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TransPRK: A no-touch procedure to refractive surgery – three years study

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Statement of the Problem: The TransPRK (transepithelial photorefractive keratectomy) by Amaris 750S a Schwind Technology is a refractive procedure with no-contact surgery. Corneal epithelium is removed by the laser without manual interference. It brings more acuity and perfect de-epithelization. This innovative laser system delivers an unsurpassed repetition rate of 1050 HZ and consequently an extremely short ablation time of just 1.3 seconds per dioptre. That means even greater safety and comfort for the patient. The risk of the cornea drying out is minimized, and the length of time the patient has to fixate on the green light is reduced. The Smart Pulse technology use a geometrical model based on a fullerene structure; other important instrument of security is the integrated contact free optical pachymetry that provides precision information about the thickness of the cornea throughout the entire duration of the treatment. The 7D eye impresses apart from the linear movements (1st and 2nd dimensions), compensations of the eye rotation around its optical axis.

Methodology & Theoretical Orientation: We treated and studied in two years, 621 eyes of 336 patients, 125 males and 211 females. The average degrees of spherical refraction were -2.75 DE and cylindrical refraction was –125DC. We used 1% tetracaine hydrochloride as anesthesia and mitomycin C 0.01% for 25 minutes or more and contact lens after the application. Drops of moxifloxacin hydrochloride was 0, 5 for antibiotic therapy. In the postoperatory, we use moxifloxacin hydrochloride 0, 5, 4 drops a day for seven days, trometamol cetorolaco 0, (45%) 4 drops a day for seven days and carmellose sodium and sodium hyaluronate for one month.

Results: We had 96.3 % with 20/20 in the end of two eyes of study and six eyes presented a little manifestation of haze. 93% had epithelial regeneration in three days after surgery and all patients in five days. 96.3% showed a spherical refraction target of 0, 52 and a cylindrical refraction of 0.5 degrees. The corneal architectural structure was preserved. We have to pay attention when we have diameters below 9.5 mm which may occur overcorrection in the results. The results modified between 12 to 36 months. The dry eye occurred in 73% of patients in the first month and kept with the same incidence of all population after three months of the surgery.

Conclusion: The TransPRK showed an excellent and safe procedure with 96.2% of good results of myopia and astigmatism. We need to observe the development of dry eye in the three months of posoperatory.

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