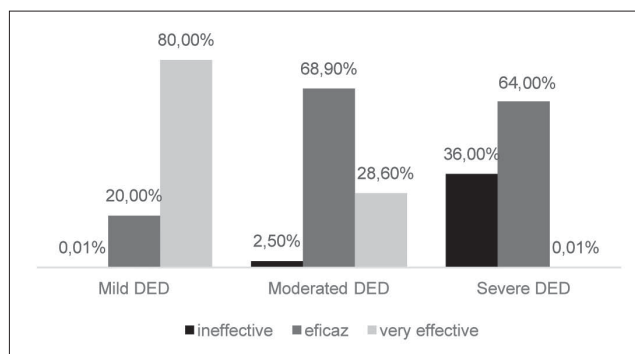


Figure 5. DED treatment efficacy

Surgical approaches and topical secretagogues are less used (16.40%, n= 20 and 5.70%, n=7 respectively).

Therapies such as heparin or LFA-1(lymphocyte function-associated antigen-1) antagonist were used by only 2 participants, both cornea and refractive surgery specialists (Fig. 6).

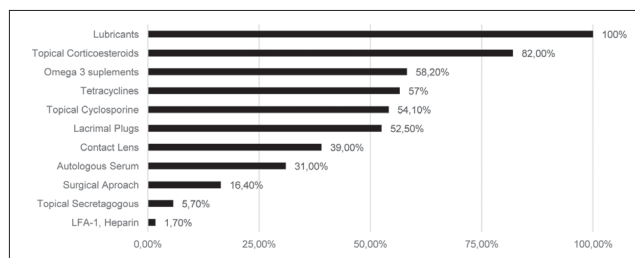


Figure 6. DED available treatment and used options

DISCUSSION

It was back in the XIX century that Anatole France observed that “People who don’t count, won’t count”. We believe that perception on current practices in our country regarding diagnosis and DED treatment and comparisons with the standard of care recommended by the TFOS-DEWS II guidelines, allows the identification of opportunities for improvement in clinical practice and achieve excellence.

All regions of Portugal, including Madeira were involved, with representation of all specialities and ophthalmologists at different stages of their professional career

Appendix 1. DED Management and Treatment Survey

1) Quantos doentes com olho seco trata por mês?

- 1-10
- 20-40
- 40-60
- >60

2) Com que frequência avalia os seguintes doentes para sinais/sintomas de olho seco? (1- raramente, 2- às vezes, 3- sempre)

- Doentes em consulta assintomáticos
- Doentes sintomáticos
- Doentes no pré e pós operatório de cirurgia refrativa
- Doente no pré e pós operatório de cirurgia de catarata

3) Quais os fatores de risco que identifica mais frequentemente nestes doentes? (1- incomum, 2- comum, 3- muito comum)

- Fatores ambientais (ar condicionado, uso de computador)
- Uso de lentes de contacto
- Cirurgia refrativa ou outras
- Disfunção de glândulas de meibomius
- Sjogren ou outras doenças auto-imunes
- Uso de terapêutica sistémica

4) Quais os sintomas mais frequentemente reportados pelos seus doentes de olho seco? (1-incomum, 2- comum, 3- muito comum)

- Visão turva
- Epífora
- Intolerância às lentes de contacto
- Sensação de corpo estranho
- Prurido
- Dor ocular
- Fotofobia
- Hiperémia ocular

5) Relativamente aos meios complementares de diagnóstico, com que frequência usa os seguintes? (1- raramente, 2- às vezes, 3- sempre)

- Questionários (ex: Dry Eye Questionnaire-5 ou Ocular Surface Disease Index)
- Teste de Schirmer
- Tear Breakup Time (TBUT)
- Osmolaridade da lágrima
- Coloração com fluoresceína
- Coloração com verde de lisamina
- Meibografia

6) Classifique a relevância dos seguintes critérios na sua prática clínica quando determina o sucesso do tratamento de doentes com olho seco (1-não relevante; 2-relevante; 3- muito relevante)

- Melhoria sintomas/satisfação do doente
- Melhoria da acuidade visual
- Prevenção de lesão de córnea

- Melhoria no teste de Schirmer
- Aumento do TBUT
- Diminuição de lesões fluoropositivas
- Diminuição de lesões que coram com verde de lisamina

7) Quais das seguintes terapêuticas já utilizou em doentes com olho seco?

