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Surgical Innovations in the Treatment of Diabetic Macular Edema and Diabetic Retinopathy.

Berrocal MH(1), Acaba LA(2), Chenworth ML(2).

Author information:

(1)Berrocal and Associates, San Juan Health Center, 150 de Diego Avenue, 4th floor, San Juan, 00940, Puerto Rico. mariaherrocal@hotmail.com.

(2)Berrocal and Associates, San Juan Health Center, 150 de Diego Avenue, 4th floor, San Juan, 00940, Puerto Rico.

PURPOSE OF REVIEW: Diabetic macular edema (DME) and complications of proliferative diabetic retinopathy (PDR) are the primary causes of vision loss in patients with diabetic retinopathy. As the incidence of diabetes increases worldwide, new, cost-effective treatments for DME and PDR will become paramount. Currently, anti-vascular endothelial growth factor (anti-VEGF) medications are considered first-line treatment. However, multiple visits for injections and the economic and time burden they entail make this treatment modality less than ideal. Early vitrectomy as well as depot delivery systems for medications could potentially reduce the treatment burden of patients with diabetes, prevent visual loss, and provide long-term stabilization of retinopathy in patients with diabetes. Newer port delivery systems for anti-VEGF medications could one day make this treatment modality better suited for patients across the globe.

RECENT FINDINGS: Real-world data shows poor compliance with treatment among patients with diabetes. Recent publications show catastrophic results when anti-VEGF treatments are stopped abruptly. The port delivery system for ranibizumab shows maintenance of adequate anti-VEGF levels in the vitreous cavity for many months. Early vitrectomy can provide cost-effective long-term stabilization in eyes with diabetic retinopathy. Microincisional vitrectomy as a treatment for DME and PDR remains controversial and larger trials are needed to definitively prove its superiority over other modalities; however, small-scale data point towards its usefulness in specific populations. Newer port delivery systems of anti-VEGF show promise in decreasing the number of office visits in patients with diabetic retinopathy.

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