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A study on contact lences

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ABSTRACT
Contact lenses are one of the popular methods for correction of refractive errors. Rigid gas permeable lenses and soft lenses are the lenses most often seen in current practice. Knowledge and prevalence of contact lens use in India is limited. This study aimed to analyse the prevalence of contact lens users in a tertiary eye care hospital at central Tamilnadu.

Methods: This was a prospective study conducted at the Contact lens clinic at Joseph eye hospital, Tiruchirapalli between January 2010 to April 2010.This study was been approved by the Institutional ethics committee.

All patients attending the clinic with history of contact lens wear were considered for inclusion in the study. Data collected were the indication for contact lens use, refractive error and knowledge about use and care of contact lenses. Patients with keratoconus and pediatric patients were excluded.

All patients underwent a complete ophthalmological examination inclusing recording of visual acuity. Special attention was directed to possible presence of contact lens-induced complications and a detailed history of possible contact lens related symptoms were obtained.

The results were analysed as follows. The demographical data included sex, age distribution, best corrected visual acuity with contact lens, diagnosis, dioptric power and types of contact lens.

Results:This study entitled ”A study on prevalence of Contact lens use” is a prospective study on 36 eyes of 20 patients who attended the Contact lens clinic at Joseph Eye Hospital, Tiruchirapalli between January 2010 to April 2010.

Sex distribution:
Of the 20 patients, 7 (35%) were males and 13 (65%) were females (Table 1: Figure 1).

Age distribution:
There were 8 patients in the age group of 15-20 years (40%), 5 patients in 21-25 years (25%), 3 patients in 26-30 years (15%), one patient each in 31-35 years (5%), 41-45 years (5%), 46-50 years (5%), and 51-55 years (5%) (Table 2: Figure 2).

Best corrected visual acuity with contact lens:
There were 3 eyes with visual acuity in the range of 6/60-6/24 (8.33%), 3 eyes in the range of 6/18-6/9 (8.33%) and 30 eyes with 6/6 visual acuity (83.33%) (Table 3: Figure 3)

Diagnosis:
32 eyes had myopia (88.88%) and two eyes had compound myopic astigmatism (5.55%). One aphakic eye had hypermetropia (2.77%) and one patient came for cosmetic indications (2.77%) (Table 4: Figure 4).Of the 34 eyes, four eyes had anisometropia. Similarly one patient who was hypermetropic due to uniocular aphakia also had anisometropia.

Dioptric power of myopic patients:
There were 12 eyes with the dioptric power of -0.50Dsph to -2.00Dsph (35.3%), 16 eyes with -2.25Dsph to -4.25Dsph (47.05%), 2 eyes with -4.50Dsph to – 6.50Dsph (5.88%), 2eyes with -6.75Dsph to –8.75Dsph (5.88%), 2 eyes with more than -9.00Dsph (5.88%), Among the 20 patients, one patient had dioptric power of -3.00Dsph with -1.00Dcyl in 15° in right eye (2.2%) and in the left eye -2.00Dsph with-2.00Dcyl in 150º (Table 5: Figure 5).

Dioptric power of others:
Cosmetic lens given for one eye had no power (50%). The aphakic eye required t + 11.00Dsph (50%) (Table 6: Figure 6)

Types of contact lens:
Soft contact lenses were fitted for 33 eyes (91.66%), cosmetic lens was given for one eye (2.77%) and 2 eyes were given toric soft lens (5.55%). (Table 7: Figure 7)

Complications:
There were only minimal complications found. Of the 36 eyes fitted with contact lens, 2 patients developed mild keratitis in one eye each (5.55%) and one patient had giant papillary conjunctivitis in both eyes (5.55%). (Table 8: Figure 8).

Discussion: Although recent developments in correction of refractive errors such as LASIK,

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implantable contact lens (ICL), photo refractive keratectomy (PRK) are available, still many patients opt for contact lenses.

