Flash Look

Phakic Intraocular Lenses: a review

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RESUMO

Introdução: Os procedimentos refractivos intraoculares com implante de lentes fáquicas tornaram-se uma forma eficiente, segura e previsível para o tratamento de altas ametropias nas quais os procedimentos refractivos ablativos na córnea estão contra-indicados. O implante de uma lente intraocular fáquica é um procedimento reversível que preserva a capacidade acomodativa com uma indução mínima de aberrações de alta ordem quando comparado com procedimentos ablativos na córnea.
Métodos: Foi elaborada uma revisão analítica sobre o implante de lentes intraoculares fáquicas.
Resultados: Uma revisão acerca das indicações, particularidades cirúrgicas, exames complementares de diagnóstico, modelos de lentes disponíveis, características técnicas específicas e de segurança foram abordadas.
Conclusão: Vários estudos demostram que as lentes intraoculares fáquicas apresentam resultados previsíveis, estáveis e com um perfil de segurança estabelecido a longo prazo.

Palavras-chave
Lentes Fáquicas; Artisan/Verisyse; Artiflex/ Veriflex; ICL.

ABSTRACT

Introduction: Intraocular refractive procedures with the implantation of a phakic intraocular lens have become a safe, efficient and predictable alternative for treating high ametropias when the use of corneal photoablative procedures is not possible. The implantation of phakic intraocular lens (pIOLs) is a reversible refractive procedure preserving accommodation, with minimal induction of higher orders aberrations when compared to corneal photoablative procedures.
Methods: An analytical review of phakic intraocular lens implantation was performed.
Results: Critical issues related to phakic intraocular lens indications, ancillary tests, options regarding model designs, ranging, sizing, safety matters and surgical care are discussed.
Conclusion: Several studies have demonstrated that phakic intraocular lens have a good predictability, stability and long term safety.

Key words
Phakic lenses; Artisan/Verisyse; Artiflex/Veriflex; ICL.

INTRODUCTION

Phakic intraocular lenses (pIOLs) demonstrate high optical quality and potential gain in visual acuity in myopic patients due to retinal magnification[1]. Correction is not limited by corneal thickness or topography and a faster visual recovery and stable refraction are expected[1,2]. Being a reversible refractive procedure that preserves the accommodative function, pIOL implantation is attractive to both patients and refractive surgeons[3,4]. Advances in intraocular lens materials and designs, surgical tools, viscoelastic substances and procedures allowed better results and fewer complications.

pIOL are classified according to the position of IOL fixation: angle- supported anterior chamber; iris- fixated anterior chamber and posterior chamber.

Available pIOLs in the United States by the Food and Drug Administration (FDA) include two types of iris-fixated and one type of posterior chamber lenses for myopia[5,6]. Outside the United States, angle-supported, iris-fixated and posterior chamber lenses are available for hyperopia and myopia[5,6]. Toric phakic intraocular lenses are also available to correct both myopia and astigmatism[7]. Although there are many designs of angle- supported pIOL, most have been withdrawn from the market due to safety concerns, particularly to complications related to endothelial cell loss[8,9].

Indications of Phakic lenses

General criteria should be followed regarding good predictability and safety: age ≥21 years; stable refraction (less than 0.5 D change for 1 year); clear crystalline lens; ametropia not appropriate for excimer laser surgery; unsatisfactory vision with contact lenses or spectacles; appropriate pupil size for the specific pIOL; anterior chamber depth appropriate for the specified pIOL; minimum endothelial cell count specified for each pIOL; no ocular pathology such as compromised corneal endothelium, iritis, iris atrophy, rubiosis iridis, cataract, glaucoma and retinal disorders[10].

Ancillary tests

Specular microscopy or confocal microscopy should be performed to evaluate endothelial cell count and morphology looking for polymegathism and pleomorphism[17]. Anterior chamber depth must be assessed because adequate depth is required for safe implantation. It can be measured by ultrasound, anterior segment optical coherence tomography (OCT), partial coherence interferometry, slit-beam topography, or Scheimpflug imaging[5,6, 11].

Regarding posterior chamber pIOLs, sulcus-to-sulcus distance is crucial for an appropriate selection of the lens diameter. High frequency ultrasound is currently the best method to measure sulcus-to-sulcus distance[12]. Other equipment such as anterior segment OCT; slit- beam topography or Scheimpflug imaging can be used to estimate the sulcus-to-sulcus distance by measuring the white-to-white (WTW) distance and adding 0.5 mm[11,12].

