

## Diabetes mellitus in $\beta$ -thalassemia major patients

Riadi Wirawan, author

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### Abstrak

Thalassemia b mayor adalah penyakit yang disebabkan oleh kelainan sintesis rantai polipeptida b yang diturunkan secara otosom resesif. Penanganan kasus dengan thalassemia b mayor berupa pemberian transfusi berulang yang akan mengakibatkan hemokromatosis. Hemokromatosis dapat terjadi pada beberapa organ tubuh termasuk pankreas. Tujuan penelitian ini untuk mendapatkan kadar gula darah dan angka kejadian hemokromatosis pada penderita thalassemia b mayor. Telah diperiksa kadar gula darah puasa dan kadar ferritin serum pada 115 penderita thalassemia b mayor yang berumur 10-23 tahun dari Pusat Thalassemia Bagian Ilmu Kesehatan Anak Fakultas Kedokteran Universitas Indonesia-Rumah Sakit Cipto Mangunkusumo Jakarta. Kadar gula darah diperiksa dengan metode enzimatik sesuai dengan kriteria American Diabetes Association (ADA), kadar ferritin serum diperiksa dengan metode microparticle enzyme immuno assay (MEIA). Pada penelitian didapatkan semua kasus yang diperiksa menunjukkan hemokromatosis, 14,8% dari pada kasus disertai dengan kadar gula darah puasa terganggu dan 2,6% menunjukkan adanya diabetes melitus. Penderita thalassemia b mayor yang mendapat transfusi berulang menyebabkan terjadinya hemokromatosis yang dapat mengganggu fungsi pankreas. (Med J Indones 2003; 12: 87-93)

*b-thalassemia major is a disease caused by b polypeptide chain synthesis disorder which is inherited as an autosomal recessive from both parents which is marked by little or no b globin chain synthesis. Medication for b thalassemia major patients is by repeated blood transfusions, which causes hemochromatosis. Hemochromatosis can occur in various organs including the pancreas. The aim of the study was to assess the alteration of plasma glucose concentration and the hemochromatosis prevalence. Fasting plasma glucose concentration and serum ferritin examination were measured in 115 b thalassemia major patients with ages between 10-23 years who were out-patients in the Thalassemia Centre, Department of Child Health, Medical School, University of Indonesia / Dr. Cipto Mangunkusumo General Hospital, Jakarta. The plasma glucose concentration examination was conducted by the GDH enzymatic method, with American Diabetes Association (ADA) criteria in the evaluation, while the serum ferritin examination was conducted with the microparticle enzyme immuno assay (MEIA) method. All patients had hemochromatosis, 14.8% of the patients had impaired fasting glucose level and 2.6% of the patients showed indications of diabetes mellitus. b thalassemia major patients who receive frequent transfusions will develop hemochromatosis that will in turn impair the pancreatic function. (Med J Indones 2003; 12: 87-93)*