

ABSTRAK

HUBUNGAN SERUM FERITIN DAN KADAR SUPEROKSIDA DISMUTASE SALIVA TERHADAP KEJADIAN KARIES GIGI PADA ANAK TALASEMIA BETA MAYOR USIA 12-15 TAHUN

(Penelitian *Cross-Sectional* di RSUD Banyumas)

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Latar Belakang. Anak talasemia beta mayor berisiko tinggi mengalami karies akibat gangguan fungsi saliva dan stres oksidatif. Karies dapat disebabkan oleh kurangnya peran superoksida dismutase sebagai antioksidan dalam melindungi gigi dari stres oksidatif. Stres oksidatif yang tinggi diduga berhubungan dengan kadar serum feritin sebagai indikator jumlah zat besi dalam tubuh. **Tujuan.** Penelitian ini bertujuan untuk mengetahui hubungan kadar serum feritin dan SOD saliva dengan kejadian karies pada anak talasemia beta mayor. **Metode.** Penelitian *cross-sectional* dengan sampel 50 penyintas talasemia beta mayor usia 12-15 tahun di Instalasi Pelayanan Talasemia Terpadu RSUD Banyumas. Kadar SOD saliva diukur menggunakan spektrofotometer UV-Vis, kadar serum feritin diperoleh dari rekam medis, dan kejadian karies dinilai dengan indeks DMF-T. Analisis statistik dilakukan dengan uji korelasi bivariat *Pearson Product Moment*. **Hasil.** Rerata kadar SOD saliva adalah 161,97 U/mL (lebih rendah dari normal), rerata kadar serum feritin 5.580,92 ng/mL (lebih tinggi dari normal), dan rerata DMF-T penyintas talasemia beta mayor 7,52 (kategori karies sangat tinggi). Hasil penelitian menunjukkan tidak terdapat korelasi antara kadar serum feritin dengan kejadian karies gigi ($r = 0,214$ $p = 0,136$), terdapat korelasi negatif signifikan antara SOD saliva dengan karies gigi ($r = -0,430$; $p = 0,002$), dan terdapat korelasi negatif signifikan antara serum feritin dan SOD saliva ($r = -0,690$; $p = 0,001$). **Simpulan.** Rendahnya SOD saliva berhubungan dengan kejadian karies gigi, sementara kadar serum feritin tidak berhubungan langsung dengan kejadian karies gigi, namun kadar serum feritin berhubungan dengan kadar SOD saliva. Temuan ini menekankan perlunya evaluasi rutin kadar SOD saliva serta upaya preventif karies pada anak talasemia beta mayor.

Kata kunci: Karies gigi, serum feritin, stres oksidatif, superoksida dismutase saliva, talasemia beta mayor

ABSTRACT

THE RELATIONSHIP BETWEEN SERUM FERRITIN AND SALIVA SUPEROXIDE DISMUTASE LEVELS WITH THE OCCURRENCE OF DENTAL CARIES IN CHILDREN WITH BETA-THALASSEMIA MAJOR AGED 12-15 YEARS

(A Cross-Sectional Study at RSUD Banyumas)

Rizqi Amalia Sunaryono

Background: Children with beta-thalassemia major are highly susceptible to dental caries due to impaired salivary function and increased oxidative stress. A deficiency in superoxide dismutase (SOD), a key antioxidant enzyme in saliva, may contribute to caries development by failing to protect against oxidative damage. Oxidative stress is suspected to correlate with elevated serum ferritin, an indicator of iron overload. **Objective:** To examine the relationship between serum ferritin levels, salivary SOD levels, and dental caries in children with beta-thalassemia major. **Methods:** This cross-sectional study involved 50 beta-thalassemia major survivors aged 12–15 years at the Integrated Thalassemia Service Unit, Banyumas General Hospital. Salivary SOD levels were measured using a UV-Vis spectrophotometer, serum ferritin data were retrieved from medical records, and caries were assessed using the DMF-T index. Data were analyzed using Pearson's correlation test. **Results:** The mean salivary SOD level was 161.97 U/mL (below normal), serum ferritin was 5,580.92 ng/mL (above normal), and the mean DMF-T score was 7.52 (very high). No significant correlation was found between serum ferritin and caries incidence ($r = 0.214$; $p = 0.136$). However, a significant negative correlation was observed between salivary SOD and caries ($r = -0.430$; $p = 0.002$), and between serum ferritin and salivary SOD ($r = -0.690$; $p = 0.001$). **Conclusion:** Low salivary SOD levels are associated with increased caries in children with beta-thalassemia major. While serum ferritin does not directly correlate with caries, it is significantly linked to salivary SOD levels. Monitoring SOD levels and preventive dental care are strongly recommended.

Keywords: *Beta-thalassemia major, dental caries, salivary superoxide dismutase, serum ferritin, oxidative stress*