

## Postoperative Budesonide Nasal Irrigation vs Normal Saline Irrigation for Chronic Rhinosinusitis: A Systematic Review and Meta-Analysis

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**Abstract :** Background: Corticosteroid irrigations, which regularly involve the off-label use of budesonide mixed with normal saline in high volume Sino-nasal irrigations, have been more commonly used in the management of post-operative chronic rhinosinusitis (CRS). Objective: This article attempted to measure the efficacy of post-operative budesonide nasal irrigation compared to normal saline-alone nasal irrigation in the management of chronic rhinosinusitis (CRS) through a systematic review and meta-analysis of randomized controlled trials (RCTs). Methods: The databases PubMed, Embase, and Cochrane Central Register of Controlled Trials were searched by two independent authors. Only RCTs comparing budesonide irrigation to normal saline alone irrigation for CRS with or without polyposis after functional endoscopic sinus surgery (FESS) were eligible. A random effect analysis model of the reported CRS-related quality of life (QOL) measures and the objective endoscopic assessment scales of the disease was done. Results: Only 6 RCTs met the eligibility criteria, with a total number of participants of 356. Compared to normal saline irrigation, budesonide nasal irrigation showed statically significant improvements in both the CRS-related quality of life (QOL) and the endoscopic findings (MD= -4.22 confidence interval [CI]: -5.63, -2.82 [P < 0.00001]), (SMD= -0.50 confidence interval [CI]: -0.93, -0.06 [P < 0.03]) respectively. Conclusion: Both intervention arms showed improvements in CRS-related QOL and endoscopic findings in post-FESS chronic rhinosinusitis with or without polyposis. However, budesonide irrigation seems to have a slight edge over conventional normal saline irrigation with no reported serious side effects, including hypothalamic-pituitary-adrenal (HPA) axis suppression.

**Keywords :** Budesonide, chronic rhinosinusitis, corticosteroids, nasal irrigation, normal saline

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