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PIBIC Last Name - Noronha First Name - Luciana Middle - Kiehl

Service (sector) Cataract N° CEP

### **Refractive errors after cataract surgery in hyperopic patients**

Noronha LK; Izecksohn, ST; Montesano, FT; Toledo, EMA; Soriano, ES

Purpose: Analysis of the incidence of refractive errors after cataract surgery in high hyperopic patients. Methods: A retrospective study was carried out with hyperopic patients who underwent cataract surgery, from May 2001 to December 2001, at the Cataract Institute – EPM/UNIFESP. Data from patients with an axial length lower than 22,0 mm were analyzed regarding to gender, age, axial length, lens opacity, type of surgery, keratometry, IOL used and refractive error after surgery. The power of the implanted IOL was calculated using the Hoffer Q formula. The multiple linear regression analysis was used. Results: Eighty-six eyes from 75 patients were submitted to cataract surgery. Sixty-four patients (74,4%) were female. The mean age was 67,49 years old (40 to 89). The IOL was placed in the bag in 68 cases (79,1%). The statistic analyses presented us these formula  $|\text{Error}| = 1,514 - 0,026(\text{age}-67) - 0,429[\text{if woman}] + 0,07[\text{if cat3+ or total}] + 0,043(\text{age}-67)[\text{if cat 3+ or total}]$  This meant that nuclear density, age and gender were important related factors that induced refractive errors after cataract surgery. Age itself and association with nuclear sclerosis had an influence on error. Older patients had minor error. When associated with the less severe nuclear sclerosis (+ 1-+2/4) the error is smaller. Although when the nuclear sclerosis is severe (+3/4 – total), the error was increased with the age of the patient. Men had more induced errors than women. Preoperative keratometry, axial length and type of surgery did not show significant statistical association. The average induced myopic error was –1,4D in 63 eyes (73 %) and induced hyperopic error was 0,89D in 22 eyes (25,6%). Forty-two eyes (48,8%) achieved the final refraction between +1D and –1D from the expected calculation with the IOL implant. Just one eye achieved the same final refraction than the expected one. Conclusion: The final refraction was +1D to -1D from the expected refraction in almost half of the patients There were statistically significant associations between refractive error and age, gender and nuclear sclerosis. Myopic error was the most common error and great miscalculations were still obtained.