CLINICAL AND EPIDEMIOLOGICAL ASPECTS RELATED TO CORNEAL TRANSPLANT ASPECTOS CLÍNICOS E EPIDEMIOLÓGICOS RELACIONADOS AO TRANSPLANTE DE CÓRNEAS ASPECTOS CLÍNICOS Y EPIDEMIOLÓGICOS RELACIONADOS CON EL TRASPLANTE DE CÓRNEAS

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ABSTRACT

Objective: to make the clinical and epidemiological characterization of corneal transplants performed in the state of Mato Grosso do Sul. **Method:** this is a quantitative, epidemiological, cross-sectional study. A sample of the study will be collected in a census form for all patients in queue, those submitted to corneal transplantation and donors of this type of tissue in the state of Mato Grosso do Sul. Data collection will be performed by means of three instruments elaborated for each distinct population, with the variables of clinical and epidemiological data. Distribution patterns and frequencies as well as measures of central tendency will be statistically established, as well as multivariate analysis with application of magnitude of effect and association, according to the nature of each variable, to be presented in charts and tables. **Expected results:** it is hoped to identify the difficulties found in the state transplant system of corneal aimed at the development of technical concepts, planning and organization of care for waiting users, donors and transplanted patients. **Keywords:** Corneal Transplantation; Corneal Diseases; Biological Tissue Patchwork; Epidemiology; Health services; Eye Banks. **Descriptors:** Corneal Transplantation; Corneal Diseases; Free Tissue Flaps; Epidemiology; Health Services; Eye Banks.

RESUMO

Objetivo: caracterizar epidemiologicamente os transplantes de córneas realizados no estado de Mato Grosso do Sul. **Método:** trata-se de estudo quantitativo, epidemiológico, de desenho transversal. Compõe-se a amostra de estudo de forma censitária por todos os pacientes em fila de espera, os submetidos ao transplante de córneas e os doadores desse tipo de tecido no estado de Mato Grosso do Sul. Realizar-se-á a coleta de dados por meio de três instrumentos elaborados para cada população distinta, com as variáveis de dados clínicos e epidemiológicos. Estabelecer-se-ão estatisticamente os padrões de distribuição e as frequências, bem como as medidas de tendência central, além da análise multivariada com aplicação de medidas de magnitude de efeito e associação, de acordo com a natureza de cada variável, a serem apresentados em forma de gráficos e tabelas. **Resultados esperados:** espera-se identificar as dificuldades encontradas no sistema estadual de transplante de córneas com foco no desenvolvimento de conceitos técnicos, de planejamento e organização do atendimento aos usuários em fila de espera, doadores e transplantados. **Descritores:** Transplante de Córnea; Doenças da Córnea; Retalhos de Tecido Biológico; Epidemiologia; Serviços de Saúde; Bancos de Olhos.

RESUMEN

Objetivo: caracterizar epidemiológicamente los trasplantes de córneas hechos en el estado de Mato Grosso do Sul. **Método:** trata-se de un estudio cuantitativo, epidemiológico, de diseño transversal. La muestra de estudio se compondrá de forma censal por todos los pacientes en cola de espera, los sometidos al trasplante de córneas y los donantes de ese tipo de tejido en el estado de Mato Grosso do Sul. Se realizará la recolección de datos mediante tres instrumentos preparados para cada población distinta, con las variables de datos clínicos y epidemiológicos. Se establecerán estadísticamente los patrones de distribución y las frecuencias, así como las medidas de tendencia central, además del análisis multivariado con aplicación de medidas de magnitud de efecto y asociación, de acuerdo con la naturaleza de cada variable, que deberán presentarse en forma de gráficos y tablas. **Resultados esperados:** se espera identificar las dificultades encontradas en el sistema estatal de trasplante de córneas mirando el desarrollo de conceptos técnicos, de planificación y organización de la atención a los usuarios en cola de espera, los donantes y los trasplantados. **Descriptores:** Trasplante de Córnea; Enfermedades de Córnea; Colgajos Tisulares Libres; Epidemiología; Servicios de Salud; Bancos de Ojos.

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INTRODUCTION

Corneal diseases are considered the main causes of blindness worldwide and transplantation is the main treatment method in these cases. Numerous ethical and legal implications are involved in carrying out transplant procedures in general. However, there are specificities in relation to the corneal structure that allow this type of procedure to be the most performed in the world, with the guarantee of correction of abnormalities in its tissue layers, by replacing the diseased cornea with a healthy one.¹

According to data from the World Health Organization (WHO), 285 million people in the world have some type of visual impairment. There was an increase from 30.6 to 36 million people affected by blindness from 1990 to 2015, and from 159.9 to 216.6 million people affected by some degree of moderate to severe impairment in the same period, mainly due to population growth coupled with increasing life expectancy. It is emphasized that about 80% of all causes of blindness are somehow preventable and curable.^{2,3}

