

# **Role of Nepafenac on changes in Central Macular Thickness in Diabetic eyes undergoing cataract surgery- A prospective comparative study**

**Presenting and Chief Author :**

**Dr Anoop L**

**Regional Institute of Ophthalmology,**

**Minto Ophthalmic Hospital,**

**Bengaluru, India**

## **AIM OF THE STUDY**

**To study the role of pre-operative and post-operative Nepafenac eyedrops on changes in Central Macular Thickness(CMT) in Diabetic eyes undergoing cataract extraction by manual small incision cataract surgery( SICS)**

## METHODOLOG

**A comparative study conducted<sup>Y</sup> from February 2023 to August 2023 in patients attending the outpatient department and inpatients at Minto Ophthalmic Hospital, Regional Institute of Ophthalmology, Bengaluru India where detailed ocular examination was done for Diabetic eyes with cataract. Diabetic retinopathy (DR) was diagnosed according to the ETDRS classification and graded. Total 80 patients constituted the sample size. For all the patients detailed ocular and Fundus evaluation, spectral domain Optical Coherence Tomography was done and central macular thickness(CMT) noted pre-operatively.**

**Following manual SICS the patients were divided into 2 groups of 40 each.**

**Group A: given topical Nepafenac (0.1%) eyedrops along with conventional antibiotic steroid eyedrops.**

**Group B: only conventional antibiotic steroid eyedrops were given.**

**Serial measurement of CMT were noted on Post-operative Day(POD)-7, POD 28 and POD-3 months. Following this statistical analysis was done to note the statistically significant difference if existed**

