



ARCHIVOS DE LA SOCIEDAD ESPAÑOLA DE OFTALMOLOGÍA

www.elsevier.es/ofthalmologia



Original article

Intraocular pressure control in patients with primary open angle glaucoma and diabetes mellitus[☆]



L.A. Torres-Martínez*, S.F. Lara-Huerta, J.I. Babayán-Mena, S. Herrero-Herrera

Hospital General de México "Dr. Eduardo Liceaga", Servicio de Oftalmología "Dr. Magín Puig Solanes", Mexico City, Mexico

ARTICLE INFO

Article history:

Received 6 October 2014

Accepted 31 October 2015

Available online 28 February 2016

Keywords:

Primary open angle glaucoma

Diabetes mellitus

Intraocular pressure

Drug effects

Analysis

ABSTRACT

Objective: To determine the number of hypotensive drugs required to control the intraocular pressure (IOP) in patients with primary open angle glaucoma (POAG) and diabetes mellitus (DM), as well as describing their demographic characteristics.

Design: Observational, cross-sectional, and descriptive study.

Methods: Twenty-four patients (47 eyes) with definitive diagnosis of DM and POAG were included for a six month follow up, recording demographic data and IOP control.

Results: The mean age was 67.04 ± 8.9 years, and 79% of patients were female. Mean time from diagnosis of DM was 13.87 years, and 6.21 years for POAG. No statistical difference was observed between initial and final visual acuity ($p = 0.49$). There was a statistical difference between initial and final IOP once treatment was started ($p = 0.002$), requiring 1.9 hypotensive drugs ($p < 0.05$). Beta-blockers were the most used hypotensive drugs for the initial (41%), as well as the final IOP control medication (28%).

Conclusion: The mean IOP in patients with DM and POAG was 16.8 mm Hg, with the use of 1.9 hypotensive drugs.

© 2015 Sociedad Española de Oftalmología. Published by Elsevier España, S.L.U. All rights reserved.

Control de la presión intraocular en pacientes con glaucoma primario de ángulo abierto y diabetes mellitus

RESUMEN

Objetivo: Conocer el número de medicamentos empleados para el control de la presión intraocular (PIO) en pacientes con diabetes mellitus (DM) y glaucoma primario de ángulo abierto (GPAA), así como las características demográficas de esta población.

Palabras clave:

Glaucoma primario de ángulo abierto

[☆] Please cite this article as: Torres-Martínez LA, Lara-Huerta SF, Babayán-Mena JI, Herrero-Herrera S. Control de la presión intraocular en pacientes con glaucoma primario de ángulo abierto y diabetes mellitus. Arch Soc Esp Oftalmol. 2016;91:125-129.

* Corresponding author.

E-mail address: draaliciatorres@gmail.com (L.A. Torres-Martínez).

Diabetes mellitus
Presión intraocular
Efecto farmacológico
Análisis

Diseño: Es un estudio observacional, transversal y descriptivo.

Método: Se incluyeron 24 pacientes (47 ojos) con diagnóstico definitivo de DM y GPAA con seguimiento de seis meses, registrando sus características demográficas y control de la PIO. **Resultados:** La edad promedio fue $67,04 \pm 8,9$ y el 79% correspondió al sexo femenino. El tiempo de diagnóstico de DM fue de 13,87 años y 6,21 años para el GPAA. No hubo diferencia estadísticamente significativa en la agudeza visual inicial y final ($p = 0,49$). Después de iniciado el tratamiento hubo diferencia entre la PIO inicial y final ($p = 0,002$), requiriendo 1,9 hipotensores ($p < 0,05$). Los bloqueadores beta fueron el grupo de medicamentos más empleados como parte de su manejo inicial (41%) y final (28%).

Conclusión: El control de la PIO en pacientes con DM y GPAA es de 16,8 mm Hg a expensas del uso de 1,9 hipotensores.

© 2015 Sociedad Española de Oftalmología. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

Diabetes mellitus (DM) is a chronic-degenerative metabolic disease. Worldwide, over 347 million people suffer this disease, which is the main cause of blindness all over the world. Glaucoma is a progressive, multifactorial chronic optical neuropathy characterized by producing apoptosis of retinal ganglion cells causing visual field loss. It is estimated that 66.8 million people in the world have glaucoma, which is the 2nd cause of blindness.¹⁻⁶

Glaucoma is classified as open angle, closed angle and congenital. Primary open angle glaucoma (POAG) is the most frequent type in the Western world. Several risk factors have been identified for this disease, including age over 40, increased intraocular pressure (IOP), myopia and some vascular involvement factors such as DM.⁷⁻¹¹

Several studies have referred to the clinical association between said 2 entities, although the relationship between them is not yet clear.^{2,3,12} It is known that DM causes microvascular damages and several self-regulation disorders in the retina and optic nerve, increasing the susceptibility of ganglion cells to oxidative stress damage in POAG (such as increased IOP).^{8,9,12} Accordingly, it is reasonable to consider that a long duration of DM could be associated to an increased risk of POAG as well as a more negative course due to the difficulty in controlling IOP, which has not been studied. The objective of the present study is to determine IOP control in patients with DM and POAG as well as their demographic characteristics.

The hypothesis of the authors is that the number of medications will be higher than those utilized in patients without said comorbidity to achieve IOP levels under 18 mm Hg.

Materials and methods

An observational, transversal and descriptive study was carried out, selecting patients over 18 who visited the outpatient ophthalmology practice of the General Hospital of Mexico with DM, without proliferative diabetic retinopathy and POAG diagnostic (defined as the presence of glaucomatous optic neuropathy with characteristic changes in the visual

field). The study excluded patients with a secondary cause of hyperglycemia, systemic diseases or medical treatments that diminished intraocular pressure, as well as patients with gonioscopic alterations (angle or iridian neovascularization). The variables measured in the study comprised visual acuity (logMAR), IOP (mm Hg), presence of DM, corneal pachymetry (microns), sex, age (years), hypotensor drugs (prostaglandin analogs, alpha agonists, topical and systemic carbonic anhydrase inhibitors, beta blockers miotics and osmotics) and visual field (decibels [dB]). The patients were examined upon admission, at month 4 and 6, measuring IOP in each visit.

The sample was calculated on the basis of the average estimation formula, assuming a normal distribution in which the difference in Mercury millimeters (mm Hg) should be at least 1 mm Hg, according to IOP control, alpha error of 5% and power of 80%, obtaining 24 patients.

Statistical analysis

A descriptive analysis of the variables obtained with corresponding central tendency and dispersion was carried out. In order to determine the statistical difference of IOP and other numerical variables, the T for student and ANOVA tests were utilized, with repeated measurements. A p value of $p < 0.05$ was considered to be statistically significant.

Results

Overall, 48 eyes of 24 patients were studied with a follow-up of 6 months. All the demographic characteristics are summarized in Table 1. No statistically significant differences were found in these variables with the exception of intraocular pressure and the number of hypotensor drugs. The mean diagnostic time for DM was 13.8 years (± 10.7 years) and for POAG 6.2 years (± 4.8 years). The mean deviation of the visual field and the standard deviation from the mean was of -26.6 dB (± 7.8 dB) and 7.3 dB (± 4.4 dB) respectively. Ultrasound pachymetry was found in an average of 542.5 μm (± 29.2 μm). No statistically significant differences were found in baseline and final visual acuity (Fig. 1), even though the final visual acuity was lower after 6 months from the study. In this regard,

Download English Version:

<https://daneshyari.com/en/article/4008017>

Download Persian Version:

<https://daneshyari.com/article/4008017>

[Daneshyari.com](https://daneshyari.com)