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OPTICAL NEUROPATHY: ANTIGLAUCOMATOUS TREATMENTS OFFERED BY THE UNIQUE HEALTH SYSTEM IN BRAZIL, AN ANALYSIS OF THE LAST DECADE

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ABSTRACT

Introduction: Optical neuropathy with progressive loss of visual field, glaucoma represents the main cause of irreversible blindness. Objectives: To analyze the frequency of antiglaucomatous procedures performed by the Unified Health System (SUS), in the last 10 years, requiring hospitalization and outpatient care. **Methods:** This is a cross-sectional quantitative retrospective study, carried out through consultations and data analysis of antiglaucomatous procedures in the DATASUS system, between January 2010 and December 2019. **Results:** In Brazil, trabeculectomy was the most performed procedure in the last 10 years. Outpatient care had an average of 10,661 per year, on the other hand, the need for hospitalization increased by 70%. The second procedure that generated the most hospitalizations was the implantation of an anti-glaucomatous prosthesis, which doubled in the corresponding period. Cyclodialysis was the least used procedure in the 10 years of analysis, both on an outpatient and hospital basis, and is reserved for the final stages of glaucoma. Surgical iridectomy, used for acute treatment, showed a reduction, in 2019 it represented less than a third compared to 2010. As for outpatient procedures using lasers, such as phototrabeculoplasty and iridotomy, they showed significant growth. **Conclusion:** Trabeculectomy is considered the gold standard, justifying its greater frequency, both on an outpatient and hospital basis. Procedures using laser are expanding, trabeculoplasty as an alternative to primary therapy, and iridotomy for greater safety in acute treatment. As the population ages, glaucoma tends to be increasingly prevalent, contributing to the progressive increase in trabeculectomies.

Keywords: Glaucoma treatment. Optical neuropathy. Trabeculectomy.

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INTRODUCTION

Potentially progressive optic neuropathy associated with loss of visual field as the lesion progresses, glaucoma today represents 12.3% of cases of blindness worldwide, according to the World Health Organization. In Brazil [1], and worldwide [2], it is the main cause of irreversible blindness. It affects about 2-3% of the population over 40 and it is estimated that approximately 50% do not have a diagnosis [3]. In Brazil, the concern with the disease is so great that, on May 26, the National Day to Combat Glaucoma is celebrated.

The disease has a significant hereditary component and having knowledge about the importance of heredity is essential to alert descendants about the risk of developing [4]. People with glaucomatous relatives are up to ten times more likely to develop the disease [5].

Glaucoma encompasses a diverse group of diseases, however, half of the global cases are represented by closed-angle glaucoma [3], in which the drainage of aqueous humor is obstructed. It has a silent progression, the most common form of the disease is asymptomatic. The cost of preventing blindness is much less than the social cost caused by blindness [6]. In 1995, in the United States, the annual expense for the visually impaired was approximately 12 thousand dollars [7].

METHODS

This is a retrospective cross-sectional study, carried out through consultations and data analysis of the DATASUS system, in the period between January 2010 and December 2019, considering the following procedures: "Ciclodialise", "Trabeculectomia", "Implant anti-glaucomatous prosthesis" and "Cyclocriocoagulation/Diathermy", "Surgical iridectomy", "Laser iridotomy" and "Laser photocoagulation". The data are provided by the hospital and outpatient information system of the Unified Health System [SUS]. The data were organized by making a graph using the Microsoft Excel program.

RESULTS AND DISCUSSION:

In Brazil, trabeculectomy stands out among antiglaucoma surgical procedures, being the most performed surgery in the last 10 years. The number of outpatient trabeculectomies remained stable during the analyzed interval [average of 10,661 per year]. In the same period, there was an increase of approximately 70% in the number of hospitalizations for the same [2,465 in 2010 and 4,254 in 2019]. According to the Brazilian Glaucoma Society, trabeculectomy is the anti-glaucoma surgery considered to be the gold standard [8]. This aims to reduce intraocular pressure in disease refractory to clinical treatment, either due to poor adherence or due to disease progression even with adequate intraocular pressure control. It consists of creating a fistula, which will be protected by a scleral flap, allowing the aqueous humor to drain from the anterior chamber into the subconjunctival space. [3]

The first month after surgery is the most critical and depends on the correct use of corticosteroid drops. Since it is not a curative surgery, adequate postoperative follow-up is as important as the surgical procedure for a favorable final outcome [9] and demands the use of eye drops. The healing process is crucial for the frequency of postoperative consultations, the medication regimen and the need for future interventions. A study [10] found that up to 78% of patients undergoing trabeculectomy will require some intervention in the post-surgical period, such as: postoperative eye massage and the use of 5-fluorouracil, an antimetabolite that helps inhibiting the healing response that may interfere with the successful draining of aqueous humor.