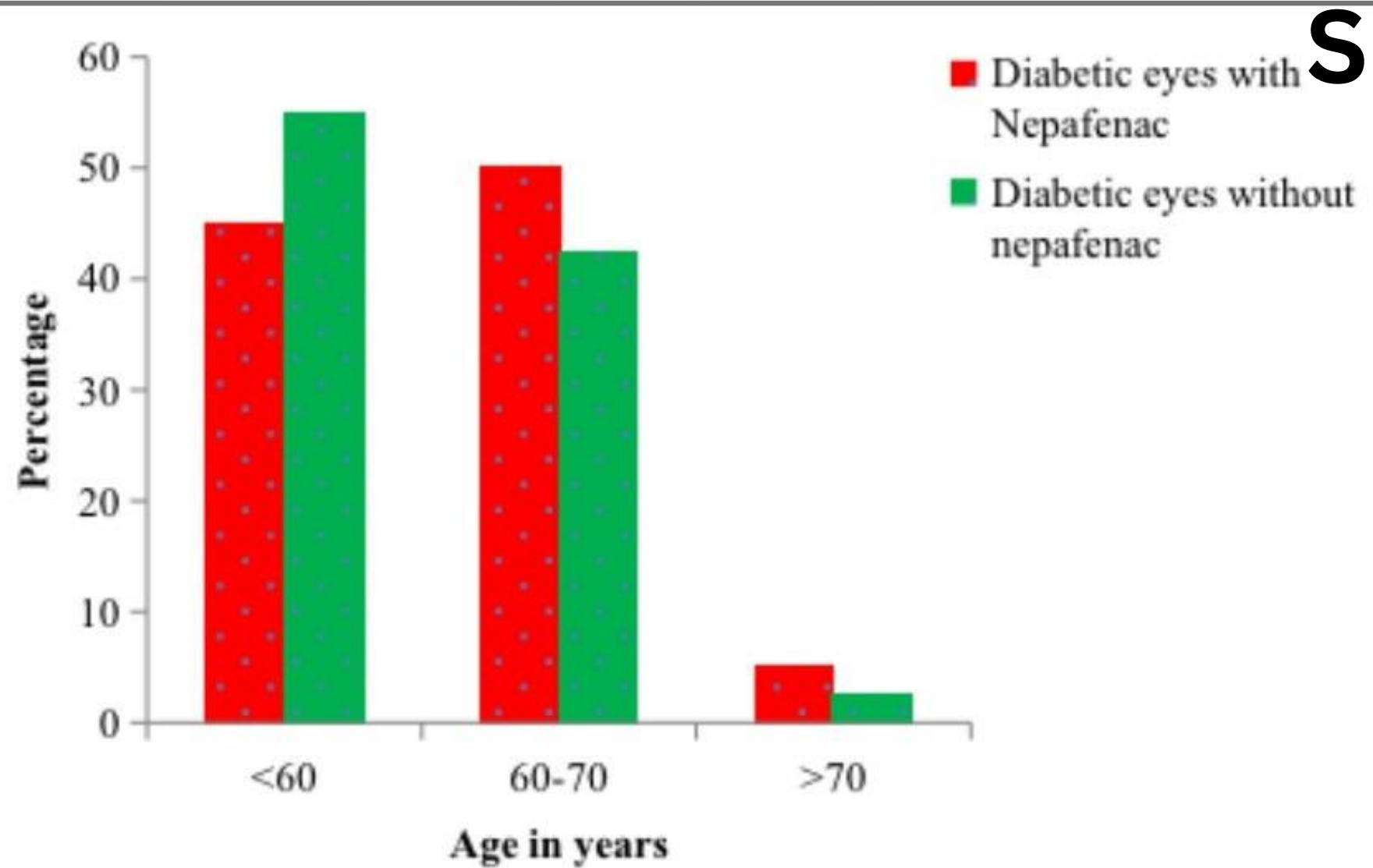
## **Inclusion criteria**

- 1. Age > 18 years**
- 2. Patient willing to give informed consent**
- 3. Visually significant cataractous eyes of diabetic retinopathy patients with clear media**

## **Exclusion criteria**

- 1. Patient not willing to give informed consent**
- 2. Patients with history of previous pan retinal laser photocoagulation**
- 3. Patients with history of intra ocular surgery to the operating eye**
- 4. Patients with Central macular thickness  $>260\mu$  prior to enrolling into study**
- 5. Patients with Severe NPDR, Very Severe NPDR and the PDR**

