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AKUT MİYOKARD İNFARKTÜSÜ VE KALP YETMEZLİĞİ

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ÖZET

172 sinde kalp yetmezliği gelişen ve 373 ünde gelişmeyen 545 AMI'lü hasta retrospektif olarak incelendi. Kalp yetmezliği insidensi % 32 olarak bulundu. Kalp yetmezliği anterior ve transmural yerleşimli MI lülerde diğer yerleşimlilere ve diyabetiklerde diyabetik olmayanlara kıyasla daha fazla bulundu. Kalp yetmezliğinin ortaya çıkışı en fazla hastaneye yatışın ilk 24 saatinde görüldü. Kalp yetmezliğinin ortaya çıkışı ile hastaneye vaşvuru ortalama gecikme süresi arasında bir ilişki görülmedi. Ciddi ritm ve ileti bozuklukları kalp yetmezliklilerde daha sık saptandı. Kalp yetmezlikli grupta mortalite % 38, yetmezliği olmayanlarda % 3.8 bulundu.

Kalp yetmezliğinin AMI nün en ciddi komplikasyonu olduğu görüldü.

Anahtar Kelimeler: Akut miyokard infarktüsü, kalp yetmezliği

SUMMARY

ACUTE MYOCARD INFARCTION AND HEART FAULURE

In this clinical study, we have retrospectively investigated 172 cases with acute myocardial infarction (AMI) and heart failure and 373 case with AMI but no failure. Heart failure incidence in the course of AMI was found to be % 32, and it was more frequently seen in the anterior and transmural localised AMI and in the cases with diabetes mellitus.

Pump failure most frequently appeared in the first 24 hour of hospitalisation and additionally no relation was found between the heart failure apperence and mean delay in applying for hospitalisation. Rhytm and conduction disturbances were seen in the cases with heart failure as compared to those without it. Mortality rate was found to be % 38 in the heart failure group but % 3.8 in the other.

As a result, it is concluded that the most serious complication of AMI appeared to be heart failure

GİRİŞ

Ülkemizde ilk defa 1968 yılında KBÜ leri hizmete girmiştir. MI seyrinde tehlikeli aritmilerin erkenden saptanıp tedavilerinin en kısa zamanda yapılarak mortaliteleri düşürülmek amaçlanmıştır. Fakat MI'nün diğer komp-

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likasyonu olan pompa yetersizliği ve buna bağlı olan ölümlerde önemli bir azalma olmamıştır. Bizde 1983 yılından beri uygulamaya geçirdiğimiz Koroner Bakım Ünitemize yatan MI leri seyrinde kalb yetmezliği görülen hastaları retrospektif olarak inceleyerek diğer merkezlerin sonuçlarıyla kıyasladık ve değerlendirmesini yaptık.

MATERYAL VE METOD

Ekim 1983 tarihinden Nisan 1989 tarihine kadar Trakya Üniversitesi Koroner Bakım Ünitesine (KBÜ) 545 akut miyokard infarktüslü (AMI) hasta yatmıştı. Bunların hastanede yattıkları süredeki dosyaları retrospektif olarak değerlendirilerek 172 sinde kalp yetmezliği olduğu saptandı. Bunların kalp yetmezlikleri Killip (I) e göre değerlendirildi. Kalp yetmezlikli olanlar grup I'i, klinik olarak kalp yetmezliği saptanmayan 373 hasta ise grup II yi oluşturdu.

Her iki grubun ortalama (ort) yaşları, cinsiyetleri, miyokard infarktüsleri nin (MI) yerleşimleri, yineleme sıklıkları, risk faktörlerinden hipertansiyon ve diyabet sıklığı, ritm ve ileti bozuklukları tür ve sıklığı, kalp yetmezliğinin görülme zamanı, ST nin yüksek olduğu ort. derivasyon sayısı (NST) (2), ölüm oranları Chi kare ve Student t testi ile değerlendirilerek $p<0.05$ anlamlı kabul edildi.

BULGULAR

545 hastanın 172 (% 32) si kalp yetmezlikli (grup I), 373 (% 68) ü kalp yetmezlikli olmayan (grup II) dir.

Grup I in ort yaşı 60.6 ∓ 11, grup II nin ort yaşı 57.5 ∓ 11.6 yıldı. Grup I in ort yaşı grup II ninkinden anlamlı derecede fazlaydı ($P<0.01$).

Grup I de 54 (% 31) grup II de 68 (% 18) kadın vardı. Grup I'de kadın anlamlı sayıda fazlaydı ($P<0.001$).

