

EFFECT OF PHACOEMULSIFICATION ON SYMPTOMS AND SIGNS OF DRY EYE

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Introduction

Dry eye syndrome, compromises visual quality and may lead to suboptimal refractive outcomes after cataract or corneal refractive surgery. Phacoemulsification significantly alters the tear break-up time, corneal fluorescein staining, tear film pattern and the height of tear meniscus. Some patients with normal tear film may experience dry eye postphaco. The dry eye syndrome can reduce the accuracy of measurements for cataract surgery and may eventually lead to inaccurate IOL calculations. Cataract patients with concomitant DED merit special consideration to prevent worsening existing symptoms and making asymptomatic disease symptomatic. In addition, patients with DED must be properly informed of the risks of dry eye associated with cataract surgery- namely, visual fluctuations and blur. These side effects can cause patients' dissatisfaction postoperatively, especially those who receive multifocal IOLs. It may cause inaccurate axis and magnitude of astigmatism.

Aim of the work

The aim of this study is comparing dry eye disease symptoms and signs in post cataract surgery patients with and without pre-existing dry eye disease

METHODS

A prospective, observational case-control study have been conducted on 60 patients that have been undergone phacoemulsification. Patients were classified into Group A: (30 patients with pre-existing dry eye) Group B: (30 patients without pre-existing dry eye). All cases were subjected to preoperative. All the cases underwent phacoemulsification surgery for cataract removal and dry eye parameters were assessed (symptom's score "OSDI", tear film breakup time "BUT", tear film breakup pattern "BUP", ocular surface fluorescein staining score, Schirmer test) alongside with comprehensive ophthalmological examination including corrected distance visual acuity "CDVA", full history, intraocular pressure assessment using applanation tonometry. Follow up was done at 1st week, 1st month and 3rd month postoperatively with evaluation of the following parameters: (Symptom's score "OSDI", tear film breakup time "BUT", tear film breakup pattern "BUP", ocular surface fluorescein staining score, corrected distance visual acuity "CDVA" and Schirmer test

Results

Table (1) Distribution of studied cases according to dry eye state (n=60)•

Dry eye state	Number	Percentage
Group A "Dry eye group"	30	50%
Group B "Non dry eye "	30	50%

