

HUBUNGAN VARIASI ANATOMI SINONASAL TERHADAP DERAJAT KEPARAHAN RHINOSINUSITIS KRONIS NON POLIP BERDASARKAN SKOR LUND-MACKAY PADA CT-SCAN

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INTISARI

Latar Belakang: Variasi anatomi sinonasal diketahui berpotensi mempengaruhi drainase dan ventilasi sinus, yang dapat berkontribusi terhadap patogenesis rinosinusitis kronis (RSK). Namun, sejauh mana variasi-variasi ini berhubungan dengan derajat keparahan RSK, khususnya pada kasus non-polip, masih menjadi perdebatan. Pemeriksaan CT-scan paranasal merupakan modalitas utama untuk mengevaluasi struktur anatomi dan derajat keparahan RSK secara objektif melalui skor Lund-Mackay.

Tujuan: Menilai hubungan antara jumlah variasi anatomi sinonasal yang berhubungan dengan kompleks *osteomeatal* serta tipe *processus uncinatus* terhadap derajat keparahan rinosinusitis kronis non-polip berdasarkan skor Lund-Mackay pada CT-scan.

Metode: Penelitian ini merupakan studi observasional analitik potong lintang, melibatkan 65 pasien dewasa dengan RSK non-polip yang menjalani CT-scan paranasal atau kepala di RSUP Dr. Sardjito selama Agustus 2024–Agustus 2025. Variasi anatomi sinonasal meliputi: deviasi septum nasi, *concha bullosa*, sel *agger nasi*, sel Haller, bula etmoid, *processus uncinatus* paradoksikal, pneumatisasi *processus uncinatus*, dan tipe *processus uncinatus* dinilai oleh dua pengamat independen, dan skor keparahan dihitung menggunakan skor Lund-Mackay. Analisis statistik menggunakan uji Spearman dan Kruskal-Wallis.

Hasil: Tidak ditemukan hubungan yang bermakna antara jumlah variasi anatomi sinonasal dan skor Lund-Mackay ($p = 0,473$), demikian pula antara tipe *processus uncinatus* ($p = 0,380$) terhadap skor Lund-Mackay. Diantara semua variasi anatomi, deviasi septum nasi menunjukkan hubungan yang signifikan terhadap skor Lund-Mackay ($p = 0,019$), dengan nilai korelasi positif sedang antara derajat deviasi dan skor Lund-Mackay ($\rho = 0,400$; $p = 0,001$).

Kesimpulan: Penelitian ini menunjukkan bahwa jumlah variasi anatomi sinonasal dan tipe *processus uncinatus* tidak berhubungan signifikan dengan derajat keparahan rinosinusitis kronis non-polip berdasarkan skor Lund-Mackay. Diantara variasi anatomi sinonasal, deviasi septum nasi menunjukkan hubungan yang signifikan, di mana derajat deviasi yang lebih besar berkorelasi dengan skor Lund-Mackay yang lebih tinggi.

Kata Kunci: Rinosinusitis kronis, variasi anatomi sinonasal, skor Lund-Mackay, CT-scan

THE ASSOCIATION OF
SINONASAL ANATOMICAL VARIATIONS WITH THE
SEVERITY OF NON-POLYP CHRONIC RHINOSINUSITIS
BASED ON LUND-MACKAY SCORE ON CT SCAN

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ABSTRACT

Background: Sinonasal anatomical variations may affect sinus drainage and ventilation, potentially contributing to the pathogenesis of chronic rhinosinusitis (CRS). However, the extent to which these variations are associated with disease severity, particularly in non-polypoid CRS, remains debated. Paranasal CT scan is the primary modality for objectively assessing anatomical structures and CRS severity using the Lund-Mackay score.

Objective: To evaluate the association between the number of sinonasal anatomical variations related to the osteomeatal complex and the type of uncinatè process with the severity of non-polypoid chronic rhinosinusitis based on the Lund-Mackay score on CT scan.

Methods: This cross-sectional analytic observational study included 65 adult patients with non-polypoid CRS who underwent paranasal or head CT scans at Dr. Sardjito General Hospital from August 2024 to August 2025. Sinonasal anatomical variations—such as nasal septal deviation, concha bullosa, agger nasi cells, Haller cells, ethmoid bulla, paradoxical middle turbinate, uncinatè process pneumatization, and uncinatè process type—were assessed independently by two observers. Disease severity was evaluated using the Lund-Mackay score. Statistical analysis was performed using Spearman and Kruskal-Wallis tests.

Results: No significant association was found between the total number of anatomical variations and Lund-Mackay score ($p = 0.473$), nor between uncinatè process type and Lund-Mackay score ($p = 0.380$). Among all variations, nasal septal deviation showed a significant association ($p = 0.019$), with a moderate positive correlation between deviation severity and Lund-Mackay score ($\rho = 0.400$; $p = 0.001$).

Conclusion: The number of sinonasal anatomical variations and uncinatè process type were not significantly associated with the severity of non-polypoid CRS. Among the assessed variations, only nasal septal deviation showed a significant relationship, with greater deviation correlating with higher Lund-Mackay scores.

Keywords: Chronic rhinosinusitis, sinonasal anatomical variation, Lund-Mackay score, CT scan