Grup I ve II nin MI lerinin yerleşimi Tablo 1'de görülmektedir.

Transmural MI ü (Q dalgalı MI ü) grup I de 136 (% 88.3), grup II de 293 (% 84.2) olguda görülmüş olup, grup I de daha fazlaydı ($P<0.05$).

Diyabet grup I de 44 (% 25.1) grup II de 51 (% 13.7) olguda saptanmış ve grup I de anlamlı derecede fazlaydı ($P<0.0001$).

Hipertansiyon grup I de 36 (% 20.6), grup II de 74 (% 19.9) olguda vardı ($P>0.05$).

Tablo 1. Grup 1 (kalp yetmezlikli) ve Grup II (kalp yetmezliksiz) nin MI yerleşimleri ve sıklığı

Yerleşim	Grup I		Grup II		P
	Sayı	%	Sayı	%	
Anterior	82	46.8	163	43.7	<0.05
İnferior	47	26.8	112	30	<0.05 inferior
Subendokardial	13	7.4	29	7.8	> 0.05
Birden fazla yerleşim	15	8.6	27	7.2	> 0.05
Yineleyen MI	18	10.3	35	9.4	>0.05

Kalp yetmezlikleri Killip'e göre derecelendirildiğinde: II° de 109, III° de 17, IV° de 49 olgu vardı.

NST grup I de 144 olguda bakılabildi, ort 4.6 ∓ 2.2 sayı, grup II de 310 olguda bakılabildi, ort 4 ∓ 2 sayı bulundu. Grup I de anlamlı derecede fazla idi ($P<0.01$).

Grup I de olguların 28 (% 16.3) ü MI ü öncesinde kalp yetmezlikli idiler. 74 (% 43 ünde hastaneye başvurularının ilk 24 saati içinde, 15 (% 9) inde 2 ve 3. günde, 52 (% 30) unda ise 3. günden sonra kalp yetmezliği gelişmişti.

Kalp yetmezliği gelişen 172 olgunun 26 (% 15) sının ağrının başlangıç zamanı saptanamamıştı. 41 (% 29) i ağrı başlangıcının ilk 3 saati içinde, 105 (% 61) i ise 3 saatten daha geç hastaneye başvurmuşlardı. Grup II de 53 (% 14.2) ünün ağrının başlangıç zamanı saptanamamıştı. 105 (% 28.1) i ağrının başlangıcının ilk 3 saati içinde, 215 (% 57.6) i 3 saatten sonra hastaneye başvurmuşlardı. Her iki grupta erken başvuranlar arasında fark saptanmamıştır.

Grup I ve II nin ritm ve ileti bozukluklarının türleri, sıklık dereceleri Tablo 2 de görülmektedir.

Ölüm Grup I de 66 (% 38), grup II de 14 (% 3.8) olguda görüldü ($P<0.0001$). Grup I de 47 (% 71.2) olguda kalp yetmezliği 41 (kardiyojen şok), 6 (akciğer ödemi), grup II de ise PVF 7 (% 50) olguda ölüm nedenidir. Trombo embolik nedenlerle ölüm daha arka sırada yer almıştı. Tablo 3'te ölüm sebepleri görülmektedir.

Tablo 2. Grup I (kalp yetmezlikli) ve Grup II (kalp yetmezliksiz) de çeşitli ritm ve ileti bozuklukları

Ritm ve ileti bozukluğu türü	Grup I		Grup II		P
	Sayı	%	Sayı	%	
Atriyal fibrilasyon	27	15.4	27	7.2	P<0.001
Atriyal flatter	4	2.2	3	0.8	P>0.05
PAT	6	3.4	13	3.5	P>0.05
VEA	112	64	180	48.2	P<0.0001
Ventrikül taşikardisi	31	17.8	32	8.6	P<0.001
Ventriküler fibrilasyon	27	15.4	19	5.1	P<0.001
Sinüs bradikardisi	21	12	41	11	P>0.05
Sino-atriyal blok	—	—	1	0.3	P>0.5
I° A-V Blok	27	15.4	34	9.1	P<0.01
II° A-V Blok	23	13.1	22	5.9	P<0.001
III° A-V Blok	14	8	16	4.3	P<0.05
A-V Dissosiasyon	1	0.6	5	1.3	P=0.05
RBBB	22	12.6	25	6.7	P<0.01
LBBB	18	10.3	11	2.9	P<0.0001
LAH	15	8.6	19	5.1	P<0.05
LPH	1	0.6	1	0.3	P>0.05