- Lubrificante sob forma de colírios/pomada
- Suplementos de ómega 3
- Corticoides tópicos
- Ciclosporina tópica
- Tetraciclina
- Secretagogos tópicos
- Soro autólogo ou equivalente
- Antagonista LFA-1, PRGF, heparina tópica
- Lentes de contacto terapêuticas
- Plug lacrimal
- Abordagens cirúrgicas (tarsorrafia, transplante glândulas salivares)

8) Considere a eficácia das terapêuticas disponíveis no tratamento de: (1-não eficaz; 2- eficaz; 3- muito eficaz)

- Doentes com olho seco ligeiro
- Doentes com olho seco moderado
- Doentes com olho seco grave

9) Género

10) Em que região do país trabalha?

- Norte
- Centro
- Sul
- Madeira
- Açores

11) Há quantos anos exerce oftalmologia?

- Interno
- 1-10 anos
- 11-20 anos
- 21-30 anos
- > 30 anos

12) Indique a sua área de especialização

- Córnea e Cirurgia Refrativa
- Glaucoma
- Inflamação ocular
- Neuroftalmologia
- Oculoplástica
- Oftalmologia Pediátrica
- Retina Cirúrgica
- Retina Médica
- Interno
- Outra

and for that reason we believe our results are well representative of current standards in Portugal. The sample represented 10% of all ophthalmologists working in Portugal, which is in line with similar studies developed in Italy and the United States.^{12,13}

Half of ophthalmologists observe between 20 to 40 patients per month and 25% more than 40, emphasizing the significant prevalence of this pathology in clinical practice. These numbers, however, seem low, considering that studies demonstrate that 1/3 of patients who seek an ophthalmologist do it because of DED.² This may be explained by 2 important aspects to be considered in the future: different prevalence of DED in Portugal or different diagnostic criteria and methodologies employed. There are no epidemiological studies in Portugal regarding DED and, as observed with this survey, recommended diagnostic criteria are not systematically being used (and for that reason, patients may be underdiagnosed).

Regarding selection of patients to assess the presence of DED, most ophthalmologists always evaluate symptomatic patients. However, half of them rarely evaluate asymptomatic patients. Previous prevalence studies on DED point out that when only symptoms are considered, up to 50% of patients are considered to have DED. However, when the diagnosis is based exclusively on signs, the percentage rises, reaching 75% in some populations.² Despite the diagnosis of DED requires the presence of both signs and symptoms according to DEWS II, the same consensus denotes that some of the asymptomatic patients are the elderly ones, with long standing eye disease, with a neurotrophic component, and for that reason are asymptomatic. Moreover, the absence of symptoms in the presence of signs should be still regarded with caution since this condition may aggravate, and corneal ulcers may ensue. Corneal and refractive surgery specialists evaluate these patients more frequently than other specialists ($p = 0.02$), probably due to a greater awareness on these issues.

Considering preoperative care, ophthalmologist give greater importance to LVC surgery candidates compared to patients undergoing cataract surgery, with only 30% always evaluating these patients (*versus* 67%). Available data in the literature suggest that DED signs and symptoms are common in candidates for LVC surgery, which might be related to higher proportion of long-term contact lens wearers in this population.¹⁴ Although DED is not an absolute contraindication to LVC surgery, its presence predisposes toward more severe DED and delayed recovery of corneal sensitivity after surgery.¹⁴⁻¹⁶ Therefore, it is important to identify and treat appropriately patients with dry eye before proceeding with surgery. Maychuk D *et al*, found that the proportion of patients requiring dry eye therapy in LASIK candidates (based on OSDI and DEWS severity findings) was almost two times higher than the proportion receiving treatment.¹⁷

Regarding cataract surgery, the Prospective Health of Cataract Patient's Ocular Surface (PHACO) study showed that although 60 of patients who undergo cataract surgery had never complained of foreign body sensation, the majori-

ty (62,9%) had a TBUT ≤ 5 seconds and positive corneal staining (77%).¹⁸ Moreover, studies have shown that the presence of dry eye disease affects the preoperative planning as in accurate calculation of intraocular lens, keratometry and toric lens axis.¹⁹ In addition, up to 35% of dissatisfaction causes in postoperative period of cataract surgery are related to dry eye disease.²⁰ As this is the most common eye surgery performed worldwide, this evaluation should be given greater relevance to maximize the results of this surgery.