Iris-fixated Phakic intraocular lens Artisan/Verisyse Phakic© IOL

The Artisan lens (Ophtec©), marketed as the Verisyse lens (Abbott Medical Optics©), has been FDA approved for correction of myopia in a power range of -5.00 D to -20.00 D[13]. This pIOL has a fixed overall length of 8.5 mm (7.5mm for children) made of PMMA with 5 or 6 mm optic, requiring an entry wound of 5 to 6 mm. It is designed to be placed within the anterior chamber with fine claws in the haptics to incorporate iris tissue to hold the IOL in place in a process called enclavation. Because this pIOL is fixated to the midperipheral iris it has the advantage of having a "one-size-fits-all" length. Although the vaulted configuration of the Artisan/Verisyse© is designed to ensure a normal aqueous flow, a peripheral iridectomy is necessary during surgery or in option a previous peripheral iridotomy (Nd: YAG) should be performed to avoid a pupillary block glaucoma[14]. One advantage of this pIOL is that it can be properly centered over de pupil even when the pupil is off center. The iris claw fixation system in the midperiphery also warrants a total fixation with no rotation of the pIOL, ideal for the toric versions. Because a 5 to 6 mm wound is required for a proper insertion of the lens, a careful wound closure is essential to minimize surgically induced astigmatism[15]. Outside the United States the Artisan model 203© to correct hyperopic error with a power range of +3.00 to +12.00 D and toric pIOL designs to enable spherocylindrical correction are available.

For safe implantation of Artisan© pIOL, anterior chamber depth should be at least larger than 2.8 mm measured from corneal endothelium to the anterior surface of the crystalline lens and the distance between the pIOL and the endothelium in the periphery must be at least 1.5 mm[15,17].

A minimal endothelial cell density is required for safe implantation according to subject´s age: 18 to 25 years of age- 2800 cells/mm^2; 26 to 30 years of age- 2650 cells/mm^2; 31 to 35 years of age- 2400 cells/mm^2; 36 to 45 years of age- 2200 cells/mm2; > 45 years of age 2000 cells/mm^2 [16,17].

Artisan© pIOL is contraindicated in patients with: endthelium cell counts less than 2000 cells/mm^2; anterior chamber depth less than 2.8 mm; glaucoma; history of retinal detachment, macular degeneration or retinopathy; any form of cataract; recurrent or chronic iritis; fixed pupil size

> 4.5 mm or scotopic pupil size > 6.0 mm (5 mm PIOL optic) or 7.0 mm (6 mm PIOL optic); convex, bulging or volcano shaped iris; abnormal cornea; under 18 years of age or during pregnancy[16,18].

Foldable models called Artiflex/Veriflex© have followed the PMMA rigid lens (Artisan /Verisyse©). These iris-fixated pIOLs are made of flexible materials and can be inserted through a small, self-sealing wound of approximately 3 mm having the advantage of minimizing the surgically induced astigmatism[19]. Overall length is 8.5 mm and power range from -2 to -14.5 D in 0.5 D steps. Toric pIOL designs are also available to enable spherocylindrical correction[20]. The dioptric power range of Artiflex/Veriflex© toric PIOL includes a spherical correction from -1.00 to -13.5 diopters in combination with a cylinder correction from -1.0 to -5.0 diopters.

For safe implantation of Artiflex© pIOL anterior chamber depth should be at least larger than 3.0 mm measure from corneal endothelium to the anterior surface of the crystalline lens[13,19]. The minimal endothelial cell density and contraindications that are reviewed above for the Artisan© PIOL also apply to the Artiflex© pIOL[16,18,20].

A vacuum enclavation system VacuFix©, is available for all Artisan© and Artiflex© models. Using the vacuum of a phaco machine and a tip with an aspiration hole a controlled grasping of iris tissue allows an optimal position and centration. Curved VacuFix© tips allow an easier reach of the enclavation site especially when working with toric lens.