PAT: Paroksismal atriyal taşikardi
VEA: Ventriküler erken atım
RBBB: Sağ dal bloku LBBB: Sol dal bloku
LAH: Sol ön fasikül bloku LPH: Sol arka fasikül bloku

Tablo 3. Grup 1 (kalp yetmezlikli) ve Grup II (kalp yetmezliksiz) nin ölüm sebepleri

Grup I		Grup II	
Neden	Sayı	Neden	Sayı
Kardiyojen şok	41	PVF	7
Akciğer ödemi	6	Ventrikül Taşikardisi	2
PVF	10	İdioventriküler ritm	1
Kalp durması	3	III° A-V Blok	2
Solunum durması	2	Sino-atriyal blok	1
Serebro-pulmoner emboli	3	Solunum durması	1
Toplam	66 % 38	Toplam	14 % 3.8

TARTIŞMA

AMI'ü geçirenlerde kalp yetmezliği insidensini % 32 olarak bulduk. Kalp yetmezliği varlığını ve derecesini Killip'e (1) göre değerlendirdiğimiz için II° ve daha üzerinde olanları kalp yetmezlikli olarak kabul ettik. I° kalp yetmezliklerini kalp yetmezliği grubu içine sokmadık. Aynı zamanda IV° kalp yetmezliği olanların kardiyojen şokta oldukları düşünülürse, bu grup içinde kardiyojen şoklular da vardır.

Berki ve ark (3) şok dışında kalp yetmezliği insidensini % 36.2, Güven (4) % 44, Uçarer (5) ise % 31.4 oranında bulmuşlardır. Kardiyojen şokla birlikte kalp yetmezliği insidensimiz sözü geçen araştırmacıların değerlerinden daha düşüktür.

Kalp yetmezliği kadınlarda erkeklere kıyasla daha fazla idi. Dittrich ve ark (6) nın bulguları da bizimkini destekler niteliktedir. Bunda diyabetin kadınlarda daha sık oluşunun (7) ve MI yaşının erkeklere kıyasla kadınlarda daha yüksek oluşunun (8, 9) veya başka nedenlerin de etkisi olabilir. Nitekim diyabetik infarktüslülerde kalp yetmezliğini daha sık gördük. Bu diğerleri tarafından da desteklenmiştir (10).

Kalp yetmezliklerin yaşlarını kalp yetmezliği olmayanlarınkinden daha yüksek bulduk. Yaşın kalp yetmezliği gelişmesine etkisi olabileceği daha önce ki bir çalışmamızda bildirilmiştir (11).

Kalp yetmezliği görülen anterior yerleşim daha fazla idi. Bu diğer araştırmacıların bulguları ile uyumludur (3, 5, 4, 12). Transmural MI kalp yetmezlikli grupta daha fazla idi. Çalışmamızda kalp yetmezlikli grupta % 7.4 oranında subendokardiyal MI ü vardı. Fakat bu oran yetmezliği olmayan gruptan pek farklı değildi. Birden fazla yerleşimli MI sıklığı da kalp yetmezlikli grupta daha yüksek bulunmadı.

MI öncesi kalp yetmezliği % 16.3 olguda vardı. Kalp yetmezliği, olguların % 43 ünde MI lerinin ilk 24 saatinde, % 30 unda ise 3. günden sonra ortaya çıktı. Domaniç ve ark (12) nın bulgularıda bizim sonuçlarımızla uygundur.

Kalp yetmezliği olanların % 62 si hafif derecede kalp yetmezliği, % 28 i ise ileri derecede kalp yetmezliği olan kardiyojen şoklu idi. Akciğer ödeminin kalp yetmezliği içindeki payı % 10 idi. Domaniç ve ark (12) da bu oranı % 11 olarak bulmuşlardır.

Kalp yetmezliğinin ortaya çıkışı hastaneye başvuru gecikme süresi ile ilgili bulunmadı. Diğer araştırmacılarda ort. gecikme süresi ile kalp yetmezliği sıklığı arasında ilişki bulmamışlardır (12).

Kalp yetmezliğinin ortaya çıkışını elektrokardiyografik infarkt alan genişliği ile ilgili bulduk. Buna karşılık Domaniç ve ark (12) enzimatik MI genişliğini yetmezliği olanlarda olmayanlardan farklı bulmamışlardır.

Ciddi ritm ve ileti bozukluklarını kalp yetmezliklilerde belirgin şekilde fazla buluşumuz, diğer araştırmacıların bulguları ile uyumludur (12).