Regarding risk factors for DED, the answers given confirm the multifactorial nature of this pathology, but two risk factors stood out. Environmental risk factors were the most frequently identified. In fact, Courtin R *et al* documented a DED prevalence of up to 87.5% among visual display workers, which is present in everyday life of many patients.²¹ Meibomian gland dysfunction was the second most commonly identified risk factor in our survey. It has been shown that up to 85% of patients have mixed disease (aqueous deficiency plus evaporative dry eye), and most evaporative dry eye is due to MGD, which is in agreement with our results.²

Concerning DED symptoms, the difference in top three symptoms identified as most common between corneal and refractive surgery specialists and other ophthalmologists reveals not only the great variability in the symptoms of this disease, but also the relative importance attributed by the ophthalmologist to patient's symptoms. Despite this, the most frequently reported symptom overall is foreign body sensation which is interesting to note that is in agreement with results obtained by Barabino *et al* in Italy and Asbell *et al* in the USA.^{12,13}

With respect to diagnostic evaluation, it was interesting to note that dry eye questionnaires are seldom used by surveyed ophthalmologists, despite being considered mainstay for diagnosis of this disease.⁷ According to DEWSII, a score of >12 in OSDI or >5 in DEQ-6 is mandatory for diagnosis, along with the presence of ocular surface homeostasis markers. These questionnaires not only are essential as diagnostic criteria but also to stage disease severity and monitoring and treatment response (mild DED OSDI=12-22, moderate DED OSDI=23-32, severe DED OSDI=33-100). Although ophthalmologist do not use specific questionnaires, it is intriguing how globally they attach great importance to symptoms improvement in response to treatment. The impact on appointment duration is probably a decisive factor in the lack of use of these questionnaires. In Spain, only 12% of ophthalmologists report using these questionnaires in clinical practice.²² Measures should be considered to overcome this gap. Give the patient time in the waiting room to fill the questionnaire and then include this information is a possibility, as performed with other diagnostic tools in other subspecialties. Regarding ocular surface homeostasis markers, fluorescein as a vital dye of the ocular surface and TBUT were the most frequently performed tests, showing the importance attributed by Portuguese ophthalmologists to ocular surface lesions and tear homeostasis, which is in line with part of DEWS II recommendations. Staining with lissamine green may reveal additional information on the ocular surface, such as the pres-

ence of mucus and apoptotic lesion of epithelial cells of the conjunctiva but despite its diagnostic value, its use is still not widespread in Portugal and other European countries, possibly due to accessibility constraints and because it is not yet commercialized in eye drops formulation.^{7,12,22} Regarding tear osmolarity, there are several studies demonstrating the importance of this test, being frequently reported as the best to diagnose and characterize DED severity.^{23,24} DEWSII consensus states that tear osmolarity >308 mOsm/L or an inter eye difference >8 mOsm/L is diagnostic of DED.¹⁰ However, studies reveal a significant variability in the results obtained.²⁵ Tashbayev *et al* recently published a study, with the largest sample of patients with DED (n=757) tested for osmolarity and demonstrated that there are no significant differences between tear osmolarity of patients with dry eye and control.²⁶ Further studies are needed to clarify this paradox. In Portugal, its use is still very limited, probably due to the economic burden associated with the use of the device (Tearlab). Schirmer test was less frequently performed and although it is still recommended for severe water deficit confirmation (for example in Sjogren's syndrome), its variability and the fact that is a more invasive and time-consuming test make its recurrent use unviable in daily clinical practice.⁷

Regarding prescribed therapies, ocular lubricants are traditionally considered the mainstay of DED treatment and are widely available, so as expected, all participants have already prescribed this therapy.¹⁰

