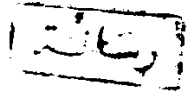


AIN SHAMS UNIVERSITY
Faculty of Medicine
Department of Obstetrics and Gynaecology



**ANTICIPATION OF FOETAL WELLBEING
IN SYSTEMIC LUPUS ERYTHEMATOSUS
SONOGRAPHIC, DOPPLER AND IMMUNOLOGIC STUDY**

THESIS

Submitted for Partial Fulfillment of
M.D. Degree in Obstetrics & Gynaecology

By

Tarek Mohamed Fathi Tamara
M.B.B. Ch., M.Sc. (Obstetrics & Gynaecology)
Ain Shams University

618.3
TAM

63u 89

Supervised By

Prof. Ibrahim El-Mitwally Samaha
Professor of Obstetrics and Gynaecology
Faculty of Medicine
Ain Shams University

Dr. Mohamed Alaa Mohy El-Din El-Ghannam

Assistant Professor of Obstetrics and Gynaecology
Faculty of Medicine
Ain Shams University

Dr. Moushira Fayek Helmy

Assistant Professor of Microbiology and Immunology
Faculty of Medicine
Ain Shams University



(1998)





ACKNOWLEDGMENT

*I would like to start my thesis by dedicating a very special thanks to **Prof. Dr. Ibrahim Samaha**, Prof of Obstetrics and Gynaecology, Faculty of Medicine, Ain Shams University, for the time, dedication, continuous attention, comments, encouragement, and his levels of excellency which up-leveled this work. His help and support will always be remembered. It should always be remembered that his gracious contributions were the cornerstone of this work.*

*I would like to express my coordinate feeling to **Dr. Mohamed Alaa El-Ghannam**, Assistant Prof. Obstetrics and Gynaecology, Faculty of Medicine, Ain Shams University, whose knowledge was extremely profitable to me and his character of solving any problems, made it easy for this project to go on smoothly.*

*A special thanks to **Dr. Moushira Fayek Helmy**, Assistant Prof. of Microbiology & Immunology, Faculty of Medicine, Ain Shams University, for her professional suggestions which helped in the creation of this work.*

*Thanks and appreciation to **Dr. Farid Negm**, Unit of Obstetric Ultrasound Imaging, Faculty of Medicine, Ain Shams University, who participated in the Doppler and US work of this study.*

Lastly but not leastly, I would like to thank the patients and controls who gave their blood willingly for research purpose.

CONTENTS

	Page
• Introduction & Aim of the Work	1
• Review of Literature	
- Immune system	4
- Physics of blood flow	14
- Ultrasound	19
- Physics of Doppler	24
- Recurrent foetal loss	35
- Autoimmune disease in pregnancy	39
- Systemic lupus erythematosus (SLE)	41
- Antiphospholipid syndrome (APS)	56
• Patients and Method	88
• Results	107
• Discussion	158
• Summary	166
• Conclusion & Recommendations	172
• References	172
• Arabic Summary	--

LIST OF TABLES

No.	Title	Page
1	Proposed etiologies for recurrent foetal loss	37
2	Circulating autoantibodies in patients with SLE	44
3	Revised criteria of the ARA for diagnosis of SLE	46
4	Recommendations for drugs usage in lupus	48
5	Historical diagnostic criteria for APS	57
6	Diagnostic criteria of APS	58
7	Exclusion criteria for primary APS	60
8	Drug induced APA	60
9	Prednisone treatment and preterm delivery	78
10	Results of live foetal birth on using LDA as a single treatment for APS	80
11	Live birth rate, using heparin as a single treatment for APS	83
12	Outcome of pregnancies with APS after different combined treatment modalities.	86
13	Demographic data of group I (56 cases)	107
14	Demographic data of group II (29 cases)	107
15	Demographic data of group III (15 cases)	109
16	Comparison between group I and group II regrding demographic data studied	109
17	Comparison between group II and group III regrding demographic data studied	112
18	Descriptive data of group I (56 cases)	113