## RESULT

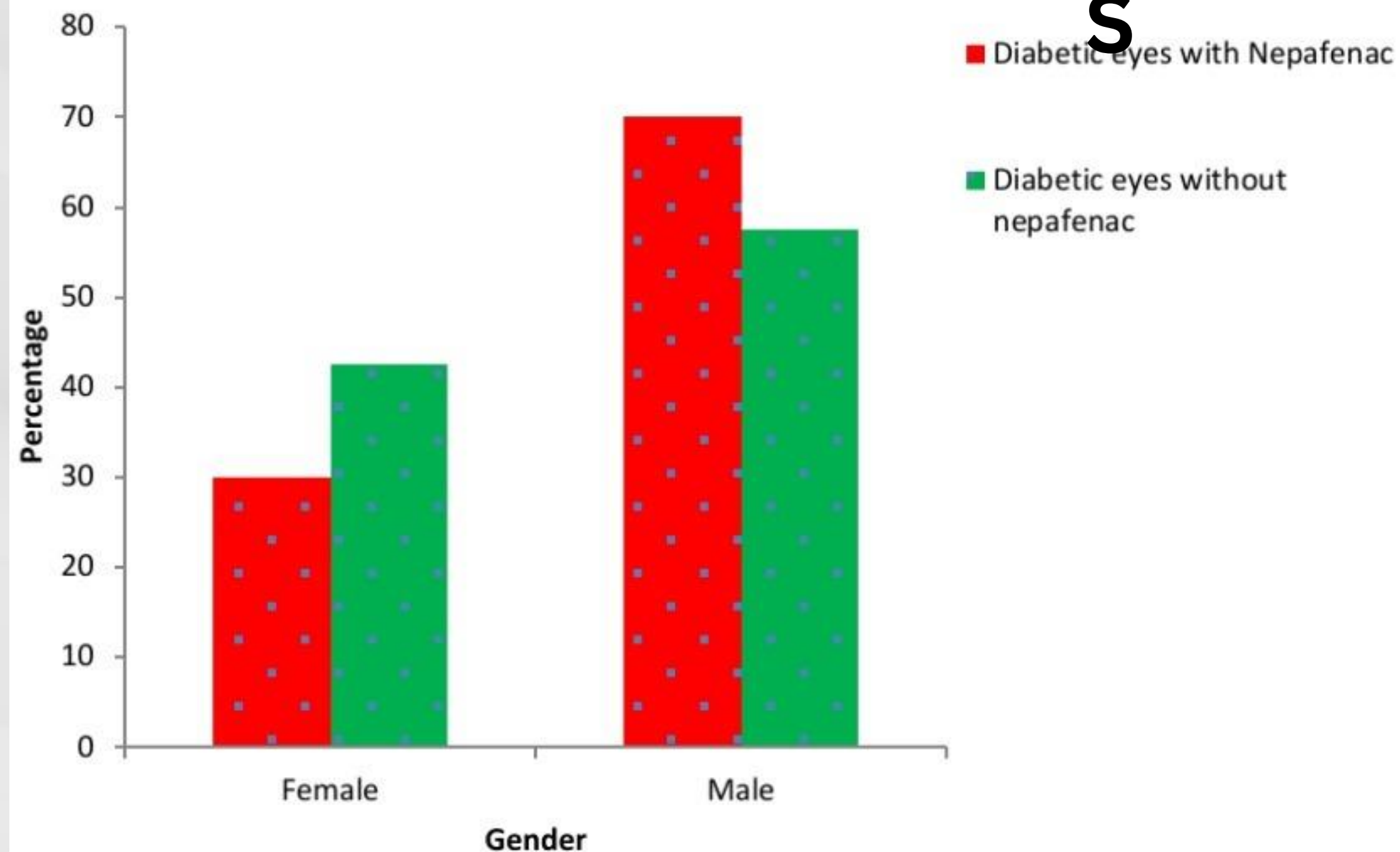


In our study mean age group in Group A was 60.93+/-5.86 years and in Group B 58.53+/-7.41. Difference in the mean age between 2 groups was not statistically significant. Most patients were distributed in the age group of 60-70 years in Group A ( 50%) and <60 years in Group B( 55%).

