

## **KORELASI SKOR *LUND-MACKAY* DENGAN TIPE PNEUMATISASI MASTOID BERDASARKAN GAMBARAN CT SCAN SINUS PARANASAL PADA PASIEN RHINOSINUSITIS KRONIK**

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### **INTISARI**

**Latar Belakang:** Rhinosinusitis kronik (RSK) merupakan peradangan mukosa hidung dan sinus paranasal yang berlangsung lebih dari 12 minggu, dan dapat menurunkan kualitas hidup pasien secara signifikan. Skor *Lund-Mackay*, yang menggunakan CT scan sinus paranasal, sering digunakan untuk menilai keparahan RSK, sementara pneumatisasi mastoid diduga dipengaruhi oleh disfungsi tuba Eustachius akibat RSK.

**Tujuan:** Mengetahui korelasi skor *Lund-Mackay* dengan tipe pneumatisasi mastoid berdasarkan gambaran CT scan sinus paranasal pada pasien rhinosinusitis kronik.

**Metode:** Penelitian analitik observasional dengan desain *cross sectional* di RSUP Dr. Sardjito. Data pasien diperoleh secara retrospektif berdasarkan hasil pemeriksaan CT scan sinus paranasal. *Lund-Mackay Radiologic Staging System* ditentukan dari gradasi radiologi sinus maksila, sinus frontal, sel etmoid anterior, sel etmoid posterior, dan sinus sfenoid, serta obstruksi kompleks ostiomeatal. Tipe pneumatisasi mastoid diklasifikasikan menjadi 4 tipe, yaitu hipopneumatisasi, pneumatisasi sedang, pneumatisasi baik, dan hiperpneumatisasi.

**Hasil:** Penelitian terhadap 49 orang subjek penelitian menunjukkan bahwa mayoritas berjenis kelamin perempuan (69,4%), usia rata-rata  $37,7 \pm 15,6$  tahun, total skor *Lund-Mackay* dalam kategori minimal (63,3%), pneumatisasi mastoid tipe hiperpneumatisasi pada mastoid sisi dextra (53,1%) sisi sinistra (46,8%). Terdapat korelasi yang signifikan antara total skor *Lund-Mackay* dengan tipe pneumatisasi mastoid sisi dextra ( $p = 0,021$ ) dan mastoid sisi sinistra ( $p = 0,009$ ) dengan kekuatan korelasi yang ditunjukkan termasuk dalam kategori lemah ( $r < 0,4$ ). Tidak terdapat korelasi signifikan antara skor *Lund-Mackay* sisi dextra dengan tipe pneumatisasi mastoid sisi dextra ( $p = 0,06$ ) maupun skor *Lund-Mackay* sisi sinistra dengan tipe pneumatisasi mastoid sisi sinistra ( $p = 0,057$ ).

**Kesimpulan:** Terdapat korelasi positif signifikan secara statistik antara total skor *Lund-Mackay* dengan tipe pneumatisasi mastoid, baik di sisi dextra ( $p = 0,021$ ) maupun di sisi sinistra ( $p = 0,009$ ). Semakin tinggi total skor *Lund-Mackay*, semakin hipopneumatisasi mastoid.

**Kata Kunci:** rhinosinusitis kronik; skor *Lund-Mackay*; pneumatisasi mastoid

**THE CORRELATION BETWEEN *LUND-MACKAY* SCORE AND MASTOID PNEUMATIZATION TYPE ON PARANASAL SINUS CT SCAN EXAMINATION IN PATIENTS WITH CHRONIC RHINOSINUSITIS**

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**ABSTRACT**

**Background:** Chronic rhinosinusitis (CRS) is an inflammation of the nasal mucosa and paranasal sinuses that lasts more than 12 weeks, and can significantly reduce the patient's quality of life. The *Lund-Mackay* score, which uses paranasal sinus CT scans, is often used to assess the severity of CRS, while mastoid pneumatization is thought to be influenced by Eustachian tube dysfunction due to CRS.

**Objective:** To determine the correlation between the *Lund-Mackay* score and the type of mastoid pneumatization based on paranasal CT scan images in patients with chronic rhinosinusitis.

**Methods:** An observational analytical study with a cross-sectional design at Dr. Sardjito General Hospital. Patient data were obtained retrospectively based on the results of CT scans of the paranasal sinuses. The *Lund-Mackay Radiologic Staging System* was determined from the radiological gradation of the maxillary sinus, frontal sinus, anterior ethmoid cells, posterior ethmoid cells, and sphenoid sinus, as well as obstruction of the ostiomeatal complex. Mastoid pneumatization types are classified into 4 types, namely hypopneumatization, moderate pneumatization, good pneumatization, and hyperpneumatization.

**Results:** A study of 49 subjects showed that the majority were female (69.4%), the average age is  $37.7 \pm 15.6$  years, had a total *Lund-Mackay* score categorized as minimal (63.3%), and hyperpneumatized mastoid on the right mastoid (53.1%) and left mastoid (46.8%). There was a statistically significant correlation between the total *Lund-Mackay* score and the type of mastoid pneumatization on the right side ( $p = 0.021$ ) and left side ( $p = 0.009$ ), with the correlation strength classified as weak ( $r < 0.4$ ). No significant correlation was found between the *Lund-Mackay* score on the right side and the type of mastoid pneumatization on the right ( $p = 0.06$ ) or between the *Lund-Mackay* score on the left side and the type of mastoid pneumatization on the left ( $p = 0.057$ ).

**Conclusion:** There is a statistically significant positive correlation between the total *Lund-Mackay* score and the type of mastoid pneumatization on both the right side ( $p = 0.021$ ) and the left side ( $p = 0.009$ ). The higher total *Lund-Mackay* score, the more hypopneumatization of the mastoid.

**Keywords:** chronic rhinosinusitis; *Lund-Mackay* score; mastoid pneumatization