Intravitreal administration of lysine-acetylsalicylate could be an effective approach to preserve retinal vessels and to inhibit leukostasis in experimental diabetic retinopathy

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Purpose: We explore the effects of lysine acetylsalicylate intravitreal injections to preserve retinal vessels and to inhibit the presence of leukocytes in early stages of streptozotocin induced diabetic retinopathy in rats.

Setting: Inflammation has a central role in diabetic retinopathy development. Oral administration of acetylsalicylic acid (AAS) has reported therapeutic benefits in experimental diabetic retinopathy but controversial in humans.

Methods: Animals were assigned to two groups (intravitreal lysine acetylsalicylate, untreated control) for comparison in between. Intravitreal injections were administered twice (at the weeks 4 and 8 from diabetes induction). Retinal ganglion cell layer (GCL) and outer plexiform layer (OPL) were analysed at central and peripheral retina sections.

Results: Immunohistochemistry assay revealed a significant preservation of central and peripheral retinal vessels in both layers ($P< 0.001$) and a significant correlation between leukocytes and preserved vessels in the GCL for both central peripheral retina ($P< 0.001$) and in the OPL at the central retina ($P =0.015$).

Conclusions: Intravitreal use of lysine acetylsalicylate has never been reported but its ability to reduce leukocytes and to preserve retinal vessels in early stages of diabetic retinopathy avoiding side effects associated to oral AAS makes it a tool that deserves to be explored.

Speaker Biography

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