The second procedure that generated the most hospitalizations was the implantation of an anti-glaucomatous prosthesis, which was not performed by SUS via an outpatient clinic, which doubled in the corresponding period. Drainage devices are inserted, communication with the anterior chamber is created, allowing the flow of aqueous humor [3].

Cyclodialysis was the least used procedure in all 10 years of analysis [Figure 1], both on an outpatient and hospital basis, it is reserved for the final stages of glaucoma [11], there is a rupture of the longitudinal fibers of the ciliary muscle, leading to a separation between the ciliary body and the adjacent sclera forming a communication between the anterior chamber and the supraciliary space and an the increase in the uveoscleral drainage of the aqueous humor, resulting in ocular hypotonia, associated with the definitive impairment of visual acuity [12]. In cycloablation, also performed in uncontrolled glaucoma in the final stage, part of the ciliary secretory epithelium is destroyed in order to reduce the production of aqueous humor [3] and was the second least performed procedure, both outpatient and hospital.

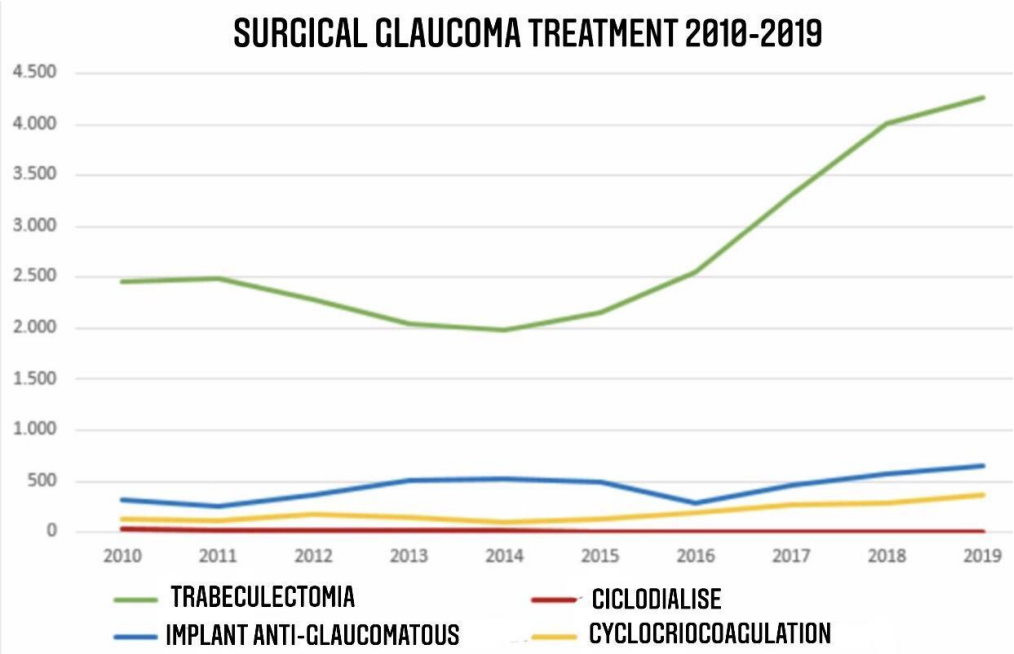

Figure 1: Frequency of antiglaucomatous surgeries requiring hospitalization in the last 10 years, in Brazil, source: DATASUS 2010/2019

Surgical iridectomy, used for acute treatment, showed a significant reduction [Figure 2], in 2019 it represented less than a third compared to 2010 [15,761 to 4,819], a connection is made between the posterior and anterior chamber through the iris. The outpatient procedures using lasers, such as phototrabeculoplasty and iridotomy, with technological advances, had significant growth. In phototrabeculoplasty, laser is applied to the trabecular meshwork, increasing the drainage of aqueous humor, whereas in iridotomy, the laser is applied to the iris.

