Male Reproductive Medicine COURSE SPECIFICATION

MD Andrology, Reproduction & Sexually transmitted infections

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) **Programme offering the course:**	**MD Andrology and Sexually transmitted infections**
(2) **Department offering the programme:**	**Dermatology, Andrology and STDs**
(3) **Department responsible for teaching the course:**	**Dermatology, Andrology and STDs**
(4) **Part of the programme:**	**second part**
(5) **Date of approval by the Department`s council**	**3/4/2016**
(6) **Date of last approval of programme specification by Faculty council**	**9/8/2016**
(7) **Course title:**	**Male Reproductive Medicine**
(8) **Course code:**	**ANDRO 615 ANT**
(9) **Total teaching hours:**	**180 lectures** **240 clinical**
(10) **Credit hours**	**12 lectures** **8 clinical**

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows:

1- Provides MD students with detailed basic and advanced knowledge about most cases of male infertility.

2- Provides MD students with detailed andrologic clinical skills.

3-Helps MD students to propose treatment strategies for most cases of male infertility

4- Provides MD students with an ethical attitude towards patients, relatives, seniors, tutors and colleagues.

(2) Intended Learning Outcomes (ILOs):

On successful completion of the course, the candidate will be able to:

A- Knowledge and Understanding

A1- Recognize the following:

1. Reproductive neuro-endocrinology
2. Testis anatomy and functional organization
3. Sertoli cell (morphology & function)
4. Leydig cell (morphology & function).

A2- Discuss Physiology of

1. Testicular Function (spermatogenesis and steriodogenesis),
2. Epididymis (physiology and sperm motility)
3. Male accessory sex organs.

A 3- Explain the following:

1. Sperm Maturation
2. Sperm transport in male & female genital systems
3. Fertilization.

A 4- Outline the classification of male infertility disorders

A5- Discuss different diagnostic techniques:

1. Imaging Diagnostic techniques
2. Endocrine Laboratory Diagnosis.
3. Cytogenetic and Molecular Genetic Investigations.
4. Semen Analysis.
5. Sperm Quality and Function Tests
6. Testicular Biopsy and Histology: role and indications.
7. Microbial & immunological tests

A 6- Describe Normal and Abnormal pubertal development.

A 7- Explain Diseases of the Hypothalamus, the Pituitary Gland and Other pre-testicular causes (def, causes, pathogenesis, diagnosis, differential diagnosis, treatment)

A 8- Discuss Disorders at the Testicular Level (def, causes, pathogenesis, diagnosis, differential diagnosis, treatment):

A 9- Explain Disorders of Androgen Target Organs (def, causes, pathogenesis, diagnosis, differential diagnosis, treatment).

A 10- Identify the Ageing Male and Late-Onset Hypogonadism

A 11- Recognize Diseases of the Seminal Ducts (def, causes, pathogenesis, diagnosis, differential diagnosis, treatment)

A 12- Discuss Testicular Dysfunction in Systemic Diseases and Iatrogenic factors and effect of STDs on male infertility.

A 13- Discuss Environmental Influences on Male Reproductive Health and endocrine disruptors.

A 14- Outline Gynecologic disorders Relevant to Andrology

A 15-Describe different types of therapy:

1. Androgen Therapy.
2. Empirical Therapies for Idiopathic Male Infertility

3. Assisted Reproduction and preimplantation genetic diagnosis
4. Cryopreservation of Human Spermatozoa and testicular tissue.
5. Gene therapy and regenerative medicine in andrology

A 16-Explain Psychology of Male Fertility Disorders.

A 17- Identify Male contribution to contraception and approaches to hormonal male contraception and Vasectomy and Re-fertilization.

A18- Recognize Andrological emergencies:

1. Testicular torsion
2. Testicular trauma
3. Penile trauma.

A 19- List Ethical Aspects of Reproductive Medicine

B- Intellectual skills

B1- Analyzes information obtained from infertile patients regarding history, clinical examination & investigations.

B2- Design an appropriate diagnostic plan for evaluation of infertile patients.

B3- Interpret the results of different investigations related to male infertility.

B4- Puts a therapeutic plan taking into consideration risk benefits ratio & cost effective to the patients.

C- Professional/practical skills:

C1- Makes clinical decisions based on evidence & obtained findings.

C2- Selects appropriate investigations.

C3- Interpret results obtained from history, clinical examination & diagnostic testing.

C4- Plans a safe management after discussion with the patient himself or a relative.

C5- Fully document the patient's history & examination findings.

C6- Take care sexually transmitted infections using universal precautions.