Posterior chamber Phakic intraocular lens

Visian ICL© (STAAR Surgical)

The ICL© is the most implanted posterior chamber pIOL, with the Visian ICL© 4 model having obtained FDA approval for the correction of myopia ranging from -3D to -15D (available off-label from -15 D to -20.0 D)[21]. It is a rectangular single-block made of collamer and available in 4 diameters (12.1 mm; 12.6 mm; 13.2 mm; 13.7 mm), with a variable optical zone depending on the optical power (4.65 to 5.5 mm for negative lenses and 5.5 mm for positive lenses). The lens is foldable and can be injected similar to a traditional posterior chamber intraocular lens (incision of 3.2 mm). Once delivered into the anterior chamber of the eye, four corners of the lens are tucked under the iris into the sulcus. Prior to surgery it is important to create two peripheral iridotomies to prevent pupillary block or a peripheral iridectomy should be performed. It was designed as a sulcus-supported lens and for this reason, sulcus-to-sulcus distance is crucial for an appropriate selection of the lens diameter (view ancillary tests). The correct lens size is correlated to the amount of vaulting of the lens optic over the crystalline lens and according to the STAAR it should be 1.0 ± 0.5 corneal thicknesses. Using the appropriate vault is crucial for reducing complications[22].

Outside the United States the Visian ICL© is also available for correcting hiperopic error ranging from +3.00 to +12.00 D[23]. Toric pIOL designs also enable spherocylindrical correction ranging spherical powers in half-diopters from -3 to -20 and astigmatism powers up to 6 D in half-diopter steps.

A more recent ICL© model with a central hole (ICL©V4c STAAR Surgical) is available for correcting myopia with equal safety, efficacy and predictability. The presence of a central 360µm hole, called KS-©Aquaport©, differentiates ICL©V4c from the conventional ICL V4b. According to STAAR, its centraflow technology allows a more natural flow of aqueous humor, eliminating the need of an iridotomy/ iridectomy[24]. According to data from STAAR less than 1 % of lenses were exchanged because of vaulting issues and several studies have reported incidence of cataract formation to be less than 2%[26, 27,30].

Toric pIOL with the centraflow technology are also available and enables spherocylindrical correction ranging spherical powers in half-diopters from -3 to -20 and astigmatism powers up to 6 D in half-diopter steps. In contrast to other toric lens, the ICL© has the axis at a specific meridian. It's designed to be aligned with the 180-degree meridian, with only a minor adjustment[14,24]. As an advantage, the surgeon's learning curve to implant these lenses is lower when compared to other phakic lens and centration is much easier as compared to iris fixated pIOLs.

Regarding safety concerns, FDA approved the Visian ICL© for eyes with an anterior chamber depth of 3.0 mm (measure from corneal endothelium to the anterior surface of crystalline lens[23]. With experience many surgeons can safely implant this lens in eyes with anterior chamber depth of 2.8 to 3.0 mm and open angle (angle superior to 35º) but it is considered an off-label use[24,25].

For a safe implantation STAAR recommends a minimal endothelial cell density according to subject´s age and ACD of 3.2 mm: 21 to 25 years of age- 3800 cells/mm^2; 26 to 30 years of age- 3375 cells/mm^2; 31 to 35 years of age- 2975 cells/mm^2; 36 to 40 years of age- 2625 cells/mm^2; 41 to 45 years of age- 2325 cells/mm^2; > 45 years of age 2050 cells/mm^2 [26,28,29].

According to STAAR ICL© pIOL is contraindicated: with anterior chamber depth (ACD) <3.0 mm; with anterior chamber angle less than grade II as determined by gonioscopic examination; for patients who do not meet the minimum endothelial cell density or during pregnancy[26,27,28]. The safety and effectiveness of ICL© pIOL has not been established in patients with unstable or pathologic myopia; ocular hypertension or glaucoma; pseudoexfoliation; pigment dispersion syndrome and history or clinical signs of iritis/uveitis[27,28,30].

Complications of Phakic IOL

The most relevant and serious complications include cataract, endothelial cell loss, glaucoma, endophtalmitis, retinal detachment, lens dislocation and iritis. Subjective optic vision symptoms most frequently reported are halos, glare and starbursts.

Iris-fixated Phakic Intraocular Lens

A total of 662 subjects were evaluated in the FDA clinical trial with one 1-year follow-up to determine the safety of the Artisan© pIOL. The complications reported during the study included: hyphema (0.2%); iritis (0.5%) retinal detachment (0.6%); pIOL dislocation (0.8%) and surgical reintervention (4.2%). No incidence of endophtalmitis, raised IOP requiring treatment after the first month or persistent corneal edema was reported[13].