Ölüm kalp yetmezlikli grupta % 38, kalp yetmezliği olmayan grupta ise % 3.8 oranında bulundu. Kalp yetmezliği ölüm sebepleri içinde % 62 oranla en ön sırada, primer ventriküler fibrilasyon ise % 5 oranla ikinci sırada yer aldı.

Kalp yetmezliği olmayanların ise ölüm nedeni sırası ile ritm ve ileti bozuklukları, bir olguda ise solunum durması idi.

Çalışmamızda da görüldüğü gibi kalp yetmezliği AMI seyrinde erken prognozu kötü yönde etkileyen bir komplikasyondur.

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CORNEAL CURVATURE CHANGES IN PATIENTS USINN HARD CONTACT LENSES*

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SUMMARY

Radius of curvatures of patients' corneas, using Hard Contact Lenses (HCL) who stopped using them for a period of time, have been measured at predetermined intervals. The results have been compared with the keratometer values that were recorded before the patients first started using HCL evaluations were made of the measurements of cornea curvature that were taken during the interval time, when patients stopped using temporarily.

Key Words: corneal curvature changes, hard contact lenses.

INTRODUCTION

Physiological curvature changes in corneas of many patients using HCL, have been observed and published by many authors (1, 2, 3, 4, 5, 6, 7). These changes can be put together into two groups (3):

1. *Physiological curvature changes:* This group of change occurs within first one or two hours after the lens has been used. One can observe this change during the lens is placed. It is seen in 75–85 % of HCL users.
2. *Pathologic curvature-changes:* These changes can be seen in two stages:
   a) Acute Changes: Aetiology is not known and seen very seldom. Patients using HCL for a long time without any symptom, appear with severe ache and redness in the eye. İt is cured quickly when the lenses are taken off.
   b) Sub-acute changes: It is a curvature change that is seen frequently sometimes during the first CL trial but also mostly, with patients, who have been using them for a long time without any problem. Clinicall it is identified as intolerance while keratometric examination of cornea curvature is seen to be on the limits of pathologic limits.

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Alternatively Pratt (1) divided these changes into two groups:

1. Molding (As a passive change)
2. Corneal edema

Many authors studied on curvature changes, that was associated with corneal edema, after the CL was taken off immediately (1, 3, 5). Some authors studied curvature changes, that occured one or two days after the lens was taken off (4, 8).

Our study is about the curvature changes, that during the whole week occurs, after the lens was taken off. We wanted to draw the profile of the changes during the whole week.

MATERİAL and METHODS

We have studied curvature changes associated with CL on the patients wearing TİTMUS EUROCON PERSECON E Elliptic hard lenses. Table 1 and 2 indicate the distribution of patients' sex, mean ages and the duration duration of CL wearing.

All patients, under control were wearing CL whole day.

Measurements were taken by the same person, using Carl-Zeiss Keratometer on the 1st, 3rd, 5th. 7th days after the lens was taken off.

Table 1. Distribution of patients sex and mean ages

15 women 4 men
19 patients (38 eyes) (mean 24.5 ∓ 10.1)

Table 2. Duration of CL wearing

3–120 months (mean 30.8 ∓ 30.6)

RESULTS

In Table 3, the curvature changes in the horizontal axis have been shown. It is observed, that by curvature changes along the horizontal axis, as measured with the keratometer, were no significant difference between the values before the lenses were fitted and after the lens were taken off, following the 1st, 3rd, 5th and 7th days.

The vertical curvatures are shown on Table 4. The values at the first day, after the CL were taken off, were compared with the values before CL

were fitted and it was found that the curvatures were flatten. However, after the 5th day, the curvatures started to approach to the values, before CL were fitted.

Upon statistical analysis of the values recorded on the 7th day and the valuer before CL were fitted, there was no significant difference.

Table 3. Distribution of the horizontal corneal curvatures, before CL wearing and after CL removing.

HORIZONTAL AXIS Time	mean radius of curvature (mm)
Before CL wearing ...	7.39
After CL removing	
Ist day	8.01
3rd day	8.00
5th day	7.99
7 th day	8.01

Table 4. Distribution of the vertical corneal curvatures, before CL wearing and after CL removing.

VERTICAL AXIS Measuring time	mean radius of curvature (mm)
Before CL wearing	7.60
After CL removing	
1st day	7.75
3rd day	7.70
5 th day	7.71
7th day	7.65

DISCUSSION

Various authors came to the conclusion, that the changes in curvature occured as a result of wearing CL, caused problems in using lenses. When a difference was found in the keratometric measurements, after the CL was taken off, they suggested to use a new CL (1, 5, 8). But as our study shows, the values on vertical corneal curvature starts to take the original shape after the 3rd day, and after the 7th day, these is no statistical significant difference.