The success of corneal transplantation is associated with the existence of a well-structured and efficient eye bank combined with adequate and skilled number of specialized professionals. On the other hand, inefficient policies along with lack of medical standardization, lack of governmental incentive, and cultural barriers hinder the implementation of preventive and curative strategies for corneal diseases.⁴

Corneal transplantations increased by 83.8% (from 1,018 to 1,871) in the Central-West region in the last eight years, thus achieving a rate of 119.5 transplants per million population (pmp). This placed this region in a prominent position compared to the others, followed by the Southeast with 81.22 procedures, South with 72.3, Northeast with 62.7, and North with 37.3 pmp.⁵

The present study is justified by the lack of scientific production related to corneal transplant procedures in the state of Mato Grosso do Sul (MS). It is necessary that the clinical and epidemiological characterization of the target public be established for the elaboration of indicators necessary for the discussion and guidance at the moment of creating public policies aimed at this service, so that the demands of the system are met.

OBJECTIVE

- To make the clinical and epidemiological characterization of corneal transplants performed in the state of Mato Grosso do Sul.

METHOD

This is a quantitative, epidemiological, cross-sectional, descriptive and analytical study. The

study sample will be selected through a census of all patients in the queue, those submitted to corneal transplantation, and donors of this type of tissue in the state of Mato Grosso do Sul.

The study will be carried out at the State Center of Transplants (SCT) of Mato Grosso do Sul, at the Human Eye Bank of the Santa Casa Hospital of the Beneficent Association of Campo Grande and at São Julião Hospital. Data will be collected from patients' records in the first half of 2019, between January and June, with respect to the procedures performed in a 5-year time period, that is, from January 2014 to December 2018.

The study will include all patients who meet the pre-established criteria, of both sexes, without age limitation, regardless of the clinical condition for registration in the National Transplant System. Patients whose records can not be located or are incomplete, illegible, or present problems in the information necessary to meet the proposed objectives, will be excluded.

Data from secondary sources will be collected, based on patient registration forms for transplantation, donor data sheets in the Human Eye Bank, medical records of patients submitted to the procedure, and data from the National Transplantation System in the Computerized Management System. Three specific instruments will be used to collect these data, one for each distinct population, addressing clinical and epidemiological data.

The data will be tabulated in Microsoft Excel®spreadsheets (version 2016) and statistical analyses of distribution patterns and frequencies, as well as measures of central tendency and multivariate analyses with application of magnitude of effect and association will be made in the Statistical Package for Social Sciences (SPSS) version 22, according to the nature of each variable. Results will be presented in graphs and tables. The significance level of 0.05 will be adopted.

The research protocol approved by the Research Ethics Committee of the Federal University of Mato Grosso do Sul in its ethical and methodological aspects is found under Opinion nº 3,177,423 and CAAE nº 02619618.5.0000.0021, according to Resolution nº 466/2012 of the National Health Council of the Ministry of Health, which approves the guidelines and norms regulating research involving human beings.

EXPECTED RESULTS

It is hoped that this study allow the academic, scientific and professional community to gain knowledge about and use the results to identify the difficulties encountered in the corneal transplant system of the state, aiming at the development of new technical concepts, planning and organization of the care of users in the queue,

donors, and transplanted patients. Likewise, it is expected to stimulate research on the subject and contribute to the training of professionals qualified and skilled for this purpose.

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REFERENCES

1. Frigo AC, Fasolo A, Capuzzo C, Fornea M, Bellucci R, Busin M, et al. Corneal transplantation activity over 7 years: changing trends for indications, patient demographics and surgical techniques from the Corneal Transplant Epidemiological Study (CORTES). *Transplant Proc* [Internet]. 2015 [cited 2018 Mar 03];47(2):528-35. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/25769602>
2. Bourne RRA, Flaxman SR, Braithwaite T, Cicinelli MV, Das A, Jonas JB, et al. Magnitude, temporal trends, and projections of the global prevalence of blindness and distance and near vision impairment: a systematic review and meta-analysis. *Lancet Glob Health* [Internet]. 2017 [cited 2018 Mar 05];5(9):e888-e897. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/28779882>
3. World Health Organization. Universal eye health: a global action plan 2014-2019. WHO Library Cataloguing-in-Publication Data [Internet]. 2013 [cited 2018 Mar 05]. Available from: https://www.who.int/blindness/AP2014_19_English.pdf
4. Pineda R. Corneal Transplantation in the Developing World: Lessons Learned and Meeting the Challenge. *Cornea* [Internet]. 2015 [cited 2018 Mar 08];Suppl10:S35-40. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/26266438>
5. Registro Brasileiro de Transplantes. Dimensionamento dos Transplantes no Brasil e em cada estado (2010-2017) [Internet]. São Paulo: Associação Brasileira de Transplante de Órgãos; 2017 [cited 2018 Mar 12]. Available from: <http://www.abto.org.br/abtov03/Upload/file/RBT/2017/rbt-imprensa-leitura-compressed.pdf>

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