The importance given to inflammation control is demonstrated by the widespread use of topical corticosteroids (>75%) and topical cyclosporine (>50%). As for cyclosporine, this drug is approved in Europe for the treatment of severe keratitis in patients with dry eye who do not respond to therapy with tear film substitutes.²⁷ Even so, given the chronic and progressive behaviour of DED, it is also prescribed in less severe patients.²⁸ Several randomized clinical trials and meta-analysis have shown its efficacy in DED treatment, being a well-tolerated drug, without systemic effects and without the unwanted local effects of corticosteroids such as increased risk of cataract and intraocular pressure.^{10,27,28} Still regarding the control of inflammation in DED, new therapies have emerged in recent years, such as the LFA-1 antagonist recently approved by the Food and Drug Administration. This drug inhibits the recruitment and activation of T cells, thus decreasing the production of cytokines and consequently inflammatory response. Its effectiveness in reducing dry eye symptoms has been demonstrated, with improved visual acuity and eye discomfort even in patients with severe DED.²⁹ This drug needs approval from the European Medicines Agency and therefore is not used in Portugal.

Regarding omega 3 supplementation, more than half of the participants have already prescribed this supplement, however its role in the treatment of dry eye is not yet completely defined.¹⁰ Although smaller studies have shown improvement in symptoms and signs of dry eye with supplementation, the largest multicentre clinical trial on this topic, the DREAM study, reported no differences between sup-

plementation with omega 3 *versus* placebo over a month, concerning signs and symptoms of dry eye disease.³⁰⁻³²

The use of autologous serum and therapeutic contact lenses is usually reserved for patients with severe DED, which partially justifies its use by less than 40% of participants. Most clinical trials suggest that autologous serum is effective in treating DED due to its anti-inflammatory and neurotrophic properties, improving symptoms in up to 80% of patients with severe dry eye.¹⁰ Multidisciplinary approach between ophthalmology, haematology and clinical pathology departments, to prepare autologous serum is required and sometimes, may preclude its widespread use in severe cases. Regarding contact lenses, they act in tear film stabilization, and additionally improve DED symptoms by decreasing corneal nerves endings stimulation.³³ Their availability makes them an easier choice in severe disease. Lacrimal plugs acts by retaining tears on the ocular surface by blocking their drainage, explaining the rationale for using it in aqueous deficiency DED.¹⁰ They are easily inserted but not always easily accessible in clinical practice. Moreover punctal occlusion in the presence of ocular surface inflammation is controversial, because it could prolong the presence of pro-inflammatory cytokines on the ocular surface and therefore treatment of the inflammation prior to occlusion is recommended.¹⁰

The difficulties on severe DED treatment are evidenced when 36% of participants consider ineffective the available therapies. In a similar study conducted in the USA, 36.8% of respondents considered the treatment ineffective in patients with severe dry eye and only 5% considered it effective, which is in line with our study.¹³ These results should be interpreted with caution. First, the only objective and recognized tools to grade disease severity are OSDI score or tear osmolarity, none of which are widely being used by Portuguese ophthalmologists. On the other hand, it should be noted that almost 50% of participants never used cyclosporine, therapeutic contact lenses or autologous serum, approaches that are relatively accessible in Portugal and have evidence of improvement in this subset of patients. Nevertheless, results may still demonstrate the need for more effective therapies in this group of patients.

The main limitation of our study is the small sample. However, it represents about 10% of ophthalmologists currently practicing in Portugal, a rate higher than those obtained in studies with similar design. Differences between private and public sectors should have also been investigated since some treatments are more easily available in public sector (for example cyclosporine and autologous serum).

In summary, our results demonstrate that overall, Portuguese ophthalmologists integrate the best practices while approaching and treating DED, which reveals a constant scientific update in favour of better control of these patients. However, there is room for improvement as demonstrated by gaps in diagnostic and treatment, which are probably related to time-consuming constraints or inaccessibility.

All patients should be examined for DED prior surgery, symptoms should be considered more as part of diagnosis and follow-up, and some treatment options should be

considered more often (for example cyclosporine, lacrimal plugs, autologous serum).

Our findings also highlight the concern with treatment in severe DED, suggesting that more effective therapies may be needed.

PRESENTATIONS / APRESENTAÇÕES

Presented at Portuguese Society of Ophthalmology Congress (2020) and European Society of Refractive and Cataract Surgery Winter Congress (2021)

RESPONSABILIDADES ÉTICAS

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