Bevacizumab Regulates the Expression of VEGF in Human Pterygium Pathogenesis
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Introduction
Pterygium is a proliferative, inflammatory and invasive ocular surface disease. Some hypotheses suggested that growth factors may be involved in the pathogenesis of pterygium. Vascular endothelial growth factor (VEGF) is known to participate in tumour vascularization and the isoform 165 is the predominant form of the complex VEGF family. Our aim is to study VEGF expression in human pterygium and normal conjunctiva tissues and to analyse the effect of bevacizumab, a monoclonal antibody against VEGF, in the expression of this growth factor.

Materials and Methods
Specimens of pterygium (n=8) and normal conjunctiva (n=8) were obtained and used for immunohistochemical stains with anti-VEGF antibody and Real Time quantitative transcriptase polymerase chain reaction (qRT-PCR) techniques. Cells from human pterygium and normal conjunctiva were isolated by explantation and placed in culture with Amniomax medium. Once the monolayer was reached the cells were seeded onto 24 well microplates and incubated with bevacizumab [0.1mg/ml] during 48 hours. After incubation qRT-PCR technique was used to analyze the VEGF 165 gene expression.

Results
Increased VEGF expression was observed in the pterygium tissue compared with the normal conjunctiva. In the normal conjunctiva, the greatest expression of VEGF was observed in the area closest to the basal epithelial, while in the pterygium tissue, the staining was observed throughout the subepithelial connective tissue. Levels of mRNA-VEGF165 were significantly higher in pterygium than in conjunctives, showing double expression in pterygium tissues.

In the cell populations obtained from human pterygium mRNA-VEGF165 expression was lower when the cells were incubated with the anti-angiogenic factor.

Conclusions
VEGF overexpression in human pterygium suggests that this angiogenic factor might play a main active role in pterygium pathogenesis and that the use of bevacizumab could be a good therapy for the control of this disease.