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#### List of Abbreviations

**ACE** Angiotensin-Converting Enzyme.

ACT Activated Clotting Time.
ADP Adenosine Di-Phosphate.

**ALI** Acute Lung Injury.

**APLS** AntiPhosphoLipid Syndrome. **APLAs** AntiPhosphoLipid Antibodies

APPT Activated Partial Thromboplastin Time.
 ARDS Adult Respiratory Distress Syndrome.
 ASH American Society of Hematology.

**ATP** Adenosine tri-phosphate.

**CAPS** Catastrophic Antiphospholipid Antibody

Syndrome.

**CCI** Corrected count increment.

**CLEC1B** C-type Lectin domain family 1 member B.

**CPB** Cardio Pulmonary Bypass.

**CRP** C-Reactive Protein.

**DB** Dense Bodies.

DDAVP 1-deamieno-8-D-arginine vasopressin.DIC Disseminated Intravascular Coagulation.

DMS Demarcation Membrane System.dRVVT Dilute Russell Viper Venom Time.

**DVT** Deep Venous Thrombosis.

**ELISA** Enzyme-linked ImmunoAssays. **FDP** Fibrin Degradation Particles.

**FFP** Fresh Frozen Plasma.

**FNAIT** Fetal and Neonatal Allo-immune

Thrombocytopenia.

**FTRs** Febrile Transfusion Reactions.

**GP** Glycoprotein.

GPS Gray Platelets Syndrome.GvHD Graft Versus Host Disease.

HIPA Heparin Induced Platelet Activation.HIT Heparin-Induced Thrombocytopenia.

**HIV** Human Immune-deficiency Virus.

HLA Human Leukocyte Antigen.HPAs Human Platelet Alloantigens.HUS Hemolytic Uremic Syndrome.

ICU Intensive Care Unit. IgE Immunoglobulin E.

IgG Immunoglobulin gamma.INR International normalized ratio.

**ISTH** International Society of Thrombosis and

Haemostasis.

**ITAM** Immunoreceptor tyrosine-based activation

motif.

ITP Immune thrombocytopenia.IVIG Intravenous immunoglobulin.

**LA** Lupus antibody.

LMWH Low molecular weight heparin.MPD Myeloproliferative disorders.

**MPR** Multi transfusion Platelet Refractoriness.

**NETs** Neutrophil extracellular traps.

**NSF** N-ethylmaleimide-sensitive factor.

OCS Opencanalicular system.

PaGIA Particle gel immunoassay.

PARs Protease-activated receptors.

PBP Platelet basic protein.PC Platelet concentrates.

**PECAM-1** Platelet Endothelial Cell Adhesion Molecule

1.

**PF4** Platelet Factor 4.

**PLADO** Prophylactic Platelet Dose Trial. **PMNs** Polymorphonuclear leukocytes.

**PRA** Panel-reactive antibody.

**PSGL-1** P-selectin glycoprotein ligand-1.

**PT** Prothrombin Time.

PTP Post Transfusion Purpura.
PTT Partial Thromboplastin Time.

**QPD** Quebec platelet disorder.

**RANTES** Regulated on Activation, Normal T cell

Expressed and presumably Secreted.

**RHD** Rhesus D antigen

**SLE** Systemic lupus erythematosus.

**SNAP** Soluble N-ethylmaleimide-sensitive factor

attachment protein.

**SNARE** Soluble N-ethylmaleimide-sensitive factor

attachment receptor.

**SOFA** Sequential Organ Failure Assessment.

**SRA** Serotonin Release Assay.

**SToP** Strategies for Transfusion of Platelets.

**TF** Tissue Factor.

**TLRs** Toll-like receptors.

**TOPPS** Trial of Prophylactic Platelets. **t-PA** Tissue plasminogen activator.

**TPO** Thrombopoietin.

**TRALI** Transfusion-related acute lung injury.

**TT** Thrombin time.

**TTP** Thrombotic thrombocytopenic purpura.

UDP Uridine diphosphate.UFH Unfractionated heparin.UTP Uridine triphosphate.

**VAMPs** Vesicle-associated membrane proteins.

VWD VonWillebrand disease.VWF VonWillebrand factor.

WHO World Health Organization.δ-SPD Delta storage pool deficiency.

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# Introduction





# **Aim of the Work**





# Physiological Aspect of Platelets and its Role in Critical Illness





# Platelets Dysfunction in ICU





# New Strategies for Platelets Transfusion Therapy





# **Summary**





# References





# **Arabic Summary**



# Platelet Dysfunction in Critically Ill Patients in ICU

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