SUMMARY AND CONCLUSION

Studies of the human tear film changes accompanying soft contact lens wear provides important information which may be the clue in solving some of the problems met with the use of these lenses.

The aim of our study was to detect some of the biochemical tear film changes occurring in soft contact lens wearers, and to evaluate any influence caused by the use of these lenses on tear calcium, protein and IgA concentrations. These three components of tear film were chosen as they are asserted to be important contributors in soft lens spoilage and ocular complications.

One hundred and two phakic cases (165 eyes) were studied. Both sexes with different age groups were included. Subjects were divided into four groups as follows:

Group I: (Control group) Normal non-contact lens wearers.

Group II: New daily and extended soft lens wearers.

Group III: Asymptomatic daily and extended soft lens wearers for more than a year.

Group IV: Symptomatic daily and extended soft lens wearers for more than a year and having GPC and/or contact lens deposits.

Stimulated tear samples were collected from the subjects and analysed. Two samples were analysed for the new soft contact lens wearers (group II), to evaluate tear tear calcium, protein and IgA concentrations before and six months after lens wear. A colorimetric technique was used for tear calcium and protein estimation. IgA concentration was determined by a radial immunodiffusion method.

Mean tear calcium, protein and IgA values in tears of normal Egyptian subjects are : 1.84 ±0.29 mg/dl; 663.2 ±170.3 mg/dl; and 16.3 ±3.9 mg/dl respectively. These values are not affected by sex differences. Only tear protein values were found to decrease with increasing age.

In the newly extended soft contact lens wearers, both calcium and total protein values in tears were increased. A significant difference in the values of the three tear components studied was noticed between the daily and extended soft lens wearers.

In the asymptomatic soft lens wearers for more than a year, a significant increase in the concentrations of tear calcium, protein and IgA in tears of extended soft lens wearers was noticed.

IgA levels in tears of asymptomatic daily S.C.L wearers showed a significant decrease.

In the symptomatic soft lens wearers for more than a year, the three components of tears studied showed a significant increase which was more pronounced in extended lens wearers.

We think that E.W.S.C.L use on an extended wear schedule influence the lacrimal gland to secrete more calcium, protein and IgA in tears. These components are entrapped and deposited on the lens surface, changing its physical characters and leading to conjunctival and corneal reactions. These reactions leads to congestion of the vessels which may leak, so more calcium, protein and IgA are added to tears, and a vicious circle starts.

It can be concluded from this study that calcium, total protein and IgA levels in tears are affected by soft contact lens wear, and it was evident that these components do increase with the extended wear lens use more than the daily wear lens use. The length of soft lens use did not affect the levels of tear components studied.