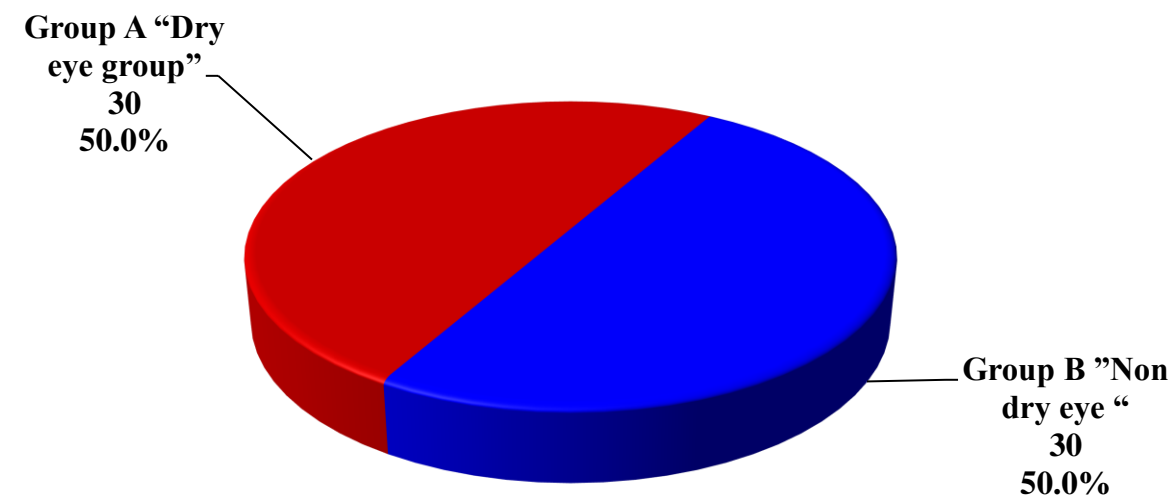
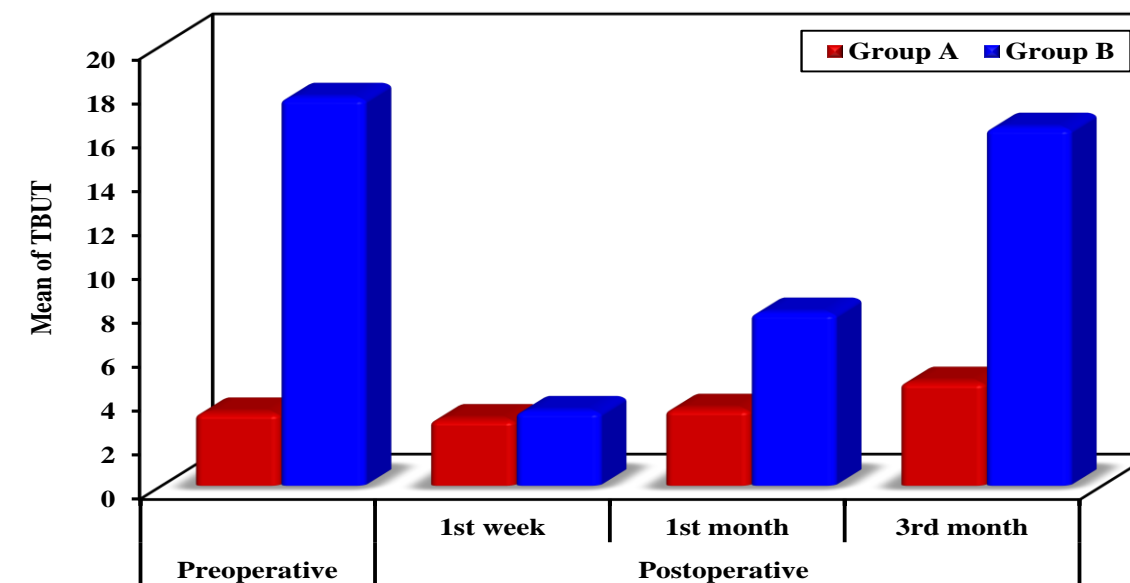


Figure (1): Distribution of studied cases according to dry eye state (n=60)



Figure(2) Comparison between the two studied groups according to TBUT in each period

Table (2) Comparison between the two studied groups according to TBUT in each period

TBUT	Group A (n = 30)	Group B (n = 30)	U	P
Preoperative				
Min. – Max.	5.0–1.0	55.0–6.0	0.0*	<0.001*
Mean ± SD.	1.27±3.33	9.65±17.63		
Median (IQR)	4.0)–3.0 (2.0	20.0)–15.0 (10.0		
1 st week				
Min. – Max.	5.0–1.0	5.0–1.0	390.50	0.364
Mean ± SD.	1.45±3.03	1.30±3.40		
Median (IQR)	4.0)–3.50 (2.0	4.0)–4.0 (3.0		
1 st month				
Min. – Max.	8.0–1.0	17.0–2.0	103.50*	<0.001*
Mean ± SD.	1.59±3.50	3.55±7.87		
Median (IQR)	4.0)–3.0 (2.0	9.0)–7.0 (6.0		
3 rd month				
Min. – Max.	9.0–1.0	36.0–7.0	3.0*	<0.001*
Mean ± SD.	1.60±4.73	6.62±16.27		
Median (IQR)	5.0)–5.0 (4.0	20.0)–15.0 (12.0		

Conclusion

Phacoemulsification is a causative and aggravating factor of dry eye.

Dry eye parameters are showing worsening in the short term period (1st week and 1st month) in both groups with return to preoperative state in dry eye group and normalization by 3rd month in non dry eye group .

Despite improvement of vision post phacoemulsification, patients are still complaining and not satisfied due to dryness in short term period postoperative



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