

The Effects of Pulse Pressured Nebulizer in Patients with Chronic Rhinosinusitis after Functional Endoscopic Sinus Surgery

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Purpose: To Assess the effect of Pulse Pressured Nebulizer in patients with chronic rhinosinusitis (CRS) after Functional Endoscopic Sinus Surgery (FESS)

Methods: From November 2008 to April 2009, patients with CRS underwent FESS were recruited. All patients were preoperatively evaluated with sinuscopy, sinus CT scan, rhinomanometry, acoustic rhinometry and SNOT-22 (Sinonasal Outcome Test-22). After surgery, patients were randomly arranged into 3 different postoperative care groups: group A received normal saline aerosol by pulse pressured nebulizer, group B received normal saline nasal irrigation, group C served as control group. For the first 4 weeks, patients in group A and B received postoperative care 10 minutes per day and 5 days a week. SNOT-22 and sinuscopy were obtained in 2 weeks, 1 month and 3 months post-operation. Rhinomanometry and acoustic rhinometry were performed in 3 months post-operation.

Results: 58 patients were recruited. 21 of 58 patients were excluded due to incomplete data or loss of follow up. Average age of 37 patients was 49.8 years, with 20 males and 17 female). Pre-operative SNOT-22 scores and Lund-Mackay CT scores were not significantly different among these 3 groups. Compared to pre-operation, all 3 groups have significant improvement in SNOT-22 scores in 2 weeks, 1 month and 3 months post-operation. The total scores of SNOT-22 of these 3 groups were not significantly different in 3 months after surgery ($p=0.276$). However group A significantly improved in 17 items of SNOT-22, group B significantly improved in 15 items, group C significantly improved in 10 items. Group A has significant improvement than group B in "loss of smell or taste" ($p=0.026$) "post-nasal discharge" ($p=0.050$) and "thick nasal discharge" ($p=0.038$). Group A has significant improvement than group C in "nasal obstruction" ($p=0.027$), "loss of smell or taste" ($p=0.010$) and "thick nasal discharge" ($p=0.000$). There was no difference between group B and C.

Conclusion: Nasal saline irrigation by way of Pulse pressured nebulizer can be beneficial to CRS patients underwent FESS in some symptoms. It probably because saline aerosol made by pulse pressured nebulizer could enter sinuses cavities more efficiently.