D- Transferable skills & Communication

D1- Work effectively within the team of colleagues and tutors.

D2- Manage time, services and resources effectively.

D3- Set priorities, skills and needs for lifelong learning.

D4- Deal professionally with scientific organizations, journals, and associations.

D5- Respect the patient's privacy & autonomy.

D6- Respond to patients needs superseding self-interest.

D7- Justify appropriate attitude, clinical ethics & legal responsibilities.

D8- Present information clearly in different, written, oral or electronic forms.

D9- Communicate effectively with patients, families & the public across their broad range of socioeconomic & cultural backgrounds.

D10- Alleviate patient's anxiety & establish trust

D11- Interact effectively with team work, other physicians & other health care providers.

D12- Explain to the patients and/or relatives the nature of the disease, diagnostic & therapeutic options & recommend life style modifications in ethical way.

D13- Advocate for quality and optimal patient care.

(3) Course content:

Two modules:

Module 3= 6 credit hours

Module 4= 6 credit hours

Andrology module No. 3

(**Male Reproductive Medicine**)

Subject	Teaching hours
1. Reproductive neuro-endocrinology (1/2)	2
2. Reproductive neuro-endocrinology (2/2)	2
3. Testis anatomy and functional organization	2
4. Spermatogenesis	2
5. Sperm Maturation	2
6. Sertoli cell (morphology & function)	2
7. Leydig cell (morphology & function)	2
8. Testicular steriodogenesis	2
9. Epididymis (physiology and sperm motility)	2
10. Physiology and functions of Male accessory sex organs	2
11. Sperm transport in male & female genital systems	2
12. Fertilization and Sperm egg interaction	2
13. Classification of causes of male infertility	2
14. Semen analysis and its interpretation (1/2)	2
15. Semen analysis and its interpretation (2/2)	2
16. Sperm Quality and Function Tests (1/2)	2
17. Sperm Quality and function tests (2/2)	2
18. Endocrinal evaluation of infertile male	2
19. Testicular Biopsy and Histology: role and indications	2
20. Microbial & immunological tests	2
21. Imaging studies	2
22. Cytogenic & molecular genetics investigations	2
23. **Def, Etiology , pathogenesis, diagnosis, differential diagnosis and management of Diseases of the Hypothalamus and the Pituitary Gland:**	
a) Kallmann syndrome	1
b) Idiopathic hypogonadotropic hypogonadism	1
c) Prader-Labhart-Willi syndrome	1
d) Constitutionally delayed puberty	2

e) Secondary disturbance of GnRH	1
f) Pasqualini syndrome.	1
g) Hyperprolactinaemia	2
h) Panhypopituitarism	2
i) isolated FSH deficiency	1
j) Gnadotrophines releasing tumors	1
24. Other pre-testicular causes (def, causes, pathogenesis, diagnosis, differential diagnosis, treatment): CAH, Thyroid defects, Haemochromatosis, others	2
25. Disorders at the Testicular Level (def, causes, pathogenesis, diagnosis, differential diagnosis, treatment):	
a) -Congenital and Acquired anorchia	1
b) -Maldescended (Undescended) testes	2
c) -Varicocele and relation to male fertility	2
d) –Orchitis	1
e) Sertoli-cell-only syndrome	1
f) Spermatogenic arrest	1
g) –Globozoospermia	1
h) -Immotile cilia syndrome	2
i) -Disorders of sexual Development	2
j) -Genetic disturbance in gonadal Differentiation	1
k) -Klinefelter syndrome	2
l) -Gonadal dysgenesis	1
m) -Persistent oviduct	1
n) -Leydig cell hypoplasia	1
o) Disorders of steroid synthesis	2
p) -Male pseudohermaphroditism	2
q) -XYY syndrome	1
r) -Noonan syndrome	1
s) -Structural chromosomal anomalies	1
t) -Testicular tumors related to infertility	1
u) -Disorders caused by exogenous factors or systemic disease	2
v) - Idiopathic infertility	2
Total	٩٠

Andrology module No. 4

(Male Reproductive Medicine)