**Figure 1: Age-frequency distribution between the groups studied.**

## RESULT

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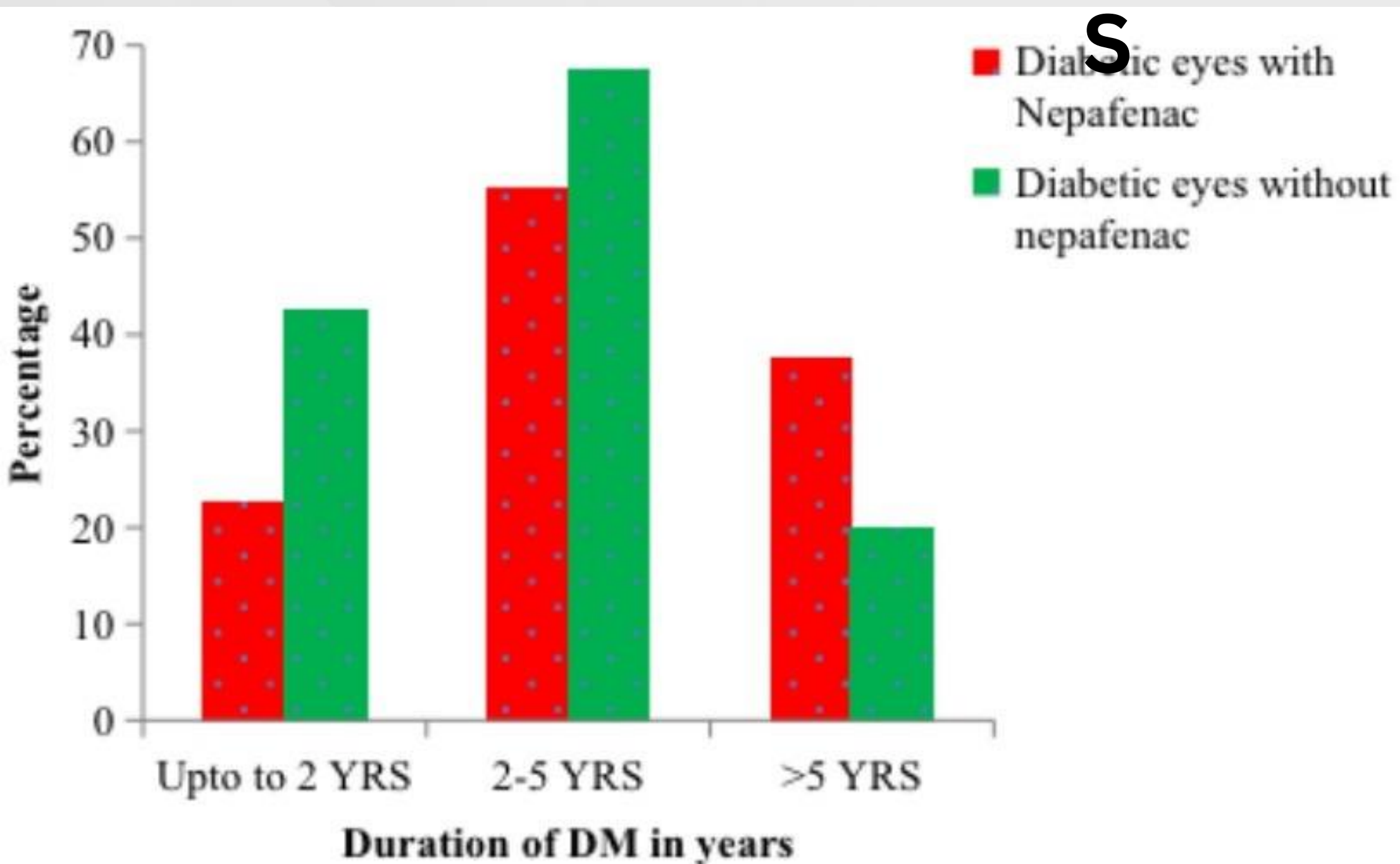


In our study majority of the subjects were males among both groups (Group A: 70% and Group B: 57.5%). No significant difference in gender frequency between 2 groups was seen statistically.

