



**Peroxisome proliferator-activated receptor- γ
(Pro12Ala polymorphism) and risk of osteopenia
in β -thalassemia major patients.**

Thesis

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إِنْ أَرِيدُ إِلَّا الْإِصْلَاحَ مَا اسْتَطَعْتُ وَمَا تَوْفِيقِي
إِلَّا بِاللَّهِ عَلَيْهِ تَوَكَّلْتُ وَإِلَيْهِ أُنِيبُ

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List of Contents

Title	Page No
• List of abbreviations	I
• List of tables	V
• List of figures	VI
• Introduction	1
• Aim of the work	3
• Review of literature	
• <i>Chapter I</i> :overview of thalassemia	4
• <i>Chapter II</i> :bone disease and skeletal complications in patients with β thalassemia major	36
• <i>Chapter III</i> :peroxisome proliferator activated receptor γ (PPAR γ)	43
• Patients and methods	49
• Results	60
• Discussion	76
• Summary	81
• Conclusion	83
• Recommendations	84
• References	86

List Of Abbreviations

<i>Abb</i>	Meaning
<i>ANC</i>	Absolute neutrophil count.
<i>BMD</i>	Bone mineral density.
<i>BMPs</i>	Bone morphogenetics proteins.
<i>BMT</i>	Bone marrow transplantation.
<i>CO</i>	Carbon monoxide.
<i>COLIA 1</i>	Collagen type i alpha 1.
<i>DBD</i>	DNA- binding domain.
<i>DEXA</i>	Dual energy x ray absorptiometry.
<i>DFO</i>	Desferoxamine.
<i>DFP</i>	Deferiprone.
<i>DFX</i>	Deferasirox.
<i>DNA</i>	Deoxyribonucleic acid.
<i>Fe</i>	Ferrum (iron)
<i>FGFs</i>	Fibroblast growth factors.
<i>GH</i>	Growth hormones.
<i>GIT</i>	Gastro intestinal tract.
<i>Hb</i>	Hemoglobin.
<i>HbH</i>	Hemoglobin H.
<i>HCC</i>	Hepatocellular carcinoma.
<i>HIC</i>	Hepatic iron concentration.
<i>HLA</i>	Human leukocyte antigen.
<i>HPLC</i>	High performance liquid chromatography.
<i>IE</i>	Ineffective erythropoiesis.
<i>IGF-1</i>	Insulin growth factor 1.
<i>IGFBP</i>	Insulin growth factor binding protein.
<i>IL 6</i>	Interleukin 6.
<i>IL-1α</i>	Interleukin 1 α .

<i>INF</i>	Interferon.
<i>LBD</i>	Ligand binding domain.
<i>LCI</i>	Labile cell iron.
<i>LPI</i>	Labile plasma iron.
<i>M-CSF</i>	Macrophage colony stimulating factor.
<i>NTX</i>	N-Telopeptide Cross-Links (bone resorption marker).
<i>O₂</i>	Oxygen.
<i>OPG</i>	Osteoprotegrin.
<i>OPSI</i>	Over whelming post splenectomy infection.
<i>PDGF</i>	Platelet derived growth factor.
<i>PGJ₂</i>	Prostaglandin j ₂ .
<i>PPARγ</i>	Peroxisome proliferator-activated receptor gamma.
<i>PTH</i>	Pra thyroid hormone.
<i>RANK</i>	Receptor activator of nuclear factor kappa .
<i>RANKL</i>	Receptor activator of the nuclear factor kappa ligand.
<i>RBC</i>	Red blood cell
<i>ROI</i>	Reactive oxygen intermediate.
<i>RH</i>	Rhesus factor.
<i>SNPs</i>	Single nucleotide polymorphisms.
<i>T₄</i>	Thyroxine.
<i>TGF β</i>	Transforming growth factor-beta.
<i>TNF-α</i>	Tumor necrosis factor α .
<i>TRACP-5b</i>	Tartrate resistant acid phosphatase isoform 5b.
<i>VDR</i>	Vitamin D receptor.
<i>α Thal</i>	Alpha thalassemia.
<i>β Thal</i>	Beta thalassemia.
<i>β -TM</i>	Beta thalassemia major.
<i>MRI</i>	Magnetic resonance imaging
<i>FSH</i>	Follicle stimulating hormone
<i>LH</i>	Luteinizing hormone

