

Cellular therapy for intravitreal use in ischemic retinopathy and macular degeneration: A systematic review

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Introduction: In the scenario of eye diseases, diabetic retinopathy and retinal vein occlusion are the two most common ischemic retinopathies in the world. Ischemia is caused by retinal vascular diseases due to decreased blood perfusion and the appearance of areas of retinal non-perfusion. Also, age-related macular degeneration (AMD) is the most common cause of irreversible vision loss in people over 65 years of age in industrialized countries. By 2020 around 200 million people will be affected by AMD worldwide.

Objective: The present systematic review study aimed to highlight the main clinical findings of the treatment of ischemic retinopathy and age-related macular degeneration through cell therapy with bone marrow stem cells.

Methods: The rules of the Systematic Review-PRISMA Platform were followed. The search was carried out from March 2022 to June 2022 in Scopus, PubMed, Science Direct, Scielo and Google Scholar databases. The quality of the studies was based on the GRADE instrument. The risk of bias was analyzed according to the Cochrane instrument.

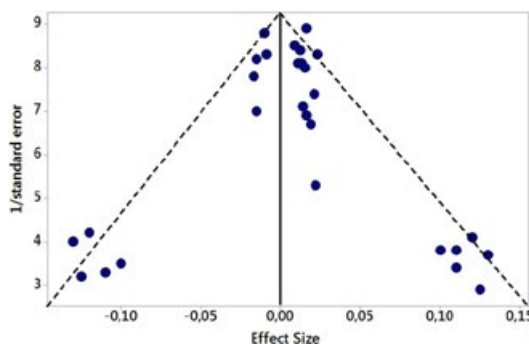


Figure 1: Humphrey automated static perimetry shows incomplete bitemporal hemianopia

Results and Conclusions: It was found 235 articles involving retinitis pigmentosa, macular degeneration, and bone marrow stem cell therapy. A total of 51 were fully evaluated and 28 studies were included and developed in a systematic review in the results field. The symmetrical Funnel Plot does not suggest a risk of bias between the small sample size studies. It was concluded that intravitreal injection of bone marrow-derived stem cells in a patient with retinal vascular occlusion sequelae demonstrated that the procedure is feasible and safe to be

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performed in humans as there were no signs of infection, inflammation or development of intraocular tumor formation. Also, neurotrophic effects correlate with vasculature preservation, suggesting that bone marrow-derived stem cells can be used in the treatment of diseases such as retinal degenerations and vasculopathy that currently lack effective treatment. The authors concluded that stem cells can protect retinal cells from degeneration and also suggested that they were able to replace some types of lost retinal neurons.

Biography

Idiberto José Zotarelli Filho worked at Clinical Unioftal, Brazil, specializing in a wide range of ophthalmic and aesthetic services, offering routine examinations, diagnosis, and treatment of various eye diseases, as well as conducting eye surgeries, eye plastics procedures, and providing advanced aesthetic treatments.

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