**Figure 2: Gender-frequency distribution between the groups studied.**



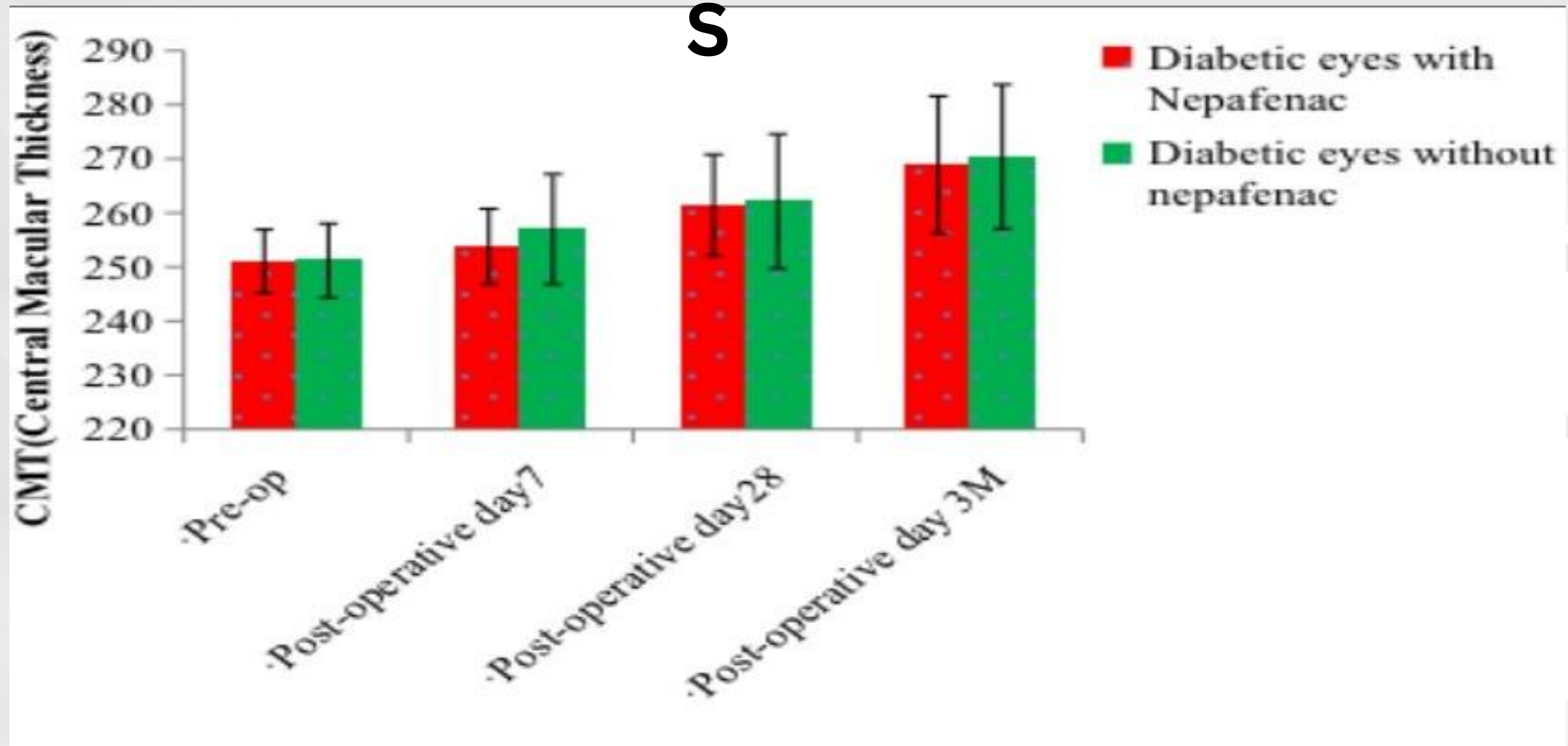
## RESULT



In our study majority of the population were known diabetic for 2 to 5 years in both groups amounting to 55% in Group A and 67.5% in Group B. Mean duration of illness in both groups was 4.83+/-2.53 years in Group A and 3.96+/-2.9 years in Group B. No significant difference existed between the groups in this parameter statistically.

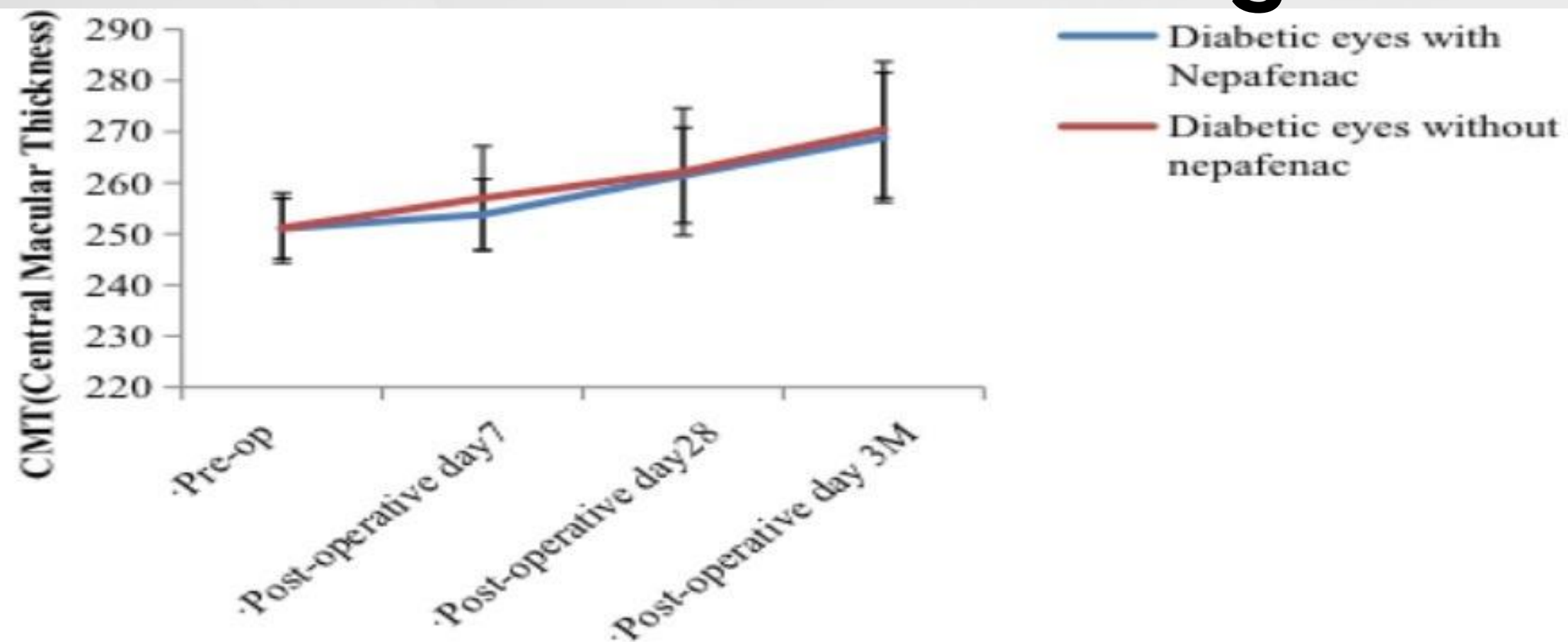
**Figure 3: Duration of diabetes mellitus frequency distribution between the groups studied.**

