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EARLY ENDOSCOPIC SCORING OUTPERFORMS SNOT-22 IN PREDICTING RESIDUAL DISEASE AFTER ENDOSCOPIC SINUS SURGERY FOR RHINOSINUSITIS

Eshmatov Ilxomjon Doniyorjon o'g'li
Otorhinolaryngologist, Family Polyclinic No. 8, Fergana City, Uzbekistan
E-mail: usmleu6@gmail.com

Abstract. In 64 patients 12 months after endoscopic sinus surgery (ESS), symptoms improved meaningfully in 89.1%, yet SNOT-22 and Lund-Kennedy scores were unrelated. The 3-month Lund-Kennedy score identified residual endoscopic disease (AUC 0.91); SNOT-22 did not (AUC 0.52).

Keywords: rhinosinusitis; endoscopy; SNOT-22; discordance; prognosis; postoperative; risk

Introduction. Postoperative care after ESS should be individualized and multifaceted, but the criteria for individualization remain undefined (Martin et al., 2025) [1]. Follow-up visits allow assessment of the sinonasal cavity, debridement, and tailoring of medical therapy (Shen et al., 2020) [2]. Which measure should guide these decisions?

Aim. To assess agreement between symptomatic and endoscopic outcomes 12 months after ESS and to identify early prognostic markers of residual endoscopic disease.

Methods. Sixty-four patients received individualized (n=32) or standard (n=32) postoperative care. Residual endoscopic disease was a 12-month Lund-Kennedy score ≥3; clinically meaningful improvement, a SNOT-22 reduction of ≥9 points. Data are M±SD. SNOT-22 was modeled with a linear mixed model (group×time); groups were compared by permutation test and Cliff's δ, agreement by Spearman's ρ and Cohen's κ, and prognosis by ROC analysis (bootstrap 95% CI) and logistic regression. Analyses were exploratory.

Results.

SNOT-22 fell in both groups (time effect $p<0.001$): from 50.9±12.3 to 25.3±18.1 with individualized care and from 51.1±10.2 to 28.0±12.7 with standard care (group×time $p=0.704$). Meaningful improvement occurred in 57 patients (89.1%).

At 12 months, Lund-Kennedy scores were 1.31±2.04 and 2.50±2.82 in the individualized and standard groups, respectively (permutation $p=0.064$; Cliff's $\delta=-0.29$). Clear mucosa (score 0) was found in 20 (62.5%) and 11 (34.4%) patients (Fisher $p=0.045$); residual disease in 8 (25.0%) and 12 (37.5%) ($p=0.419$).

Symptoms and endoscopy were discordant: at 12 months, SNOT-22 and Lund-Kennedy scores were unrelated ($\rho=0.04$; $p=0.745$). Of 20 patients with residual disease, 18 (90.0%) reported meaningful symptom relief ($\kappa=-0.02$).

The 3-month Lund-Kennedy score identified residual disease with high accuracy (AUC 0.91; 95% CI 0.82–0.98), as did baseline Lund-Kennedy (0.85; 0.75–0.93) and the risk score (0.78; 0.66–0.89). The 3-month SNOT-22 (0.52; 0.36–0.68) and Lund-Mackay (0.60; 0.45–0.73) performed poorly. The risk score correlated independently with residual disease (OR 3.37; 95% CI 1.68–6.76; $p=0.001$); individualized care had OR 0.31 (0.08–1.19; $p=0.089$).

Discussion. The weak coupling of SNOT-22 with endoscopic findings agrees with earlier validation data (Hoang et al., 2026) [3]. Recurrence models incorporate baseline radiological scores (Bai et al., 2025; Yang et al., 2026) [4, 5]; for residual endoscopic disease, the endoscopic score performed better in our cohort.

Conclusion. Symptom relief does not guarantee mucosal recovery. The 3-month endoscopic score and the risk score give better guidance than SNOT-22 for individualizing postoperative care.

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The benefit of individualized care is preliminary; limitations include the small sample and multiple comparisons.

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