



**RELATION BETWEEN OXIDATIVE STRESS AND
CAROTID INTIMA-MEDIA THICKNESS IN BETA-
THALASSEMIA MAJOR PATIENTS**

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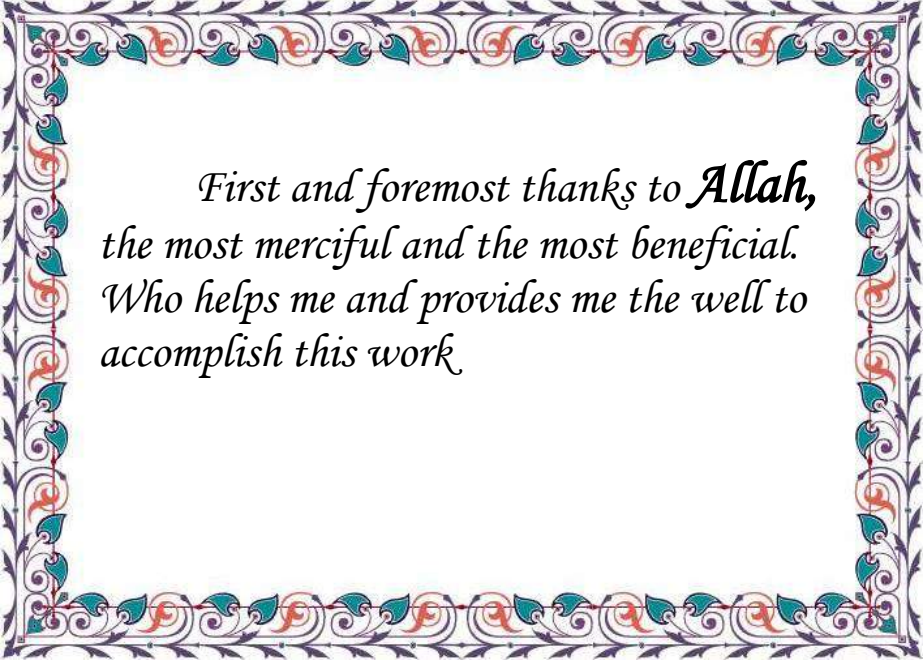
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*First and foremost thanks to **Allah**,
the most merciful and the most beneficial.
Who helps me and provides me the well to
accomplish this work*

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List of Abbreviations

BMT	Bone Marrow Transplantation
CD	Clusters of differentiation
CRP	C-Reactive protien
CT	Computed Tomography
EC	Endothelial cells
GH	Growth Hormone
DFO	Desferroxamine
GPX	Glutathione Peroxidase
Hb A	Hemoglobin A
Hb E	Hemoglobin E
Hb F	Hemoglobin F
Ig A	Immunoglobulin A
Ig G	Immunoglobulin G
Ig M	Immunoglobulin M
MR	Magnitic Resonance
MRI	Magnitic Resonance Imaging
NASH	Non Alcholic Steatohepatitis
NO	Nitric Oxide
PT	Prothrombin time
PTT	Partial Thromboplastin Time
RBC	Red Blood Corpuscle
S.TFR	Serum Transferrin Receptors



List of Abbreviations

SCD	Sickle Cell Disease
TAC	Total Antioxidant Capacity
TI	Thalassemia Intermedia
β_TM	Beta Thalassemia Major



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ABSTRACT

Background: Beta-thalassemia is a hereditary hemolytic anemia with varying degrees of severity. Severely affected patients are treated with blood transfusion to maintain optimum level of hemoglobin for normal growth and physical activities. Vascular dysfunction with increase arterial stiffness and endothelial dysfunction has been demonstrated in patients with beta-thalassemia major patients.

Objective: The present study was carried out to explore the relation between oxidative stress markers in beta-thalassemia major patients and carotid intima-media thickness.

Methodology: The study included 40 thalassemic patients recruited from Hematology-Clinic Faculty of Medicine – Ain Shams University in addition to 50 healthy children who served as control group. All cases were subjected to full history taking, clinical examination and laboratory investigations including CBC, liver functions, serum ferritin, Hb electrophoresis, NO, TAC and glutathione peroxidase. CIMT were measured to both patients and controls.

Results: There was a highly significant decrease in nitric oxide and total antioxidant capacity in thalassemic patients in comparison with control group. There was a highly significant increase in glutathione peroxidase and carotid intima-media thickness in thalassemic patients in comparison with control group. The study concluded a significant increase in carotid

intima-media thickness (CIMT) in splenectomised thalassemia major patients in comparison with non splenectomised patients.

Conclusion: There is a relation between oxidative stress markers in beta-thalassemia major patients and carotid intima-media thickness.

Keywords: CIMT, GPx, NO, TAC, Thalassemia major.

Aim of the Study

The present study was carried out to explore the relation between oxidative stress markers in β -thalassemia major patients and carotid intima-media thickness.