	Page
19 Descriptive data of group II (29 cases)	113
20 Descriptive data of group III (15 cases)	114
21 Comparison between group I and group II regarding data studied	114
22 Comparison between group II and group III regarding data studied	115
23 Descriptive data of group A (39 cases)	119
24 Descriptive data of group B(17 cases)	119
25 Comparison between subgroup A and subgroup B regarding data studied	123
26 Evaluation of sensitivity of ACA IgG and anti β_2 GP1 in diagnosis of APS	124
27 Evaluation of sensitivity of ACA IgG anti β_2 GP1 in diagnosis of APS.	124
28 Correlation between ANA, ACA IgG and anti- β_2 GP1	125
29 Descriptive data of cases without exacerbations (40 cases).	129
30 Descriptive data of cases with exacerbations (16 cases)	129
31 Comparison between group of no exacerbation and group of exacerbation regarding data studied	133
32 Descriptive data of cases without pathological waveform (47 cases)	134
33 Descriptive data of cases with pathological waveform (3 cases)	134

34	Comparison between group of no pathological waveforms (PWF) and group of pathological waveforms regarding data studied	138
35	Descriptive data of cases with term delivery (31 cases)	139
36	Descriptive data of cases with preterm delivery(15 cases)	139
37	Comparison between group of term delivery and group of preterm delivery regarding data studied	143
38	Descriptive data of cases with foetal loss (10 cases)	144
39	Descriptive data of cases with living outcome (46 cases)	144
40	Comparison between group of no foetal loss (46 cases) versus group of foetal loss (10 cases) regarding data studied.	148
41	Association between APS and preterm delivery	149
42	Association between APS and foetal loss	149
43	Relation between exacerbation and preterm delivery	150
44	Relation between exacerbation and foetal loss	150
45	Relation between PWF and preterm delivery	151
46	Relation between PWF and foetal loss	151
47	Evaluation of diagnostic value of ANA in detecting preterm delivery	152
48	Evaluation of diagnostic value of ACA (IgG) in detecting preterm delivery	153
49	Evaluation of diagnostic value of anti β_2 GP1 in detecting preterm delivery	154

50	Evaluation of diagnostic value of ANA in detecting foetal loss	155
51	Evaluation of diagnostic value of ACA IgG in detecting foetal loss	156
52	Evaluation of diagnostic value of anti β_2 GP1 in detecting foetal loss	157

LIST OF FIGURES

No.	Title	Page
1	Immunoglobulin molecule	6
2	Doppler equation	34
3	Doppler indices	34
4	The hydra-an analogy of the multiple factors involved in lupus	42
5	The anticardiolipin ELISA	95
6	Normal aortic flow	101
7	Normal umbilical flow	102
8	Absent diastolic flow	103
9	Distribution of the studied cases	108
10	Mean age in the three studied groups	110
11	Mean parity in the three studied groups	111
12	Mean level of ANA in groups I, II and III	116
13	Mean level of ACA IgG in groups I, II and III	117
14	Mean level of anti- β_2 GP1 in groups I, II and III	118
15	Mean level of ANA in subgroups A & B	120
16	Mean level of ACA IgG in subgroups A & B	121
17	Mean level of anti- β_2 GP1 in subgroups A & B	122
18	Significant positive correlation between ANA and anti- β_2 GP1	126
19	Significant positive correlation between ACA IgG and anti- β_2 GP1	127

20	Significant positive correlation between ANA and ACA IgG	128
21	Mean level of ANA in patients with and without exacerbations	130
22	Mean level of ACA IgG in patients with and without exacerbation	131
23	Mean level of anti- β_2 GP1 in patients with and without exacerbation	132
24	Mean level of ANA in patients with and without pathological waveforms	135
25	Mean level of ACA IgG in patients with and without pathological waveforms	136
26	Mean level of anti- β_2 GP1 in patients with and without pathological waveforms	137
27	Mean level of ANA in SLE patients with term delivery and preterm delivery	140
28	Mean level of ACA IgG in SLE patients with term delivery and preterm delivery	141
29	Mean level of anti- β_2 GP1 in SLE patients with term and preterm delivery	142
30	Mean level of ANA in SLE patients with and without foetal loss	145
31	Mean level of ACA IgG in SLE patients with and without foetal loss	146
32	Mean level of anti- β_2 GP1 in patients with and without foetal loss	147