INTRACAMERAL INJECTION OF DEXAMETHASONE VERSUS INTRAVITREAL INJECTION OF RANIBIZUMAB IN THE TREATMENT OF DIABETIC MACULAR EDEMA IN PATIENTS UNDERGOING CATARACT SURGERY

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INTRODUCTION

Diabetes mellitus (DM) comprises a group of disorders of carbohydrate and fat metabolism manifesting hyperglycemia. Diabetic retinopathy is a microangiopathy resulting from the chronic effects of the disease, retinal vascular changes dominate the clinical manifestations of disease and are directly implicated in the macular edema and neovascularization that represent the principal causes of vision loss. Cataract develops and progresses more frequently, rapidly, and at an earlier age in patients with diabetes. Diabetic ME seems to be the most common reason of poor visual outcomes in diabetic patients after cataract surgery. Anti-VEGF is the current first-line therapy for CI-DME. Steroids are a suitable treatment option for DME, due to their anti-inflammatory properties. Intracameral dexamethasone injection appears to be an effective and safe practice to be adopted in any diabetic patient undergoing cataract surgery.

AIM OF THE WORK

The aim of the present study was to compare the effect of intracameral dexamethasone 0.4 mg/0.1 ml injection at the conclusion of cataract surgery extraction to diabetic patients with diabetic macular edema on the central macular thickness (calculated by preoperative and postoperative OCT) to the effect of intravitreal Ranibizumab injection at the conclusion of cataract extraction surgery to diabetic patients with diabetic macular edema on the central macular thickness (calculated by preoperative and postoperative OCT).

PATIENTS AND METHODS

A prospective interventional randomized case series was conducted in the main university general hospital. The study was conducted on diabetic patients (type 2 Diabetes Mellitus) above the age of 45 years old. The study included 40 eyes, 20 eyes received intracameral preservative free dexamethasone 0.4mg/0.1ml injection at the conclusion of cataract surgery and 20 eyes received intravitreal injection of Ranibizumab at the conclusion of cataract surgery.
Follow up was done by preoperative OCT and 1 month postoperative OCT, preoperative and postoperative uncorrected visual acuity and preoperative and postoperative best corrected visual acuity.

RESULTS

Table 1: Comparison between the two studied groups according to UCVA in Log Mar

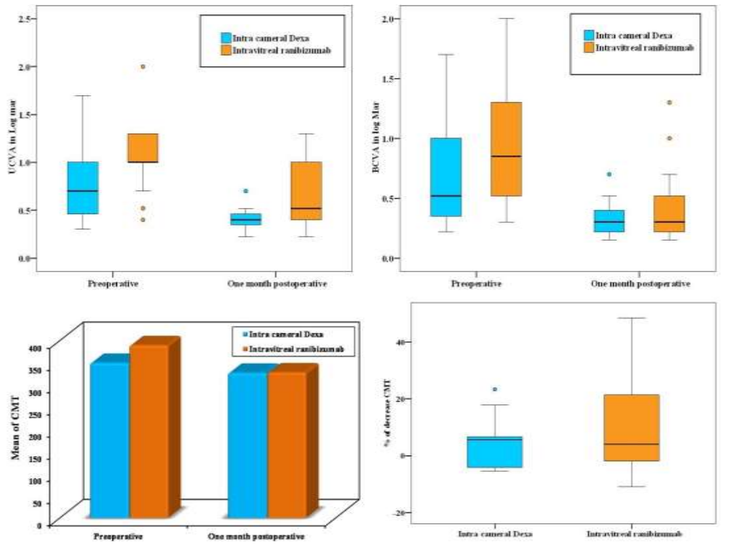
UCVA in Log mar	Group I (n = 20)	Group II (n = 20)	U	p
Preoperative				
Min. – Max.	0.30 – 1.70	0.40 – 2.0	97.00*	0.005*
Median (IQR)	0.70 (0.46 – 1.0)	1.0 (1.0 – 1.30)		
One month postoperative				
Min. – Max.	0.22 – 0.70	0.22 – 1.30	104.0*	0.007*
Median (IQR)	0.40 (0.35 – 0.46)	0.52 (0.40 – 1.0)		
% of change	42.86 (25.8 - 54)	48 (42.5 - 50)	147.0	0.150
p_1	<0.001*	<0.001*		

Table 2: Comparison between the two studied groups according to BCVA in Log Mar

BCVA in Log mar	Group I (n = 20)	Group II (n = 20)	U	p
Preoperative				
Min. – Max.	0.22 – 1.70	0.30 – 2.0	125.0*	0.040*
Median (IQR)	0.52 (0.35 – 1.0)	0.85 (0.52 – 1.30)		
One month postoperative				
Min. – Max.	0.15 – 0.70	0.15 – 1.30	181.50	0.608
Median (IQR)	0.30 (0.22 – 0.40)	0.30 (0.22 – 0.52)		
% of change	53.85 (12.5 – 60.0)	57.42 (45.58 – 67.0)	164.0	0.328
p_1	<0.001*	0.001*		

Table 3: Comparison between the two studied groups according to CMT

CMT	Group I (n = 20)	Group II (n = 20)	Test of sig.	P
Preoperative				
Min. – Max.	300.0 – 488.0	258.0 – 540.0	t=1.333	0.193
Mean ± SD.	349.75 ± 58.44	389.45 ± 119.6		
One month postoperative				
Min. – Max.	280.0 – 374.0	255.0 – 450.0	t=0.054	0.957
Mean ± SD.	327.15 ± 29.83	328.15 ± 76.89		
% of decrease	5.59 (-4.07 – 6.64)	4.07 (-1.92 – 21.48)	U = 166.0	0.358
p_1	0.023*	0.008*		



CONCLUSION

Both intracameral injection of dexamethasone 0.4 mg/0.1 ml at the conclusion of cataract surgery to diabetic patients with diabetic macular edema and intravitreal injection of Ranibizumab at the conclusion of cataract surgery to diabetic patients with diabetic macular edema are safe and effective treatment modalities for management of diabetic macular edema during cataract extraction.