Since the use of CL can be the cause of a mild corneal edema, in some studies, measurements of the curvatures have been taken, right after CL were removed, and has been found steepness of the curvatures (1, 4, 8).

The others took measurements on patients' corneal curvature, who took of their CL one or two days after using them, found flattening of the curvature (5, 7).

Since it was our aim to study the mechanical effect of CL on the corneal curvature, we get the first measurement one day after CL was taken off and continued to do so, at two days intervals.

The flattness that we had found after the 1st day, confirms to the findings in the literature (1, 5, 7). But we had not found any study, that indicates, how long this flatness remains and consequently could not compare our findings seven dys after the CL was removed.

CONCLUSION

Our study shows that:

1. After wearing HCL, no significant change of corneal curvature along horizontal axis occurs,
2. At the end of 24 hours, after the CL was taken off, a significant flatness along the vertical axis occurs,
3. After 5 days, the vertical corneal curvature returns to the value, recorded before the CL was fitted.

In the light of these results, the authors concluded that, before fitting a new CL to a patient who has been using a HCL, an interval of at least one week should pass for the normalizing of the corneal curvature.

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THE FITTING CHARACTERISTICS OF ELLIPTIC CAB LENSES AND ITS RESULTS*

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SUMMARY

144 Elliptic CAB lenses and 7 keratoconus lenses were fitted to the eyes of 84 patients of ages between 8 and 58 years.

Although the results obtained from the patients' eyes having normal spheric corneas were successful, on eyes of patients with high degree of astigmatism in the course of time, some lenses were either immersing into the conjunctiva or were not tolerated and consequently the patient started back to use glasses.

In all cases under study no complication with sequella was observed.

Key Words: Elliptic CAB lenses, fitting charachteristics

INTRODUCTION

Studies made in recent years show that the topography of cornea is not exactly spheric and its becames elliptic toward the periphery (1, 2, 3, 4).

It is observed that by taking measurements only from the center of cornea and calculating the radius of the curvature using known formulas and fitting thus hard contact lenses (CL) caused some complications in cornea.

This problems forced some researchers to design and manufacture hard CL with elliptic shape on the back surfaces.

The optimal conformity of the CL with the cornea made the eye-tear film to spread evenly, thus making it possible to have an ideal application on normal corneas (1).

The advantages of elliptic CAB CL against soft CL is that, vision is especially better with corneal astigmatism, also elliptic CAB lenses do not absorb the desinfection solutions, consequently allergic and toxic reactions are less encountered, and also the life of the CL is lenghthened (5).

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In our study, we evaluated the properties by using elliptical hard contact lenses (HCL) and complications encountered on the patients.

MATERIAL and METHOD

Our materials were 84 patients' (33 men, 51 women) 151 eyes. The types of refractive errors are shown on Table 1.

Table 1. Types of Refractive Errors

Type of Refractive Error	Number of eyes
Myopia	70
Hiperopia	9
Myopic astigmatism	41
Hyperopic astigmatism	3
Mixed astigmatism	9
Keratoconus	16
İrregular astigmatism	3
Total	151

Before the CL was fitted, Schirmer test was done and the radius of curvature was measured by the keratometer.

We observed the subjective complaints and objective findings of the patients during the course of follow-up, after the lenses were fitted.

The radius of the CL fitted was compared with the corneal curvature which was flatter. In statistical calculations t-test was used.

RESULTS

The type of 151 lenses that were fitted on 84 paitents were 144 Persecon Elliptic (PE-Titmus-Eurocon) and 7 Persecon Elliptic Keratoconus (PEK-Titmus-Eurocon).

The cases were divided into two groups according to the corneal astigmatism:

1. Those having a difference in radius of curvature of less than 0.30 mm between the vertical and horizontal axes.

2. Those having the difference of 0.30 mm. or above.

Figure 1 indicates the difference between the radius of the lens used and the flattest curvature of the cornea in group 1 above.

Figure 2 indicates the same procedure applied to group 2 above.