Conclusion:

There are two ways to treat glaucoma, which can be clinical or surgical. The general objective of treatments is to improve the quality of life and maintain visual acuity with the minimum possible consequences [13].

Laser procedures are expanding. Phototrabeculoplasty, as an alternative to primary pharmacological therapy, is as effective as monotherapy [3]. Surgical iridectomy is being replaced by laser iridotomy due to its greater safety and similar efficacy [14]. The suspicions for this slope in hospitalizations for trabeculectomy and in outpatient laser procedures are: population aging and poor adherence to clinical treatment, respectively. With the aging of the population, glaucoma tends to be increasingly prevalent, contributing to the progressive increase in the number of hospitalizations for trabeculectomies.

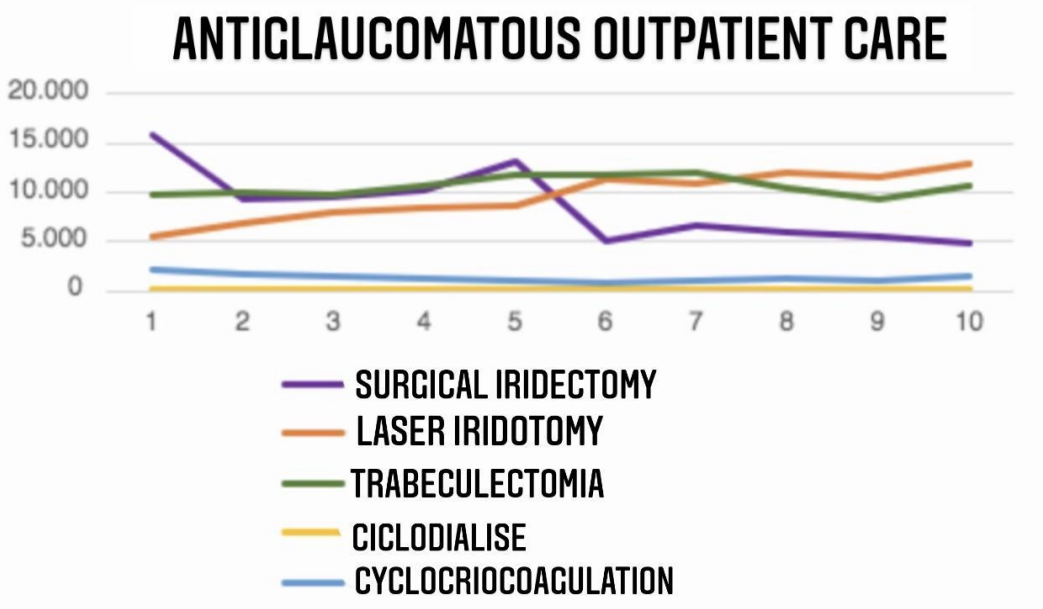

Figure 2: Frequency of antiglaucomatous procedures performed on an outpatient basis, according to the year, in the period between 2010 and 2019 in Brazil, source: DATASUS

The more the disease progresses, the greater the number of eye drops used in the therapeutic regimen, making it more complex and making adherence more difficult. A significant number of patients use a combination of drugs for effective control [15]]. In a survey carried out in the Glaucoma sector at the State University of Campinas [16], 21% of the interviewed individuals revealed that they had abandoned treatment at some point. Difficulty in accessing medicines, due to financial reasons, was identified as the main cause [47.6%], followed by side effects of medications [38.1%] and the lack of visual improvement [9.6%]. Therefore, phototrabeculoplasty, as an alternative to primary therapy, becomes an option.

Population screening for glaucoma is not cost-effective, being indicated only for patients with risk factors: elderly, individuals over 40 years of age and family history of open-angle glaucoma and black individuals [3]. Screening using tonometry is not effective, due to the existence of normal pressure glaucoma, the occurrence of false negatives is significant. Therefore, it is necessary to invest in the population's awareness of the existence of the disease, its strong hereditary component, its irreversible consequences and the great impact that these have on the individual's quality of life. Measures for early diagnosis and appropriate clinical treatment should be strengthened and the population must have access to an ophthalmologist, aiming to reduce adverse results, late diagnosis and the need for surgery, which is not curative and will require strict monitoring.

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