

# Stres oksidatif malondialdehyde pada penderita dewasa dengan thalasemia beta mayor dan intermedia: perbandingan antara sebelum dan setelah transfusi darah serta hubungannya dengan muatan besi berlebih = Oxidative stress malondialdehyde in adults beta thalassemia major and intermedia comparison between before and after blood transfusion and its correlation with iron overload

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## Abstrak

### <b>ABSTRAK</b><br>

Latar Belakang: Muatan besi berlebih yang diduga dapat menyebabkan peningkatan stres oksidatif malondialdehyde merupakan masalah utama pada pasien thalasemia beta mayor dan intermedia, baik TDT maupun NTDT. Transfusi darah dan kelasi besi merupakan terapi utama thalasemia. Kadar malondialdehyde MDA plasma belum diteliti mendalam di Indonesia, terutamanya pemberian transfusi serta korelasinya dengan muatan besi berlebih. Tujuan: mendapatkan profil kadar MDA pada pasien thalasemia dewasa; membandingkan kadarnya antara sebelum dan setelah transfusi antara pasien TDT dan NTDT serta mendapatkan korelasinya dengan feritin serum FS dan saturasi transferin ST. Metode: Penelitian potong lintang serta pre dan post study pada penderita dewasa thalasemia beta yang mendapatkan transfusi darah serta dengan/atau tanpa kelasi besi. Sampel darah diambil sesaat sebelum transfusi dan satu hari setelah transfusi. Kadar MDA plasma diperiksa berdasarkan metode Wills. Hasil: Sebanyak 63 orang pasien dilibatkan dalam studi, terdiri dari 51 TDT dan 12 NTDT. Median kadar MDA adalah 0,49 0,21-1,33 ?mol/L. Kadar tersebut tidak berbeda bermakna antara sebelum dan setelah transfusi, antara pasien TDT dan NTDT. Didapatkan korelasi lemah antara FS dengan kadar MDA sebelum transfusi sedangkan tidak ada korelasi antara FS dengan kadar MDA setelah transfusi dan antara ST dengan kadar MDA. Simpulan: Median kadar MDA plasma pada pasien dewasa dengan thalasemia beta mayor dan intermedia sebelum transfusi 0,49?mol/L. Tidak ada perbedaan bermakna antara kadar MDA sebelum dan setelah transfusi dan antara pasien TDT dan NTDT. Terdapat korelasi lemah antara FS dengan MDA sebelum transfusi dan tidak terdapat korelasi FS dengan MDA setelah transfusi dan ST dengan kadar MDA.

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### <b>ABSTRACT</b><br>

Abstract Background Iron overload is a major problem in thalassemic patients, either in TDT or NTDT. Iron overload may increase oxidative stress malondialdehyde MDA. Blood transfusion and chelating iron are the main therapy for beta thalassemia major TDT. However, plasma MDA levels have not been well studied in Indonesia, especially its correlation with iron overload. Objective This study aimed to profile MDA levels in adult thalassemic patients to compare its level between before and after transfusion and between TDT and NTDT patients and to obtain its correlation with serum ferritin SF and transferrin saturation TS. Method A cross sectional as well as pre and post study in adult patients with thalassemia major and intermedia who received blood transfusion with or without chelating iron. Blood samples were withdrawn immediately before transfusion and one day after transfusion. Plasma MDA levels were assayed according to Wills method. Results Total of 63 patients were enrolled, consisting 51 TDT and 12 NTDT patients. Median MDA

level was 0.49 0,21 1,33 mol L. The level was not significantly different between before and after transfusion, between TDT and NTDT patients. Weak correlation was observed between SF and MDA levels before transfusion and there is no correlation was observed between SF and MDA levels before transfusion and also between TS and MDA levels. Conclusion Median plasma MDA levels in adult patients with beta thalassemia major and intermedia before transfusion 0,49 mol L. No significant different is found between MDA before and after transfusion and between TDT and NTDT patients as well. Plasma MDA levels have weak correlation with serum ferritin levels before blood transfusion.