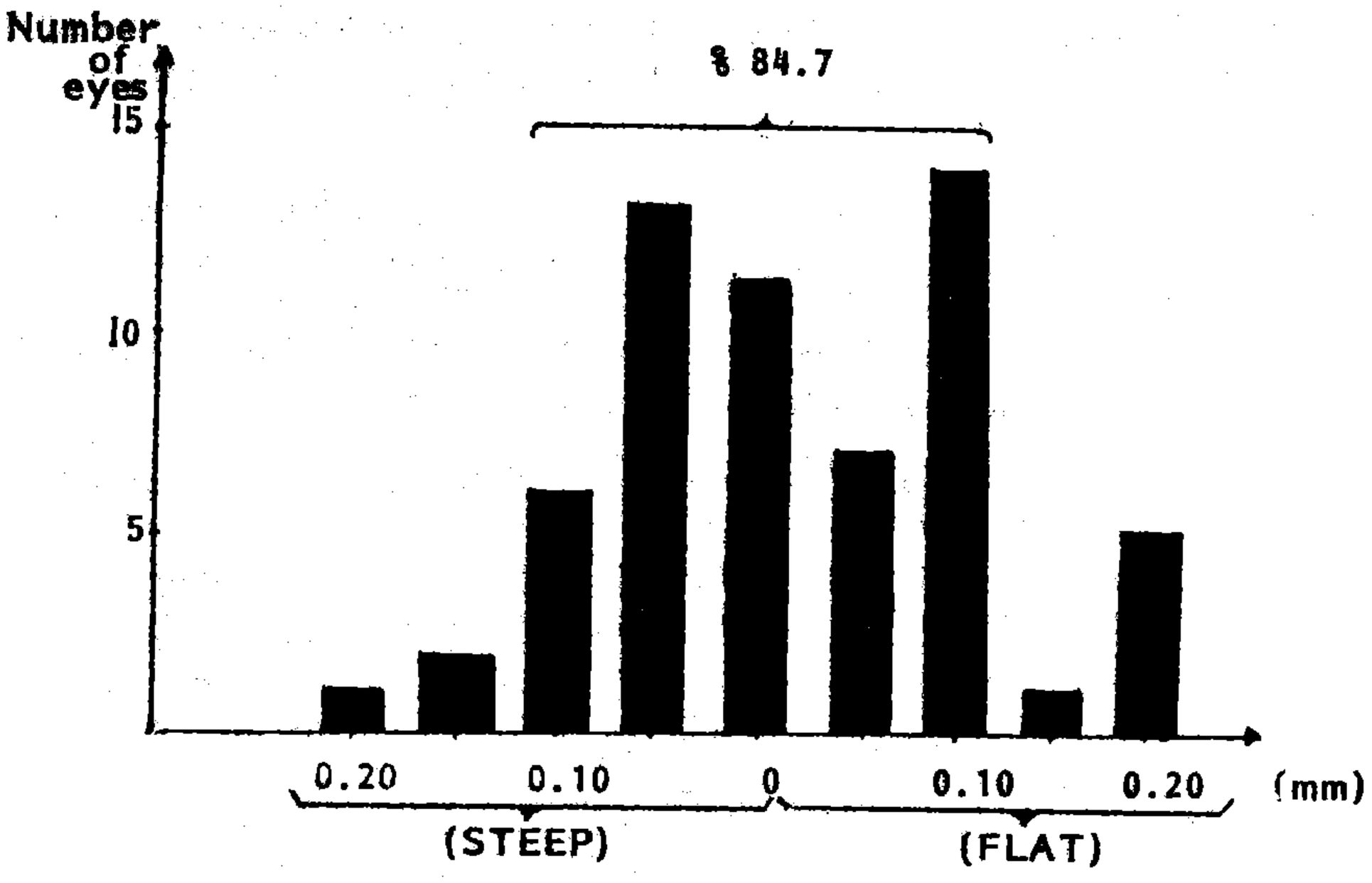

Figure 1. Distribution of the difference between the radius of the contact lens used and the flattest curvature of the cornea in Group 1.

