Stab Incision Glaucoma Surgery (SIGS)

Abstract. ***Purpose*** to compare the surgical outcome in terms of intraocular pressure (IOP) control, safety and complications of procedure using Stab Incision Glaucoma Surgery (SIGS) with preoperative subconjunctival MMC (0.02%) versus Radiofrequency assisted Stab Incision Glaucoma Surgery as a substitute for conventional sub-scleral trabeculectomy in patients with uncontrolled open angle glaucoma (1ry and 2^{ry} OAG). ***Materials and methods***. This was a prospective, consecutive, comparative non-controlled interventional study. The study was conducted on 50 eyes of 50 patients who were randomly assigned into 2 comparative groups. Group (A) included 25 eyes of 25 patients who underwent standard Stab Incision Glaucoma Surgery and group (B) included 25 eyes of 25 patients who underwent Radiofrequency assisted Stab Incision Glaucoma Surgery using Ellman Surgitron FFPF device without using MMC. The patients were evaluated at 1st week, 2nd week, and 1st month then monthly for 6 months postoperatively. Patient data such as sex, age, intraocular pressure (IOP), log MAR visual acuity, C-D ratio, anti-glaucoma medications, intraoperative, postoperative complications, bleb morphology and success rate were collected and statistically analyzed. ***Results.*** The mean age of the SIGS and RF assisted SIGS groups was 57.77 ± 7.56 and 54.95 ± 8.59 years, respectively. The mean preoperative IOP was 28 ±2.8 mmHg in group (A) which was significantly reduced postoperatively at the end of follow up period (13.7 ±3.98 mmHg), **P value was 0.001 (P≤ 0.05)** all through the follow up time. The mean reduction of IOP was 51% ± 14.16% at the end of follow up was reported in group (A). The mean preoperative IOP was 27.6 ±3.4 mmHg in group (B) which was significantly reduced postoperatively at the end of 6th month (15.8 ±4.5 mmHg)

with p value = 0.001 all through the follow up time and the mean reduction of IOP was 42% ± 15.6% at the end of follow up in group (B). IOP postoperatively was significantly lower in group (A) than in group (B) from the 2nd month till the 5th month during the follow up period. The mean number of medication preoperatively was 2.6 ± 0.6 which was significantly reduced postoperatively at the end of follow up time (0.81 ± 1.1) in group (A) **(*p* = 0.025),** in group (B) The mean number of medication preoperatively was 2.7 ± 0.67 SD and postoperatively after 6 months of follow up time was 1.43 ± 1.21 **(P value = 0.101)** which was statistically insignificant however, there was no significant difference between the two groups. Non-basal PI was the most encountered intraoperative difficulty in 8 eyes (32%), 9 eyes (36%) in group A and B respectively but there was not significant statistical difference between both groups. Hypotony due to over-filtration was the most reported postoperative complication in 5 eyes (20%) and 9 eyes (36%) in groups A, B respectively however, no significant difference was found between two groups. In group (A**)** 12 eyes (52%) in group (A) achieved complete success by the end of follow up period, qualified success rate was 35%. Three eyes (13%) were considered as failed cases. In group (B) complete success rate was 28.6% of group (B) and qualified success rate was 42.9%. Six eyes (28.6%) were considered as failed cases. ***Conclusion***. SIGS with subconjunctival MMC (0.02%) in group (A) appears to be a safe and easy method with results comparable to conventional trabeculectomy. Results of group (B) did not meet the expectation due to the high incidence of early subconjunctival scarring and ostium closure.

Keywords: Glaucoma, Stab incision glaucoma surgery (SIGS), Radiofrequency (RF), Open-angle glaucoma (OAG), mitomycin C (MMC)