## RESULT



**Figure 4: Comparative assessment of change in CMT between 2 groups from baseline (Pre-operative CMT)**

# RESULTS



In our study change of CMT from baseline (Pre-operative) at POD-7, POD-28 and POD 3months in Group A were  $2.72 \pm 2.94$ ,  $10.4 \pm 6.52$  and  $17.85 \pm 9.66$  respectively; and in Group B were  $5.82 \pm 7.31$ ,  $10.98 \pm 10.09$  and  $19.23 \pm 11.82$  respectively. No significant difference existed between the two groups in the above parameter statistically.

**Figure 5: Comparative assessment of CMT between 2 groups at Pre-operative, POD-7, POD-28 days and POD-3 months.**

## DISCUSSION

**Cataract constitutes the predominant etiological factor of visual impairment among diabetic patients because the incidence and progression of cataract is increased in Diabetes Mellitus[1]. Diabetic eyes suffer from numerous complications including Cystoid Macular Edema. Cystoid Macular Edema is the most common cause of visual impairment in post-operative period after cataract surgery[2]. It results from the accumulation of fluid in Outer Plexiform Layer and Inner Nuclear Layer of retina with formation of tiny cyst like cavities[3].**

1. Entezari M, Ramezani A, Nikkhah H, Yaseri M. The effect of topical sodium diclofenac on macular thickness in diabetic eyes after phacoemulsification: a randomized controlled trial. *IntOphthalmol*[Internet]. 2016 Mar 14;37(1):13–8.
2. Stock RA, Galvan DK, Godoy R, Bonamigo EL. Comparison of macular thickness by optical coherence tomography measurements after uneventful phacoemulsification using ketorolac tromethamine, nepafenac, vs a control group, preoperatively and postoperatively. *ClinOphthalmol*[Internet]. 2018 Mar;Volume 12:607–611.

## DISCUSSION

**The role of NSAIDs in the treatment and prophylaxis of Pseudophakic CME remains equivocal as there is no unanimous agreeability for their usage. Even though topical NSAIDs have a beneficial role in manifested diabetic macular edema, but in this scenario the role remains questionable.**

**As majority cases of Pseudophakic CME resolves spontaneously, role of additional eye drop to the burden of post-op patient can be avoided.**

## CONCLUSION

**The following conclusions were drawn from the study.**

- a. There is no role of topical NSAIDs given post cataract surgery for prevention of pseudophakic CME**
- b. Combined usage of both topical antibiotic steroid eye drops with topical NSAIDs have no beneficial role in curtailing the central macular thickness and total macular volume rise post cataract surgery in the diabetic eyes.**



# Thank You

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