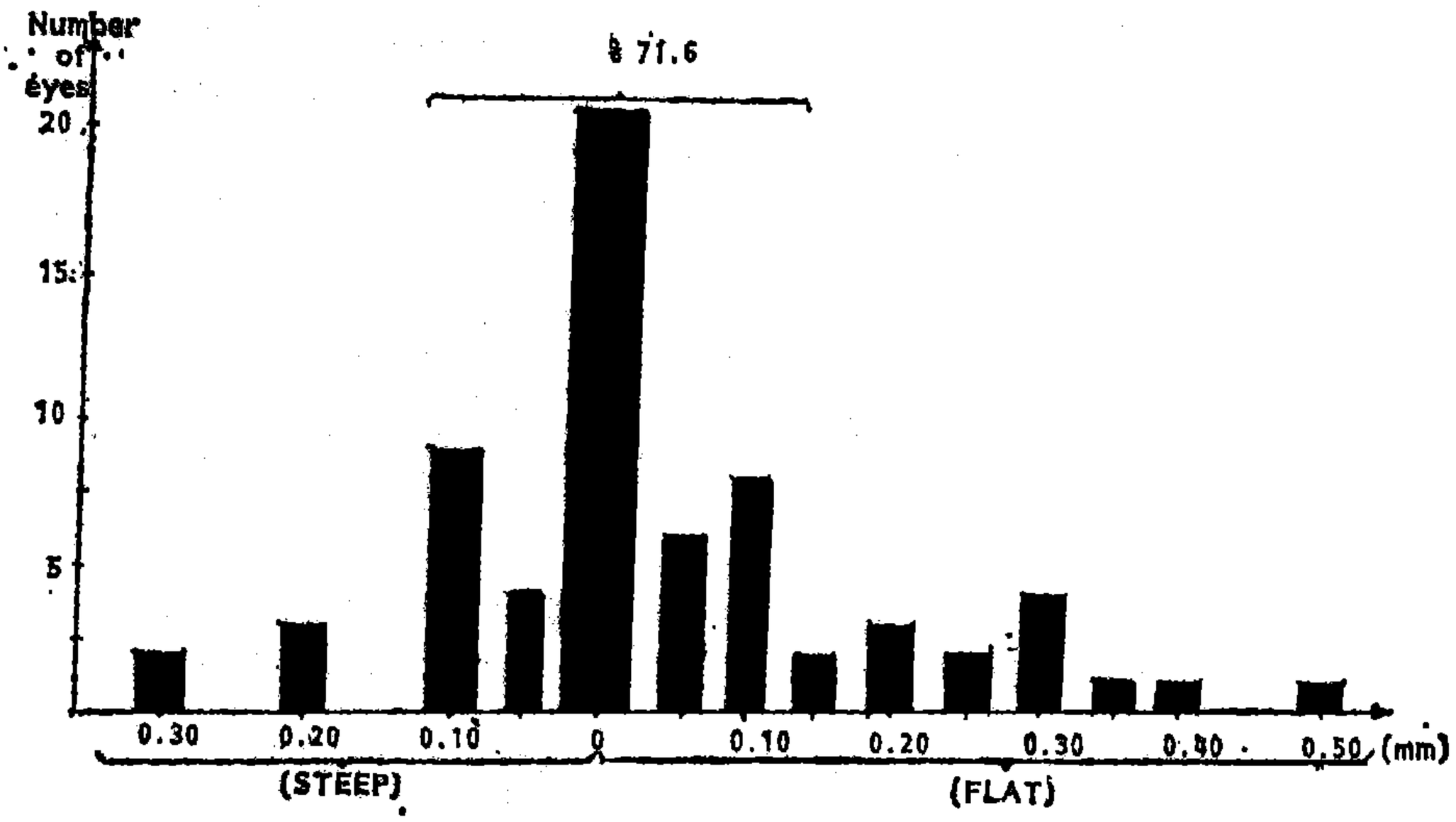

Figure 2. Distribution of the difference between the radius of the contact lens used and the flattest curvature of the cornea in Group 2.

In 84.7 % of the cases in the first group the difference between the radius of the CL and the flattest curvature of the cornea were not more than 0.10 mm. The same values in the second group with greater astigmatism were 71.6 %.

The results obtained from the 7 eyes using Elliptic Keratoconus Lenses (PEK) were very satisfactory and no commplications were seen.

After the adaptation period, no subjective complaints were seen, except eye-burning, lacrimation, irritation from time to time.

Table 2 shows the objective findings during the routine controls.

Table 2. Distribution of the objective findings and the mean follow-up tipe.

Objective fondings	n	Follow-up time (month)
Papillary conjunctivitis (Gr 2)	1 case (% 1.2)	7
Corneal erosion	4 eyes (% 2.65)	1.3∓1.8
Punctate keratitis	4 eyes (% 2.65)	1.3∓1.8
Solution allergy	1 case (% 1.2)	2

In 6 CL, we observed protein deposits in 2–6 months (mean 4.0 + 1.6) which were easily cleaned with protein cleaning solution.

In 12 eyes of 8 cases we met with the "tight lens" syndrome during the period of one week to 5 months (mean 1.3 + 1.0 months) Upon examination of these 12 eyes and measuring the difference in radii of curvature (before lens fitting) between the vertical and horizontal axes, we found corneas in 2 eyes (16.7 %) normal, 6 eyes (50 %) moderate toric, 4 eyes (33.3 %) advanced toric (Table 3).

