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The Efficacy of Diluted Topical Povidone-Iodine Rinses in the Management of Recalcitrant Chronic Rhinosinusitis: A Prospective Cohort Study

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Abstract

Purpose: Recalcitrant chronic rhinosinusitis is a persistent inflammatory condition of the sinonasal mucosa despite adequate medical therapy and sinus surgery. This study aimed to demonstrate the effectiveness and safety of dilute povidone-iodine (PVP-I) sinonasal rinses as an adjunctive therapy.

Methods: Prospective cohort study. Twenty-nine recalcitrant CRS patients with endoscopic evidence of ongoing inflammation and purulent discharge were prescribed 0.08% diluted PVP-I rinses. Changes to endoscopic modified Lund-Kennedy (MLK) scores at 7 weeks post-PVP-I rinsing served as the primary outcome measure.

Results: The median MLK-discharge score significantly decreased in all patients by 1.50 points post-PVP-I rinsing (p value < 0.01). The total MLK score significantly decreased in all patients by 1.50 points (p value = 0.01). Up to a 17% reduction in serum inflammatory markers was measured post-PVP-I rinsing. Sinonasal culture revealed a shift from moderate-heavy growth to lighter bacterial growth overall. Subjective SNOT-22 scores significantly improved overall by ≥ 1 minimal clinically important difference (MCID > 12; baseline median = 33; follow-up median = 20; p value < 0.01; n = 22). TSH levels increased non-significantly within normal ranges (baseline median = 1.59 mU/L; follow-up median = 1.92 mU/L; p = 0.10; n = 15). Mucociliary clearance time increased non-significantly within normal ranges (baseline median = 9 min; follow-up median = 10 min; p value = 0.53; n = 17). Olfactory Sniffin'16 scores non-significantly decreased within age-related normal ranges (baseline median = 14; follow-up median = 13; p value = 0.72; n = 18).

Conclusion: A dilute 0.08% PVP-I sinonasal rinse as an ancillary therapy in recalcitrant CRS significantly reduces signs of infection alongside notable symptom improvement, without affecting thyroid function, mucociliary clearance or olfaction.

Keywords: Betadine; Chronic rhinosinusitis; Endoscopy; Povidone-iodine; Recalcitrant; Treatment.

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