



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %



شبكة المعلومات الجامعية



بعض الوثائق الأصلية تالفة



شبكة المعلومات الجامعية



بالرسالة صفحات
لم ترد بالأصل

Expression of apoptotic signaling protien in oligospermic patients with or without Varicocele.

Thesis presented

By

Azza Gaber Antar Farag

M. B. B. Ch.M.Sc.

For partial fulfillment of M.D. Degree

In

Dermatology & Venereology

Supervised by

Prof.Dr. Mohamed A.Shoeib

Prof. Of Dermatology, Venereology &
Andrology.

Faculty of Medicine-Menoufiya
University

Dr. Moshira M. Abd Et-Wahed

Assis. Prof. Of Pathology
Faculty of Medicine-Menoufiya
University

Dr. Magda M. Hagaag

Assis. Prof. Of Dermatology,
Venereology & Andrology

Faculty of Medicine-Menoufiya
University

Dr. Sultan M. Sultan

Assis. Prof. Of Urology
Faculty of Medicine-Menoufiya
University

**Faculty of Medicine
Menoufiya University**

2004

616,68

B 0-91

Acknowledgement

Firstly and lastly thanks to my God ALLAH, the merciful, for his help.

There is no word to express my sincere gratitude and deepest appreciation to **Prof. Dr. Mohamed A. Shoeib** Prof. of Dermatology, Venereology and Andrology, Faculty of Medicine, Menoufiya University. His fatherly attitude, and enthusiastic encouragement. Who saved no effort to guide me in every respect. Without his advice, continuous engorgement and most invaluable suggestions and criticism, this study could not have been completed. I hope that I have been able to fulfill his aim of exactitude and scientific accuracy.

It is greatly honor to me to express my sincere thanks and gratitude to **Dr. Magda M. Haggag**, Assis. Professor of Dermatology, Venerology and Andrology, Faculty of Medicine, Menoufiya University, for her helpful advice, supervision and kind encouragement.

I wish to express my deep thanks and sincere gratitude to **Dr. Moshira M. Abed El-Wahed**, Assis. Prof. of Pathology, Faculty of Medicine, Menoufiya University for her unforgettable help, valuable advice, appreciable encouragement, careful follow up and very close supervision, during the preparation of this research, and technical performance all through this work.

I am also indebted to **Dr. Sultan M. Sultan** Assis. Prof. of Urology, Faculty of Medicine, Menoufiya University, for his helpful advice, close supervision, kind encouragement during the preparation of this work.

My thanks and gratitude are also to all my professors and colleagues in the Dermatology, Venerology and Andrology department, Faculty of Medicine, Menofiya University for their ever help.

Lastly, but not the least, I feel deeply thankful to all those who extended to me a helping hand during preparation of this work.



To My Parents
& My Family
With Love .

Contents

♦	Introduction	1
♦	Aim of the work	3
♦	Review of Literature	4
	- Apoptosis	4
	- Varicocele	51
	- Spermatogenesis	73
	Varicocele & Apoptosis	90
♦	Subject and methods	102
♦	Results	114
♦	Discussion	158
♦	Summary	174
♦	Conclusions&Recommendations	177
♦	References	178
♦	Arabic summary	229

List of tables

	Page
Table (1) : Comparison of morphology of apoptosis and necrosis :	32
Table (2): Comparison of age in years in the three studied groups	112
Table (3): Comparison between right and left testicular sizes of group II and group I.	115
Table (4): Comparison between right and left testicular sizes of group III and group I.	115
Table (5): Comparison between right and left testicular sizes of group II and group III.	116
Table (6): Comparison between seminogram parameters of group II and group III.	118
Table (7): Comparison between serum testosterone and FSH levels of group II and group I.	120
Table (8): Comparison between serum testosterone and FSH levels of group III and group I.	120
Table (9): Comparison between serum testosterone and FSH levels of group II and group III.	121
Table (10): Comparison between results of H&E stain of testicular tissues (Johnsen's score and apoptotic index) of group II and group I.	125
Table (11): Comparison between results of H&E stain of testicular tissues (Johnsen's score and apoptotic index) of group III and group I.	125
Table (12): Comparison between results of H&E stain of testicular tissues (Johnsen's score and apoptotic index) of group II and group III.	126