MCV	Mean corpuscular volume
MCH	Mean corpuscular hemoglobin
BMI	Body mass index
CNS	Central nervous system
CBC	Complete blood count
EDTA	Ethylene diamine tetra-acetic acid
BMC	Bone mineral content
PO4	Phosphorous
Kg	Kilogram
SDS	Standard deviation score
ALT	Alanine transferase
AST	
TLC	Total leukocytic count
PCR	Polymerase chain reaction
EPO	Erythropoietin
HPETE	Hydro peroxy-eicosatetraenoic acid.
5-HETE	5-hydroxy-eicosatetraenoic acid.
5-oxo-EETE	Oxo-eicosatetraenoic acid .
RS5444	Rosiglitazone.
GDF	Growth differentiation factor
MYB	V-Myb Avian Myeloblastosis Viral Oncogene Homolog
BCL	B cell leukemia
Hb F	Fetal hemoglobin
GATA_1	Regulators of gene expression in hematopoietic cells.
RBC	Red blood cell
APOE	Apolipoprotein E
s TFR	Serum transferrin receptor
CD +34	Cluster of Differentiation 34 (a cell surface protein on hematopoietic stem cells).
JAK2	Janus kinase 2

<i>β-TI</i>	β thalssemia inter media
<i>HBV</i>	Hepatitis B virus
<i>HCV</i>	Hepatitis C virus
<i>g/dl</i>	Gram per deciliter
<i>HSCT</i>	Hematopoietic Stem Cell Transplantation
<i>mg</i>	Milligram
<i>PLT</i>	Platelets

LIST OF TABLES

Table	Content	No
Table (1)	History and examination data of all patients.	61
Table (2)	Iron chelation and blood transfusion data of all patients.	62
Table (3)	Complications in all patients.	63
Table (4)	Laboratory data of all patients.	64
Table (5)	Z-score among patients and controls .	65
Table (6)	Genotypes among patients and controls.	67
Table (7)	Comparison of history and examination data among different genotype groups.	69
Table (8)	Comparison of iron chelation and blood transfusion data among different genotype groups.	71
Table (9)	Complications data among different genotype groups.	72
Table (10)	laboratory data and Z-score among different genotype groups.	73
Table (11)	Correlation of Z score to categorical variables.	74
Table (12)	Linear regression correlation of Z score to numerical continuous variables.	75

List of Figures

Table	Content	No
Figure (1):	Diagram of the human β -globin family of genes on chromosome 11.	4
Figure (2):	Percentages of hemoglobin chain types during human developmental stage	5
Figure (3):	Globin genes on 11 , 16 chromosomes .	6
Figure (4):	Mechanism of ineffective erythropoiesis and hemolysis in thalassemia	7
Figure (5):	Amelioration of free iron species (LPI and LCI) by iron chelators and antioxidants	8
Figure (6):	Autosomal recessive inheritance	10
Figure (7):	Hemoglobin H disease and hydrops fetalis .	13
Figure (8):	Pathophysiology of β thalassemia	15
Figure (9):	HbA 2 determination by HPLC	23
Figure (10):	Factors involved in regulation of bone remodeling that may be altered in patients with thalassemia major leading to decreased osteoblasts and / or increased osteoclasts activity	39
Figure (11):	Histogram of Z-score of patients	65
Figure (12):	Histogram of Z-score of controls	65
Figure(13):	Genotypes of controls	67
Figure(14):	Genotypes of patients	67
Figure (15):	PCR of PPAR γ	68
Figure (16):	Histograms of age of disease onset among different genotypes	70
Figure (17):	Histograms of age at splenectomy among different genotypes	70
Figure (18):	Correlation between age and Z- score.	75
Figure (19):	Correlation between disease duration and Z- score	75