Abstract

Background & Objective: Keratoconus is a progressive disease that usually occurs in adolescence and the second decade of life. In this disease, the cornea becomes thin, and asymmetric in the central part, and becomes conical. The aim of this study was to evaluate the extent of corneal apex displacement, anterior chamber dimensions and anterior chamber angle in the keratoconic eyes.

Methods: In this retrospective cross-sectional study, 120 patients in two groups with well diagnosed and suspected keratoconus were studied. Using the Pentacam device according to the principles of working with the Pentacam device and software, the values of the anterior chamber parameters including the thinnest corneal thickness (TCT), anterior chamber depth (ACD), corneal volume (CV), anterior chamber angle (ACA), anterior chamber volume (ACV) and apex and pupil center pachy metry have been evaluated and recorded in the patients. (ACD{Internal}=anterior chamber depth,from anterior side of lens to corneal endothelium)Patients with keratoconus were divided into three groups: mild KC (K less than 47 diopters), moderate KCN (mean K between 47 to 52 diopters) and severe KC (K above 52 diopters) based on the mean keratometry (K) obtained from Pentacam. the values obtained for each of the above parameters were compared in patients with different stages of the keratoconus and patients with the suspected keratoconus

Results: In the group of patients with keratoconus, 34 cases were mild, 18 cases were moderate, and 8 cases were severe.

48.3% of patients were male.The mean age of patients in the keratoconus and s uspected keratoconus were 42.08± 11.03 and 42.55± 13.84 years respectively. The mean ACD in all patients with keratoconus was 3.30**±**0.30 mm. The mean difference of ACD between the mild and severe keratoconus groups was 0.64

mm, which was approximately 17% increase between the two groups in terms of disease severity. The mean ACA levels in patients with keratoconus were 34.78±3.35 degrees. Compared with keratometry (K), there was a negative correlation for TCT, ACA and CV parameters and a positive correlation for ACD and ACV parameters.

Conclusion: According to the results obtained in this study, it can be concluded that in patients with keratoconus not only the thickness of the cornea, but also various parameters of the anterior chamber changes with the progression of the disease. Also, the findings obtained in patients with suspected keratoconus increase the clinical suspicion of keratoconus diagnosis and also accelerate the appropriate treatment of the disease.

Key words: Keratoconus, Topography, Pentacam, Keratometry