

# **Correlation and outcome of Vitamin D polymorphism in Primary Immune Thrombocytopenic purpura patients under Eltrombopag therapy**

**Walaa Ali El Salakawy<sup>1</sup>**

**Rasha Magdy Mohamed Said<sup>1</sup>**

**Doaa Abd Elaziz<sup>1</sup>**

**Rana Zakariya Abbas<sup>1</sup>**

**Basma saeid Mansour Ali<sup>1</sup>**

**Rana Amr Mohamed hamdy<sup>1</sup>**

*<sup>1</sup>Internal Medicine and Clinical Hematology Department, Faculty of Medicine, Ain Shams University*

**Corresponding author:** Rana Amr Mohamed hamdy

**Phone no:** (+2) 01111896202

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## **ABSTRACT**

### **Background:**

Primary Immune thrombocytopenia (ITP) is an autoimmune disease characterized by both platelet destruction and impaired platelet production. Vitamin D regulates the growth and differentiation of various cells of the immune system through acting on vitamin D receptors (VDRs) expressed on these immune cells.

Studies have demonstrated the role of VDR polymorphisms in the development of various autoimmune diseases.

**Aim of the Work** To find the correlation between vitamin D receptor gene polymorphism and outcome in primary and resistant immune thrombocytopenic patients under Eltrombopag therapy.

**Study design:** Exploratory comparative cross-sectional study.

▪ **Study Setting:**

The study will be conducted at Ain Shams University Hospitals, Hematology department.

▪ **Study Period:** 2022-2023.

▪ **Study Population:**

Thirty ITP patients reclassified into 15 primary ITP patients in remission and 15 Resistant ITP patients.

**Inclusion Criteria:**

The patients should be diagnosed and investigated for primary ITP and resistant ITP according to Society of Hematology guidelines (ASH)

**Exclusion Criteria:**

1. Diseases associated with secondary immune thrombocytopenia e.g. SLE, antiphospholipid syndrome
2. Pregnancy
3. Recent transfusion or immunization
4. Drugs alcohol abuse exposure to environmental toxins
5. Previous diagnoses or possible conditions that are associated with thrombocytopenia

**Results:**

BsmI VDR polymorphism with its different alleles was detected in all our studied patients either responder or resistant ones. BB allele was detected in 11 patients (73.3%) in responder group while it was detected in 2 patients (13.3 %) in resistant group with high significant difference p value (0.003).

Apal VDR polymorphism and FokI VDR polymorphism didn't reveal any statistically significant difference when comparing both groups with p value (1.000) and ( $P > 0.05$ ) respectively although detected in all patients.

**Conclusion :**

Our study suggests that BsmI polymorphism has an impact on ITP patients regarding treatment response as we detected BB allele more frequently in ITP responders while bb allele was more detected in resistant ITP patients.

While Apal VDR polymorphism and FokI VDR polymorphism didn't reveal any statistically significant relation to treatment response when comparing both groups.