Patients have to be more than 18 years for LASIK procedure and also the corneal thickness should be 450µm. When the corneal thickness is less than that patient can undergo PRK or ICL. But the above procedures are costly. Hence only affordable patients can avail them. Moreover PRK gives good results upto -6D whereas LASIK gives good results upto -13D of myopia and -6D of astigmatism. Anterior stromal haze and irregular astigmatism is present after PRK and there is post operative pain. Regression of refractive error is more common in PRK. Irregular astigmatism and interface problems are complications of LASIK. ICL can be done for both myopia and hypermetropia but intraocular inflammation and cataract formation are the complications. Surgical skill is also essential. (Khurana 2008)

In the present study 32 eyes were fitted with myopic soft contact lens and one eye with hypermetropic soft contact lens. Toric soft contact lens was prescribed for two eyes, and one Plano Type D soft cosmetic contact lens was given for a patient with pthysis bulbi.

Of the 36 eyes fitted with contact lens, complications were noted only in three patients. Two patients developed mild keratitis in one eye. One patient had giant papillary conjunctivitis in both eyes which is a common complication encountered with prolonged use of soft contact lens. Appropriate medications were prescribed for all the three patients and the lesions subsided with treatment.

Barry et al (1994) and Flynn et al (2007) reported that the occurrence of corneal abrasion and corneal infiltrates was more in RGP lenses (2.2%) and continuous wear lens (5.7%) respectively. In the present study extended wear lenses were not prescribed for any patient. But two patients with soft contact lens had developed mild keratitis in one eye (5.55%). It is evident from the present study that complications are possible in daily wear soft lens also.

The complications encountered in contact lens use are not very serious when compared to the complications of LASIK, PRK and ICL except for microbial keratitis.

While going through the literature, earlier studies have reported corneal hypoxia, microbial keratitis, changes in the corneal endothelium etc (Bruce 1990). But in the present study, corneal complications were noted only in two eyes (5.55%) and giant papillary conjunctivitis in two eyes (5.55%). The incidence of complications is low in this study when compared to earlier studies. The reason for the same is probably the sample size is small and the contact lenses dispensed for all the patients were daily wear soft contact lens. The effective patient education on care of contact lenses is an added factor for the occurrence of complications in only four of 36 eyes (11%).

Conclusion: This study revealed lack of knowledge regarding use of contact lens and proper care in most patients using contact lenses. Contact lens use was mainly confined to correction of high refractive errors in patients not eligible for refractive surgery. Incidence of complications in the population was low.

This study reveals the merits of contact lenses and the minimal incidence of complications relating to them, thus establishing the importance of a contact lens clinic in every ophthalmic hospital. It is the responsibility of the optometrist to fit the correct contact lens and educate the patient and ensure patient compliance.

SUMMARY

- This study entitled "A study on prevalence of contact lens use" is a prospective study which included 36 eyes of 20 patients who attended the contact lens clinic at Joseph Eye Hospital, Tiruchirapalli, from January 2010 to April 2010.
- There were 7 males and 13 females.
- The age group ranged from 15 years to 55 years with a mean age of 25.8 years.
- The best corrected visual acuity with contact lens was 6/60 to 6/24 in 3 eyes, 6/18 to 6/9 in 3 eyes and 6/6 in 30 eyes.
- 32 eyes were myopic, one aphakic eye was hypermetropic, two eyes had compound myopic astigmatism and one eye had pthysis bulbi.
- The myopic dioptric power ranged from -0.50 Dsph to -15.00 Dsph; hypermetropic correction was +11.00 Dsph; cosmetic lens had no power.
- Soft contact lenses were prescribed for 33 eyes, toric soft lenses for two eyes and one plano Type D cosmetic lens for one eye.
- The complication rate is low in this study. Of the 20 patients, two patients had mild keratitis in one eye and one patient had giant papillary conjunctivitis in both eyes.
- Patients were informed about the care of contact lenses at the time of dispensing.

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PROFORMA
M.R.NO: **DATE:**
NAME:
AGE/SEX:
HISTORY:
OCCUPATION:
COMPLAINTS:
OCULAR EXAMINATION:

	RE	**LE**
VISUAL ACUITY:		
DISTANCE:		
NEAR:		
AUTOREFRACTOMETER:		
DYNAMIC RETINOSCOPY:		
SUBJECTIVE CORRECTION:		
SLIT LAMP EXAMINATION:		
CYCLOPLEGIC TEST:		
SUBJECTIVE CORRECTION:		
FUNDUS EXAMINATION:		
DIAGNOSIS:		
CONTACT LENS POWER:		
CONTACT LENS TYPE:		