

# **Study of Fatty Acid Binding Protein 4 (FABP4) levels in Patients with Beta-thalassemia and its Related Complications**

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By

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## Abstract

**Introduction:** Patients with beta-thalassemia may suffer from complications due to iron overload. It has been suggested that several adipokines may play a potential role in the development of complications in beta-thalassemia. Fatty acid-binding protein 4 (FABP4) is one of the adipokines, bridging several aspects of metabolic and inflammatory pathways. Little is known about the relationship between this adipokine and cardiac, metabolic, liver, and, endocrine function, especially in patients with beta-thalassemia .

**Aim:** To evaluate the serum FABP4 levels in B-thalassemia patients and to correlate them with beta-thalassemia complications.

**Methods:** eighty adult individuals were enrolled in this cross-sectional study. Participants were divided into 2 groups: 50 patients with B-thalassemia and 30 age and sex- matched healthy subjects as a control group. Full medical history and clinical examination were done. Serum levels of Fatty Acid Binding Protein 4 (FABP4), total cholesterol, LDL, HDL, TG, ferritin, complete blood count, FBG, 2hpp BG, Pelvi-abdominal sonography, ECG and echocardiography were performed for all the participants.

**Results:** Our results showed that higher FABP4 values were associated with increased cardiac, hepatobiliary and endocrine complications among beta-thalassemia patients compared to the healthy control group. We found that beta-thalassemia patients with high FABP4 levels had significantly higher ALT, AST, S. ferritin, TG, LDL, FBG and 2hpp BG levels compared to beta thalassemia patients with low

FABP4 levels, levels FABP4 was identified as a significant marker that predicts cardiac complications ( $P = 0.001$ ), with the cut-off value  $>2.87$  ng/ml showing the best combination of sensitivity and specificity

**Conclusion:** Higher FABP4 values were associated with increased cardiac, hepatobiliary and endocrine complications among beta-thalassemia patients compared to healthy control group. FABP4 may be used as an early biomarker for beta-thalassemia complications.