Table (13): Correlations between Johnsen's score and testicular sizes, varicocele grade and seminogram parameters of varicocele patients (Group II)	135
Table (14): Correlations between Johnsen's score and hormonal profile & of varicocele patients (Group II)	136
Table (15): Comparison between results of Immunohistochemical stains of testicular tissues (Fas & FasL) of group II and group I.	138
Table (16): Comparison between results of Immunohistochemical stains of testicular tissues (Fas & FasL) of group III and group I.	139
Table (17): Comparison between results of Immunohistochemical stains of testicular tissues (Fas & FasL) of group II and group III.	140
Table (18): Effect of varicocele site on apoptotic index and Fas stain of germ cells and Leydig's cells	149
Table (19): Effect of varicocele grade on apoptotic index, Fas stain of germ cells and Leydig's cells and FasL.	150
Table (20): Correlations between Johnsen's score and testicular tissues studies of varicocele patients (Group II)	151
Table (21): Correlations between Fas staining (of germ cells and Leydig cells) and testicular sizes, varicocele grade and seminogram parameters of varicocele patients (Group II)	152
Table (22): Correlations between Fas staining (of germ cells and Leydig cells) and hormonal profile and H&E testicular tissues studies of varicocele patients (Group II).	153

List of figures

	Page
- Fig1: Ultrastructural changes seen in necrosis (left) and apoptosis (right) (<i>Kumar et al., 1997</i>).	33
- Fig 2: Pathways for apoptosis (<i>Roth and Reed 2002</i>)	35
- Fig 3: Anatomy of the internal spermatic venous system. 1, left internal spermatic (testicular) vein with reflux; 2, left adrenogonadal bypass; 3, collateral bifurcations, 4, cremasteric veins; 5, deferential veins; 6, left side varicocele; 7, right internal spermatic vein with renal venous outlet; 8 right (adrenogonadal bypass; 9, right side varicocele. (<i>Comhaire and Gerris, 1996</i>).	53
- Fig 4: Development of the different germ cells (<i>Wienbauer et al.,2001</i>)	75
- Fig 5: Main steps of human spermatogenesis.. (<i>Clermont. 1993</i>)	79
- Fig 6: Programmed cell death during spermatogenesis (<i>Kierszenbaum, 2001</i>)	87
- Fig 7 : Comparison of age in years in the three studied groups.	113
- Fig 8: Comparison between serum FSH levels of the studied groups..	122
- Fig 9 : Comparison between serum testosterone levels of the studied groups.	123
- Fig 10 : Comparison between Johnsen's score of the studied groups.	127
- Fig 11: Comparison between apoptotic index (AI) of the studied groups.	128

- Fig 12 : A case of obstructive azoospermia showing seminiferous tubules with many spermatozoa but the germinal epithellium disorganized with sloughing and obliteration of lumen Johnsen's score 8) (H&E x200).	129
- Fig 13 : A case of oligozoospermia (non varicocele) showing seminiferous tubules with no spermatozoa and no spermatid but several spermatocysts present (Johnsen's score 5) (H&E x200).	129
- Fig 14: A case of non varicocele oligozoospermia showing seminiferous tubules, some with no spermatozoa nor spermatid with sloughing in the center of the tubules and one tubule showing only spermatogonia (H&E x200).	130
- Fig 15: High power view of the pevious case showing seminiferous tubule with only spermatogonia (H&E x400).	130
- Fig 16: A case of varicocele showing seminiferous tubules with only spermatogonia with some sloughing of the cells in the center of the tubules (Johnsen's score 3) (H&E x200).	131
- Fig 17 : A case of varicocele showing seminiferous tubules with only spermatogonia with some marked sloughing of the cells in the center of the tubules with almost no living cells (H&E x200).	131
- Fig 18 : A case of varicocele showing seminiferous tubules with no germ cells and only Sertoli cells present (Johnsen's score (2) (H&E x200).	132

- Fig 19 : A case of varicocele showing seminiferous tubules with marked hyalinization with almost no cellular lining Johnsen's score (1) (H&E x200).	132
- Fig 20 : Seminiferous tubules showing apoptotic cell in the center(arrow). The cells showing condensed chromatin and dense eosinophilic cytoplasm. (H&E x400).	133
- Fig 21 : The center sloughed cells in the seminiferous tubules showing many apoptotic cells in the center (arrow). with condensed chromatin and dense eosinophilic cytoplasm and surrounded with halo. (H&E x400).	133
- Fig 22 : Comparison between apoptotic index (AI),Fas positive germ cells, of the studied groups.	141
- Fig 23 : Comparison between Fas positive Leydig cells of the studied groups.	142
- Fig 24 : Comparison between FasL positive Sertoli cells in the studied groups.	143
- Fig 25 : A case of obstructive azoospermia showing seminiferous tubules with few scattered positive cells for Fas immunostaining (arrow). Immunoperoxidase (DAB) (x200).	144
- Fig 26 : A case of oligozoospermia (non varicocele) showing seminiferous tubules with the central cells within the tubules (arrow), as well as the interstitial cells (head arrow) showing positive for Fas immunostaining. Immunoperoxidase (DAB) (x400).	144
- Fig 27 : A case of oligozoospermia (varicocele);most of the interstitial Leydig cells showing positive for Fas immunostaining. Immunoperoxidase (DAB) (x400).	145