Subject	Teaching hours
1. Psychology of Male Fertility Disorders	2

2. Ageing Male and Late-Onset Hypogonadism	4
3. Effect of STDs on male infertility.	٢
4. Male contribution to contraception and approaches to hormonal male contraception and Vasectomy and Re-fertilization	6
5. Andrological emergencies:	
a) Testicular torsion	2
b) Testicular trauma	2
c) Penile trauma	2
6. Ethical Aspects of Reproductive Medicine	2
7. idiopathic OAT	2
8. Leukocytospermia	2
9. Asthenospermia,	2
10. Normal and Abnormal pubertal development	6
11. Disorders of Androgen Target Organs (def, causes, pathogenesis, diagnosis, differential diagnosis, treatment).	
a) -Complete Androgen Insensitivity syndrome	2
b) -Reifenstein syndrome	2
c) -Prepenile scrotum bifid and hypospadias	2
d) -Bulbospinal-muscular atrophy	2
e) -Perineoscrotal hypospadias with pseudovagina	2
f) -Estrogen resistance	2
g) -Estrogen deficiency	2
h) -Gynecomastia.	٤
i) - Accessory sex organs developmental disorders.	٤
12. Etiology , pathogenesis, diagnosis, differential diagnosis and management of Diseases of the Seminal Ducts:	
a) -Inflammation of the seminal tract and genital glands	2
b) -Obstructions of seminal tract	4
c) -Cystic fibrosis (CBAVD (congenital bilateral aplasia of the vas deferens)	4
d) Disturbance of semen liquefaction	2
e) Immunologic infertility	4
13. Environmental Influences on Male Reproductive Health and endocrine disruptors.	4
14. Gynecologic disorders Relevant to Andrology	2
15. Different types of therapy **of male infertility**:	
a) Androgen Therapy.	٣
b) Empirical Therapies for Idiopathic Male Infertility	٣

c) Assisted Reproduction and preimplantation genetic diagnosis	2
d) Cryopreservation of Human Spermatozoa and testicular tissue.	2
e) Gene therapy and regenerative medicine in andrology	2
Total	90

(4) Clinical training:

Subjects	Training hours
1. Detailed History taking from infertile male**.**	**20**
2. General Physical Examination of infertile male**.**	**20**
3. Local genital Examination of infertile male**.**	**20**
4. How to select proper investigations for better case evaluation	**20**
5. Performance of Doppler US examination, Transrectal ultrasonography, Scrotal sonography, Scrotal color duplex, Penile color duplex	**20**
6. Reading and interpretation of different Imaging Diagnostics, Endocrine Laboratory Diagnosis, Cytogenetic and Molecular Genetic Investigations.	**20**
7. Reading and interpretation of Sperm Quality and Function Tests.	**20**
8. Performance, Reading and interpretation of Semen Analysis.	**20**
9. Detection of Normal and Abnormal pubertal development sequences and manifestations.	**20**
10. Performance, Reading and interpretation of Testicular Biopsy and Histology.	**20**
11. Types of Therapy for Male Infertility and when to use Assisted Reproduction techniques	**20**
12. Dealing with different Andrological emergencies	**10**
13. **Ethical Aspects of Reproductive Medicine**	**10**

Total	**240**

(5) Teaching methods:

5.1: Seminars, Lectures

5.2: Workshops

5.3: Grand meetings

5.4: Case presentations

5.5: Specialty conferences

5.6: Hand on training

5.7: Travelling fellowships

(6) Assessment methods:

6.1: Written exam for assessment of knowledge and intellectual ILOs

6.2: Structured Oral exam for assessment of knowledge, intellectual and transferable ILOs

6.3: OSCE Clinical exam for assessment of knowledge, intellectual and transferable and practical ILOs

6.4 continuous assessment exams for assessment of knowledge and intellectual ILOs

Assessment schedule:

MCQ Exam at the end of the semester

Final Assessment after 24 months

Marks of each Assessment:

MCQ Exam = 50 marks.

Final Written exam = 200 marks

Final Clinical OSCE exam = 100 marks

Final Oral exam= 100 marks

(7) References of the course:

7.1: Hand books: Andrology Department staff handouts

7.2: Text books: Andrology (3rd Edition, Springer, 2010), infertility in practice Advances in sexual medicine (Research Signpost, 2009)

7.3: Journals:,: International Journal of Impotence Research, Journal of sexual Medicine, Journal of Andrology, Andrologia, International journal of Andrology, Andrology Archives, Fertility& sterility Journal.

7.1: Websites: www.IJIR..org, www.telemedicine.org, www.asrm.org, www.aua.org, www.andrologysociety.com , www.andrology.com , www.asiaandro.com, www.eshre.org

(8) Facilities and resources mandatory for course completion:

1- Daily andrology Outpatient clinic

2- Fully Equipped Lecture halls

3- Department library

4- Faculty library

5- An equipped Clinical andrology unit

6- Andrology laboratory

Course coordinator:

Prof. Samir Elhanbaly, MD

Chairman of the department:

Prof. Ibrahim A. Abdel-Hamid, MD

Date: 3/4/2016