Stulting and colleagues reported a 3-year follow-up study on 232 eyes of the 662 eyes enrolled in the FDA study. The mean decrease in endothelial cell density from baseline to 3 years was 4.8%. The cumulative incidence of lens opacities was 4.5% but the majority of these opacities were not visually significant[13].

The general incidence of halos, glare and starbursts varied from 0 to 8.8% and were more frequent and severe with smaller optic diameters and with pupils larger than 5.5 mm[8,12,13].

During surgery care must be taken to avoid endothelial, crystalline and iris trauma. Good centration and good enclavation is crucial to avoid pIOL luxation with minimal trauma or iris atrophy as well as not to incorporate too much iris tissue causing pupil ovalization[20].

Posterior chamber phakic intraocular lens

Choosing the correct lens size and using the appropriate vault is crucial for reducing complications: small vault can cause implant touch in crystalline lens creating a cataract; excessive vault may cause the implant to touch the iris and lead to pigment dispersion syndrome[22].

A total of 523 eyes of 291 patients with between -3 D and -20.0 D of myopia were evaluated in the FDA clinical trial with one 1-year follow-up to determine the safety of the ICL© pIOL. Early induced anterior subcapsular (AS) opacities were seen in 11 cases (2.1%) and 2 (0.4%) late AS opacities were observed. Two (0.4%) ICL© were removed with cataract extraction and intraocular lens implantation was performed. Patient satisfaction (very/extremely satisfied) accessed by a subjective questionnaire was reported by 92.4% of subjects[26].

Sander and colleagues evaluated the outcomes and complications at 3 years of follow- up of 526 eyes of 294 patients with between -3.0 and -20.0 D of myopia participating in the FDA clinical trial of the ICL© for myopia. A cumulative 3-year corneal endothelial cell loss was under 10%. Early anterior subcapsular opacities were seen in 14 eyes (2.7%), with only 2 being clinically significant. Five eyes (0.9%) of 3 patients developed nuclear opacities. Three (0.6%) ICL© removals with cataract extraction and IOL implantation have been performed. Incidences of patient symptoms, glare, halos and night vision problems decreased or remained unchanged after ICL© surgery[27].

The long- term effects of intraocular lens implantation have not been determined and some of these complications do not manifest for years, thus continuous follow-up is required.

CONCLUSION

Several studies have demonstrated that Artisan/Verisyse©, Artiflex /Veriflex© and Visian ICL© have a good predictability, stability and long term safety. While the learning curve is lower with the Visian ICL© lens, there is a greater probability of having to exchange the lens due to incorrect size and vaulting problems. Lens made of PMMA require a larger wound and a significant induced astigmatism is expected. Centration appears to favor Visian ICL© although this can be correlated with surgeon skills. Some surgeons prefer iris-fixated lens tending to protect the crystalline and others prefer posterior chamber lens regarding endothelial protection. Several good options are currently available and it's up to surgeon's preference the specific pIOLs to choose.

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1 gota no(s) olho(s) afetado(s)
2x/dia (de manhã e à noite)

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Agente antialérgico de ação múltipla:

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2. Estabilizador dos mastócitos[1]
3. Inibidor da infiltração, da ativação e da desgranulação dos eosinófilos[1]

Os TRATAMENTOS TÓPICOS para a ALERGIA ocular têm VANTAGENS sobre os sistémicos:[1]

