

ABSTRAK

HUBUNGAN SERUM FERITIN DAN KADAR MALONDIALDEHYDE 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. Talasemia beta mayor merupakan kondisi kelainan darah pada hemoglobin yang didapatkan secara genetik. Tranfusi darah berulang dapat menyebabkan peningkatan kadar serum feritin akibat akumulasi zat besi. Akumulasi zat besi dalam tubuh dapat memicu kondisi stres oksidatif yang meningkatkan kadar *malondialdehyde* (MDA) saliva. Stres oksidatif memengaruhi kesehatan rongga mulut dan meningkatkan risiko karies gigi. **Tujuan.** Penelitian ini bertujuan mengetahui hubungan kadar serum feritin dan kadar MDA saliva terhadap kejadian karies gigi pada penyintas talasemia beta mayor. **Metode.** Penelitian *cross-sectional* dilakukan pada 50 anak penyintas talasemia beta mayor usia 12-15 tahun di Instalasi Pelayanan Talasemia Terpadu RSUD Banyumas. Kadar serum feritin diperoleh dari rekam medis, kadar MDA saliva diukur dengan metode *Thiobarbituric Acid Reactive Substances* (TBARS), dan karies gigi diperoleh dari skor DMFT. **Hasil.** Rerata kadar serum feritin yaitu 5.580,92 ng/mL (di atas normal), rerata kadar MDA saliva yaitu 1,03 μ M (di atas normal), dan rerata skor DMFT yaitu 7,52 (kategori sangat tinggi). Analisis statistik menunjukkan terdapat hubungan yang signifikan antara kadar serum feritin dan kadar MDA saliva ($p = 0,001$; $r = 0,43$); terdapat hubungan yang signifikan antara kadar MDA saliva dan karies gigi ($p = <0,001$; $r = 0,48$); dan tidak terdapat hubungan yang signifikan antara kadar serum feritin dan karies gigi ($p = 0,13$; $r = 0,21$). **Simpulan.** Kadar MDA saliva yang tinggi berhubungan dengan tingginya karies gigi dan kadar serum feritin. Namun, kadar serum feritin tidak berhubungan langsung dengan karies gigi. Hal ini menunjukkan peran stres oksidatif terhadap kesehatan gigi anak talasemia beta mayor.

Kata Kunci : Karies gigi, *malondialdehyde* saliva, serum feritin, talasemia beta mayor.

ABSTRACT

RELATIONSHIP BETWEEN SERUM FERRITIN AND SALIVARY MALONDIALDEHYDE LEVELS WITH THE OCCURRENCE OF DENTAL CARIES IN CHILDREN WITH BETA THALASSEMIA MAJOR AGED 12-15 YEARS (A Cross-Sectional Study at RSUD Banyumas)

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Background. Beta thalassemia major is a genetic disorder that affects hemoglobin. Frequent blood transfusions can lead to an increase in serum ferritin due to iron accumulation. Excess iron in the body trigger oxidative stress, which elevates salivary malondialdehyde (MDA) levels. Oxidative stress influences oral health and increases the risk of dental caries. **Purpose.** The aims of this study was to determine the relationship between serum ferritin and salivary MDA levels with the incidence of dental caries in children with beta thalassemia major. **Methods.** A cross-sectional study was conducted on 50 children aged 12-15 years with beta thalassemia major at Instalasi Thalasemia Terpadu RSUD Banyumas. Serum ferritin were obtained from medical records, salivary MDA levels were measured using the Thiobarbituric Acid Reactive Substances (TBARS) method, and dental caries were assessed using the DMFT score. **Results.** The mean serum ferritin level was 5,580.82 ng/mL (above the reference range), salivary MDA level was 1.03 μ M (higher than normal), and DMFT score was 7.52 (categorized as very high). The results showed a significant relationship between serum ferritin and salivary MDA levels ($p = 0.001$; $r = 0.43$), as well as salivary MDA levels and dental caries ($p = <0.001$; $r = 0.48$), and no significant relationship between serum ferritin and dental caries ($p = 0.13$; $r = 0.21$). **Conclusions.** This study conludes that elevated salivary MDA levels are associated with both higher dental caries and serum ferritin levels. Howefer, serum ferritin is not directly associated with dental caries. This suggest a role of oxidative stress in oral health of children with beta thalassemia major.

Keyword : Beta thalassemia major, dental caries, salivary malondialdehyde, serum ferritin