Table 3. Distribution of the difference between vertical and horizontal curvatures

Difference	0.1–0.3	0.2–0.5	0.5	Total
Number of eyes	2 (% 16.7)	6 (%50)	4 (% 33.3)	12 (% 100)

7 cases gave up using lenses between 1.5–8 months (mean 4.93 + 2.49). The characteristics of these cases are shown on Table 4.

Table 4. Distribution of the reasons of CL discontinuation.

	Number of eyes
Advanced toric corneas	5
Pinguecula	1
Keratoconus	1

DISCUSSION

The use of conventional HCL is calculated according to the formula

$$R = \frac{R1 + R2}{2} + (e)$$

(R1, R2 are radii of cornea, "e" is a standart empirical value)

But on the application of elliptic HCL, the first trial lens is selected according to the flattest central corneal curvature (1, 6, 7). It is decided by examining the flourescein pattern. The topography of cornea having high degree of astigmatism is much different than the topography of a spheric cornea. Although there may be some specific properties for different people it is known that spheric corneas flattens toward the periphery taking an elliptic form very close to the standard geometrical shape (3, 4). On the other hand the topography in the advanced astigmatism is very complicated and the use of HCL are difficult. When the cases are divided into two groups, i.e., those having no and mild astigmatism and those having advenced astigmatism, the properties of application were significantly different from each other. When the relationship between radii of the lenses fitted to the patients having high degree of astigmatism, and the flattest curvature of corneas studied, (Fig. 2), high degrees of deviations were observed. But in the group having spheric corneas no such deviations are encountered (Fig. 1).

The use of elliptical CAB CL on corneas having above 2 dioptre are less successful with HCL (8). The use of elliptic CAB CL on corneas having more than 0.5 mm difference between the radius of curvature, is difficult (1).

We encountered a syndrome, which is similar to the syndrome seen with soft CL as "tight lens" in eyes of 8 cases during the time interval of one week to 5 months. When examined biomicroscopically, we found that the CL was immersed partielly in conjunctiva and partially on the upper half of cornea. The CL was fixed and it was seen that a mucoid secretion was gathered in between. The most significant point that differed this condition from the "Tight lens" syndrome caused by soft CL was, that the patients had no subjective complaints.

When 12 eyes of "tight lens" syndrome cases' properties were examined, we found that 83.3 % of them had toric corneas with moderate or high degrees.

Although it is claimed that for patients having high degree of astigmatism, toric soft lenses give more successfull results (8), high cost of these lenses prevented us from insisting to use them. In the steep lens cases, the use of a flatter lens solved the problem satisfactorily.

7 cases started back to use glasses because they claimed that lenses were not comfortable. It called the attention that 5 of these 7 cases had high degree of astigmatism.

Subjective complaints and objective findings are seldom met among the patients using HCL (8, 9).

In the majority of cases, even at the early hours of application, the adaptation were very easy. No subjective complaints were made after the adaptation period was over.

Giant papiller conjunctivitis (GPC), which is accepted as the immunologic reaction of the lymphoid tissue on the upper lid caused by allergic materials deposited on the CL (10), are seen 1–5 % of patients using HCL. Age and sex is not a factor. The beginning point of such disturbance can be a few weeks or years after CL is applied (9). In one case (1.2 %) during our study, GPC was observed.

Among complications of the cornea caused by HCL, there are superficial punctate keratitis, erosion (8, 9). corneal ulcus (8, 9, 11). During our study we observed erosion in 4 eyes and punctate keratitis in 4 eyes (mean 1.3 months). One of the punctate keratitis was seen as "3–9 staining" at the horizontal meridian of cornea. In our stduy a low (1.2 %) appearance of such complications shows that the elliptical CL conforms better to the topography of cornea and causes the eye-tear film to evenly spread.

Also, since this complication is encountered more in hot and dry climates, a further reason of our good results can be mild and humid climate prevailing in our location.

No corneal ulcers were found among our patients.

Corneal neovacsularization and pannus belong to the corneal complications (8, 9, 10). When a neovascularization passes the limbus about 2 mm, it is necessary to cure it immediately. In our cases no vascularization were observed.

The most important complication according to the CL is protein deposits (8, 9). During our study in 6 CL (3.9 %) between 2–6 months (mean 4.0 + 1.6) time interval we hawe seen protein deposits. They disappeared after enzymatic cleaning and it was not necessary to change the CL.

RESULTS

The use of elliptic CAB CL on corneas having spheric topographie and slight astigmatism is easy and successful.

On eyes having high degree of astigmatism, fitting is difficult. Risk of steep fitting is high in this patients.

Adaptation with elliptic lenses is easy, complications due to the eye and lens are at a minimal level.

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