# THE EFFECT OF SPLENCETOMY ON THE POLYMORPH - COMPLEMENT INTERACTION

#### THESIS

Submitted in Partial Fulfilment for the Master Degree in Hematology

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Best wishes for patients and hope for recovery.



**Dedication...** 

To My Father

Mother

Husband

Son

Sister

& Brother.

#### Table of Contents

Chapter I : Introduction And Aim Of Work
Chapter II : Review Of Literature:
* The Spleen:
- Anatomy
- Function1
* Splenectomy:
- Types and indications2
- Haematological aspects post-splenectomy2
- Immunological aspects post-splenectomy2
- Overwhelming post-splenectomy sepsis3
* The Neutrophil (Polymorphonuclear Leucocytes)
function:
- Count and normal range4
- Neutrophil structure4
- The phagocytic function of the neutrophil4
- Tests of neutrophil function5
* The Complement System:
- Pathways of complement activation5
- Functions of the complement6
<pre>@ The role of C3 in the immune response7</pre>
@ The role of C4 in the immune response7
-Control mechanisms of the complement system7
-Complement deficiency and relation to disease8
Chapter III: Material and Methods8
Chapter IV : Results9
Chapter V : Discussion13
Chapter VI : Summary, Conclusion And Recommendation14
Chapter VII: References15
ChapterVIII:Arabic Summary.

#### List Of Tables

Table	(1) :The post-splenectomy effects on the immune
	system29
Table	(2) :Count and normal range of neutrophils41
Table	(3) :Contents of neutrophilic granules42
Table	(4) :Tests of neutrophil function51, 52 & 53
Table	(5) :Complement proteins and their role in
	immunological processes62 & 63
Table	(6) :Additional proteins occurring in the alternative
	(Properdin) pathway64
Table	(7) :Membrane receptors for C3 derived fragments73
Table	(8a):Diseases associated with inherited complement
	deficiencies80
Table	(8b):Chromosomal location of identified complement
	genes80
Table	(9) :Reference values of C3 and C490
Table	(10):Summary of the pre-operative clinical picture of
	the patients
Table	(11): Pre-operative abdominal ultra-sonography111
Table	(12):Summary of pre-operative abdominal ultra-
	sonography findings112
Table	(13):Routine per-operative blood picture and ESR113
Table	(14):Statistical analysis of routine per-operative
	blood picture and ESR114-115
Table	(15):Pre-operative liver and kidney function tests116
Table	(16):Statistical analysis of pre-operative liver and
	kidney function tests117
Table	(17): Post-operative PMNLs Count
Table	(18):Statistical analysis of post-operative PMNLs
	Count

Table (19): Statistical analysis of PMNLs Count120
Table (20): Pre- and post-operative PMNLs phagocytic
function124
Table (21): Statistical analysis of PMNLs function125
Table (22): Pre- and post-operative complement fraction 3
(C3) levels127
Table (23): Statistical analysis of C3 Levels128
Table (24): Pre-and post-operative complement fraction 4
(C4) levels130
Table (25): Statistical analysis of C4 Levels
Table (26): Correlation between changes in the PMNLs
function and changes in C3 and C4 levels133

# List of Figures and Diagrams

## Figures

Figure (1): CT scan view of the spleen and its
relationships4
Figure (2): The ligaments of the spleen, seen in coronal
section4
Figure (3): The splenic structure and circulation6
Figure (4): Scheme illustrating the various processes
involved in neutrophil accumulation in tissue45
Figure (5): Convergence of classical and alternative
complement pathways56
Figure (6): Mechanisms of viral neutralization by complement
69
Diagrams
Diagram (1): The mean total WBCs count pre- versus post-
splenectomy in all groups and in each group
consideredseparately121
Diagram (2): The mean PMNLs % pre- versus post-splenectomy
· · · · · · · · · · · · · · · · · · ·
in all groups and in each group considered
in all groups and in each group considered
in all groups and in each group considered separately122
in all groups and in each group considered separately
in all groups and in each group considered separately
in all groups and in each group considered separately
in all groups and in each group considered separately

Diagram	(5): The mean C3 level pre- versus post-splenectomy
	in all groups and in each group considered
	separately129
Diagram	(6): The mean C4 level pre- versus post-splenectomy
	in all groups and in each group considered
	separately132
Diagram	(7a):Correlation between changes in the PMNLs
	function and changes in C3 level in all groups
Diagram	(7b):Correlation between changes in the PMNLs
	function and changes in C3 level in group A135
Diagram	(8a):Correlation between changes in the PMNLs
	function and changes in C4 level in all groups
Diagram	(8b):Correlation between changes in the PMNLs
	function and changes in C4 level in group A137