1. Rápido início de ação (em 3 minutos)[1]
2. Efeitos adversos sistémicos mínimos[1]

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RESUMO DAS CARACTERÍSTICAS DO MEDICAMENTO | **1. NOME DO MEDICAMENTO** Lidina 0,125 mg/0,5 ml, colírio, solução **2. COMPOSIÇÃO QUALITATIVA E QUANTITATIVA** Lidina é um colírio, solução em recipiente unidose, sem conservantes. Um ml de solução contém 0,345 mg de fumarato de cetotifeno, equivalente a 0,25 mg de cetotifeno. Cada unidose com 0,5 ml de solução contém 0,172 mg de fumarato de cetotifeno, equivalente a 0,125 mg de cetotifeno. Uma gota (27,6 µl) contém 9,5 µg de fumarato de cetotifeno, equivalente a 6,9 µg de cetotifeno. Lista completa de excipientes, ver secção 6.1. **3. FORMA FARMACÊUTICA** Colírio, solução. Solução límpida e incolor. **4. INFORMAÇÕES CLÍNICAS 4.1 Indicações terapêuticas** Tratamento preventivo e sintomático da conjuntivite alérgica crónica e sazonal. **4.2 Posologia e modo de administração** Utilização em adultos, idosos e crianças (com idade igual ou superior a 3 anos): A dose habitual é de 1 gota no(s) olho(s) afectado(s), 2 vezes por dia (de manhã e à noite). O conteúdo de uma unidose é suficiente para uma administração nos dois olhos. Os recipientes unidose são de utilização única, não devendo ser reutilizados uma vez que não contêm conservante. O conteúdo do recipiente unidose mantém-se estéril até que o sistema de fecho original é quebrado. Os doentes devem ser instruídos a evitar que a extremidade conta-gotas entre em contacto com o olho ou qualquer outra superfície, para evitar a contaminação da solução. **4.3 Contra-indicações** Hipersensibilidade à substância activa (cetotifeno) ou a qualquer dos excipientes. **4.4 Advertências e precauções especiais de utilização** Não existem advertências especiais. **4.5 Interacções medicamentosas e outras formas de interacção** Se Lidina for usado concomitantemente com outros medicamentos de uso oftálmico, deve respeitar-se um intervalo mínimo de 5 minutos entre a administração das diferentes medicações. A utilização de formas farmacêuticas orais de cetotifeno pode potenciar os efeitos depressores do Sistema Nervoso Central (SNC), dos anti-histamínicos e do álcool. Apesar de não terem sido observados com colírios contendo cetotifeno, a possibilidade da ocorrência destes efeitos não pode ser excluída com o uso de Lidina. **4.6 Fertilidade, gravidez e aleitamento** Não existem dados clínicos adequados relativamente à utilização de cetotifeno em mulheres grávidas. Estudos realizados em animais, utilizando doses tóxicas para as mães por via oral, revelaram um aumento da mortalidade pré e pós-natal, mas não apresentaram acção teratogénica. As concentrações sistémicas, após a administração oftálmica, são muito mais baixas do que as registadas após administração oral. A prescrição de Lidina a grávidas deve ser feita com precaução. Apesar dos dados obtidos nos estudos realizados em animais, após administração oral, revelarem excreção no leite materno, não é provável que a administração tópica oftálmica deste medicamento no ser humano produza concentrações detectáveis no leite materno. Lidina pode ser utilizado durante o aleitamento. **4.7 Efeitos sobre a capacidade de conduzir e utilizar máquinas** Qualquer doente que apresente visão enevoada ou sinta sonolência, não deve conduzir nem operar máquinas. **4.8 Efeitos indesejáveis** Para a dose recomendada, foram reportados os seguintes efeitos indesejáveis: Afecções oculares Efeitos frequentes (≥1/100 a <1/10): irritação ocular, queratite puntacta. Efeitos pouco frequentes (≥1/1.000 a <1/100): visão turva (durante a instilação), olho seco, distúrbios da pálpebra, conjuntivite, dor ocular, fotofobia, hemorragia subconjuntival. Doenças do sistema nervoso Efeitos pouco frequentes (≥1/1.000 a <1/100): Cefaleias, sonolência. Afecções dos tecidos cutâneos e subcutâneos- Efeitos pouco frequentes (≥1/1.000 a <1/100): Erupções cutâneas, eczema. Doenças gastrointestinais- Efeitos pouco frequentes (≥1/1.000 a <1/100): Boca seca. Doenças do sistema imunitário- Efeitos pouco frequentes (≥1/1.000 