

# Hubungan tingkat maturasi vertebra servikalis dengan dimensi sinus frontalis pada kelompok usia 8-16 Tahun (analisis terhadap tinggi dan lebar sinus frontalis) = Relationship of cervical vertebra maturation level with frontal sinus dimension in the age group 8-16 Years (analysis of frontal sinus height and width)

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## Abstrak

Latar belakang: Dimensi pertumbuhan dan perkembangan skeletomaksilofasial ke arah transversal, sagittal dan vertikal, dan dimensi sinus frontalis merupakan bagian dari skelotomaksilofasial. Sampai saat ini, Maturasi Vertebra Servikalis (MVS) digunakan sebagai salah satu indikator pertumbuhan skeletomaksilofasial pada anak, serta menentukan saat yang tepat dimulainya perawatan ortopedik. Sinus Frontalis dikatakan dapat menjadi alternatif indikator pertumbuhan dan perkembangan skeletomaksilofasial selain MVS, namun masih diperlukan pembuktian lebih lanjut melalui analisis secara komprehensif.

Tujuan: Menganalisis hubungan antara maturasi vertebra servikalis Baccetti dengan dimensi sinus frontalis Ertuk pada kelompok usia 8-16 tahun terhadap pertumbuhan dan perkembangan skeletomaksilofasial.

Metode Penelitian: Studi ini menggunakan 90 radiograf sefalometri lateral anak kelompok usia 8-16 tahun.

Metode penelitian, deskriptif analitik, dan cross-sectional. Sampel radiograf sefalometri lateral dikelompokkan dalam 3 kelompok, yaitu pre-pubertal, pubertal, dan post-pubertal sesuai dengan metode maturasi vertebra servikalis Baccetti, dan dimensi sinus frontalis Ertuk merupakan pengukuran tinggi dan lebar sinus frontalis. Hasil: Analisis data, dengan uji korelasi spearman menunjukkan pada kelompok pre-pubertal, tingkat korelasi antara maturasi vertebra servikalis dengan tinggi sinus frontalis, sedang ( $r=0,433$ ) dan bermakna ( $p \leq 0.05$ ), pada kelompok peak-pubertal tingkat korelasi antara maturasi vertebra servikalis dengan tinggi sinus frontalis lemah ( $r=0,147$ ), tidak bermakna ( $p > 0.05$ ), dan pada kelompok post-pubertal, tingkat korelasi tingkat korelasi antara maturasi vertebra servikalis dengan tinggi sinus frontalis kuat ( $r=0,510$ ), dan bermakna ( $p \leq 0.05$ ). Sedangkan korelasi maturasi vertebra servikalis per-pubertal, peak-pubertal, dan post-pubertaldengan lebar sinus frontalis lemah ( $r=0,195-0,288$ ), dan tidak bermakna ( $p > 0.05$ ). Kesimpulan: Tinggi sinus frontalis Ertuk masa pre-pubertal dan post-pubertal mempunyai korelasi sedang-kuat dengan maturasi vertebra servikal Baccetti, sehingga dapat digunakan indikator pertumbuhan dan perkembangan skeletomaksilofasial

.....Background: The dimensions of growth and development of skeletomaxillofacial towards transverse, sagittal, vertical, and the dimensions of the frontal sinus are part of skeletomaxillofacial. Until now, Cervical Vertebra Maturation (CVM) is one indicator of skeletomaxillofacial growth in children, and determining the appropriate time to start orthopedic treatment. The frontal sinus is said to be an indicator growth and development in addition to CVM, but further evidence is still needed through comprehensive analysis.

Objective: To analyze the relationship between Baccetti cervical vertebral maturation and Ertuk's frontal sinus dimensions in the 8-16 years age group on skeletomaxillofacial growth and development. Research

Methods: This study used 90 lateral cephalometric radiographs of children aged 8-16 years. Research methods, analytic descriptive, and cross-sectional. These samples of lateral cephalometric radiographs were grouped into 3 groups, namely pre-pubertal, pubertal, and post-pubertal according to the Baccetti cervical

vertebra maturation method, and the Ertuk frontal sinus dimension was a measurement of frontal sinus height and width. Results: Data analysis, with the Spearman correlation test showed in the pre-pubertal group, the level of correlation between cervical vertebral maturation with frontal sinus height, moderate ( $r=0.433$ ) and significant ( $p < 0.05$ ), in the peak-pubertal group the level of correlation was the degree of correlation between maturation of the cervical vertebra with the height of the frontal sinus are low ( $r=0.147$ ), insignificant ( $p > 0.05$ ), and in the post-pubertal group, the degree of correlation between the maturation of the cervical vertebra with the height of the frontal sinus is strong ( $r=0.510$ ), and significant ( $p < 0.05$ ). Meanwhile, the correlation of pre- pubertal, peak-pubertal and post-pubertal cervical vertebra maturation with width of the frontal sinus was weak ( $r=0.195-0.288$ ) and insignificant ( $p > 0.05$ ). Conclusion: Height of the pre pubertal and post pubertal frontal sinuses have moderate- strong relationship with Baccetti cervical vertebra maturation can be used as an indicators of skeletomaxillofacial growth and development.