#### List Of Abbreviations

++	Mild
++	Moderate
+++	Severe
†	Enlargement or increased
1	Shrunken or decreased
В	Basophils
C1 INH	C1 esterase inhibitor
C3	Complement fraction 3
C4	Complement fraction 4
CD	Cluster of differentiation
CGD	Chronic granulomatous disease
CR	Complement receptors
DNA	Desoxy-ribo nucleic acid
DM	Diabetes mellitus
E	Eosinophils
FDCs	Follicular dendritic cells
FMLP	Formyl-methionyl-leucyl-phenylalanine
GM-CSF	Granulocyte-monocyte colony stimulating factor
Нb	Hemoglobin
H2O2	Hydrogen peroxide
Hi"b"	Hemophilus influenza type "b"
ICAM-1	Intercellular adhesion molecule
Ig	Immunoglobulin
ITP	Idiopathic thrombocytopenic purpura
K	Killer cells
Ki	Kidney
L	Lymphocytes
LAM-1	Endothelial leukocyte adhesion molecule
Lt	Left
MHC	Major histocompatibility complex
Mo	Monocytes

NBT Nitro-blue tetrazolium

NK Natural Killer cells

NS Non-significant

PMNLs Polymorphonuclear leucocytes

PSS Post-splenectomy Sepsis

RBCs Red Blood Cells

RNA Ribo nucleic acid

Rt Right

SGOT

SGPT

SLE Systemic Lupus Erythematosus

Sp. Spleen

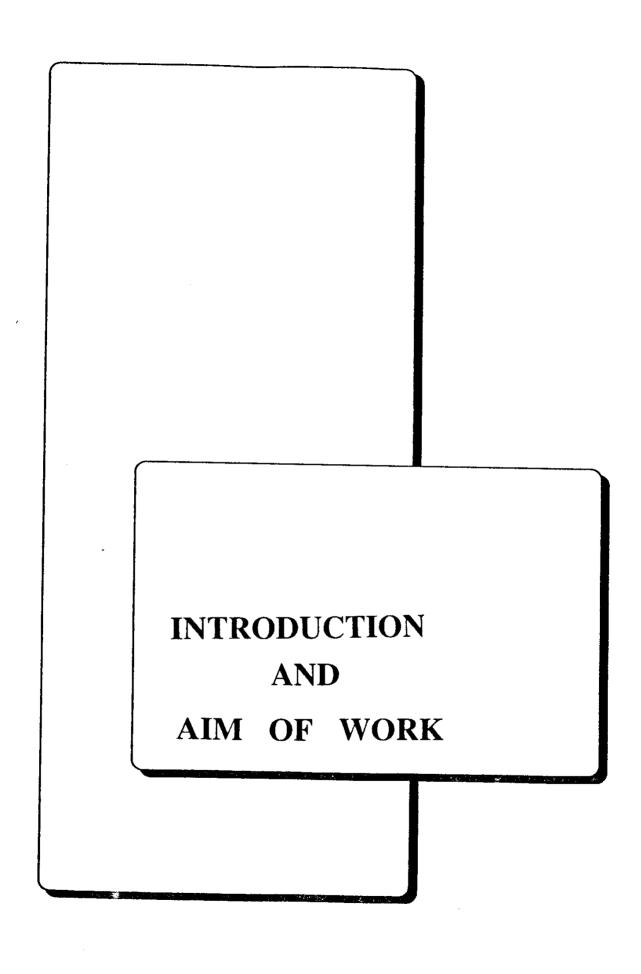
St. Stomach

TI-2 Thymus independent type 2 antigen

TNF Tumor Necrosis Factor

Y Years

WBCs White Blood Cells



#### INTRODUCTION AND AIM OF WORK

#### Introduction:

The spleen is highly efficient immunoregulating organ. It captures antigens, processes them and concentrates them in the white pulp where T and B cell interaction can lead to the formation of antibodies, particularly IgM in both primary and secondary responses. The splenic macrophages generate many components of the classic complement pathway and nearly half of the splenic cells have phagocytic ability and can clear immune complexes (Travassoli, 1990).

Overwhelming post-splenectomy sepsis occurs in both children and adults, and follows both elective and traumatic splenectomies (Morris, 1994).

Polymorphonuclear leucocytes (PMNLs) express receptors for the complement-derived chemotactic factors, C3b and C3b1 which are sparse on resting PMNLs but ignificantly increased in number following stimulation (Smolen and Boxer, 1990). Bound C3 and C4 Fragments act as opsonins enhancing phagocytosis (Walport and Lachmann, 1993).

The spleen-complement-polymorph interaction is an integral and important component of the defence mechanism against infection especially bacterial ones and loss of any of

the three elements may be reflected seriously on the other (Smolen and Boxer, 1990).

#### Aim Of Work:

The present work aims to study the effect of splenectomy on the PMNLs function in correlation to changes in complement levels [C3 & C4].