a <1/100): Reacções de hipersensibilidade. **4.9 Sobredosagem** Não foram notificados casos de sobredosagem. A ingestão oral do conteúdo de um recipiente de 0,5 ml seria equivalente a 0,125 mg de cetotifeno, o que corresponde a 6% da dose oral diária recomendada para uma criança de 3 anos de idade. Os resultados clínicos não demonstraram sinais ou sintomas graves após uma ingestão oral até 20 mg de cetotifeno. **5. PROPRIEDADES FARMACOLÓGICAS 5.1 Propriedades farmacodinâmicas** Grupo farmacoterapêutico: Grupo 15.2.3 Outros anti-inflamatórios, descongestionantes e anti-alérgicos. Código ATC: S01GX08. O cetotifeno é um potente antagonista dos receptores H1 da histamina (anti-histamínico H1). Os estudos in vivo realizados em animais e os estudos in vitro sugerem actividades adicionais na estabilização dos mastócitos e na inibição da infiltração, da activação e da desgranulação dos eosinófilos. **5.2 Propriedades farmacocinéticas** Num estudo de farmacocinética realizado com um colírio de cetotifeno, em 18 voluntários saudáveis, os níveis plasmáticos de cetotifeno registados, após administração oftálmica de uma dose única e de doses múltiplas durante 14 dias, encontravam-se na maioria dos casos, abaixo do limite de quantificação (20 pg/ml). Após administração oral, o cetotifeno é eliminado de forma bifásica com uma semi-vida inicial de 3 a 5 horas e uma semi-vida terminal de 21 horas. Cerca de 1% da substância activa inalterada é excretada na urina, nas 48 horas seguintes à administração, e 60-70% sob a forma de metabolitos. O metabolito principal, o cetotifeno-N-glucuronido, é praticamente inactivo. **5.3 Dados de segurança pré-clínica** Os resultados pré-clínicos baseados em estudos convencionais de segurança farmacológica, de toxicidade a dose repetida, de genotoxicidade, de potencial carcinogénico e de toxicidade para a reprodução, revelaram não existirem riscos especiais para os seres humanos com o uso do colírio de cetotifeno. **6. INFORMAÇÕES FARMACÊUTICAS 6.1 Lista dos excipientes** Glicerol, Hidróxido de sódio, Água para preparações injectáveis **6.2 Incompatibilidades** Não aplicável. **6.3 Prazo de validade** 2 anos. **6.4 Precauções especiais de conservação** Não conservar acima de 25°C. Após a abertura da embalagem intermédia (saqueta), os recipientes unidose podem ser armazenados dentro da saqueta, durante 3 meses se estiverem dentro da caixa, ou durante 28 dias se estiverem fora da caixa. Após a primeira abertura do recipiente deve ser utilizado de imediato, e deve ser rejeitado após a sua utilização **6.5 Natureza e conteúdo do recipiente** Lidina é apresentado em embalagens contendo 10, 20, 30, 50, 60 ou 120 recipientes unidose transparente (em conjuntos de 5 unidoses), em polietileno de baixa densidade (LDPE), sem aditivos. Os conjuntos de recipientes unidose encontram-se protegidos por uma saqueta de alumínio (embalagem intermédia). Cada recipiente unidose contém 0,5 ml de colírio, solução. É possível que não sejam comercializadas todas as apresentações. **6.6 Precauções especiais de eliminação e manuseamento** Após a utilização, o recipiente unidose deve ser eliminado; a solução remanescente não deve ser guardada para posterior utilização. **7. TITULAR DA AUTORIZAÇÃO DE INTRODUÇÃO NO MERCADO** Laboratório Edol – Produtos Farmacêuticos, S.A. Av. 25 de Abril, 6-6A 2795-225 Linda-a-Velha, Portugal **8. NÚMERO(S) DA AUTORIZAÇÃO DE INTRODUÇÃO NO MERCADO** 5379920 – Embalagem 10 recipientes unidose, colírio, solução, 0,125 mg/0,5 ml. 5379938 – Embalagem 20 recipientes unidose, colírio, solução, 0,125 mg/0,5 ml. 5379946 – Embalagem 30 recipientes unidose, colírio, solução, 0,125 mg/0,5 ml. 5381868 – Embalagem 50 recipientes unidose, colírio, solução, 0,125 mg/0,5 ml. 5381876 – Embalagem 60 recipientes unidose, colírio, solução, 0,125 mg/0,5 ml. 5381900 – Embalagem 120 recipientes unidose, colírio, solução, 0,125 mg/0,5 ml. **9. DATA DA PRIMEIRA AUTORIZAÇÃO/RENOVAÇÃO DA AUTORIZAÇÃO DE INTRODUÇÃO NO MERCADO** Data da primeira autorização: 28/04/2011 **10. DATA DA REVISÃO DO TEXTO** 12/11/2014. | MSRM não comparticipado.