Chlamydial Infection in Obstetrics and Gynaecology

Essay

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By

KHALED IBRAHIM M. ATTIA

M.B, B.Ch

Ain Shams Univrersity

Supervisors

Dr. IBRAHIM YASSINE ABOU SINNA

Prof. of obstet & Gynaec.

Faculty of Medicine

Ain Shams University

Dr. MOUNIR M. FAWZY EL HAO

Assit. Prof. of obstet & Gynaec.

Faculty of Medicine

Ain Shams University

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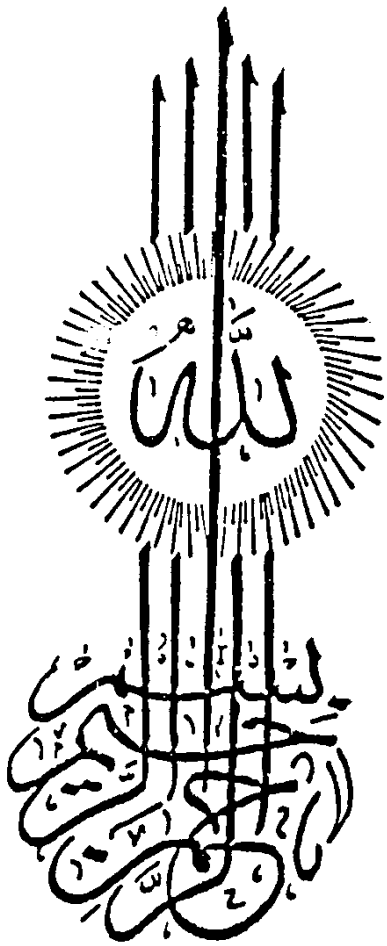

قالوا سُبْحَانَكَ

لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

صَدَقَ اللهُ الْعَظِيمُ

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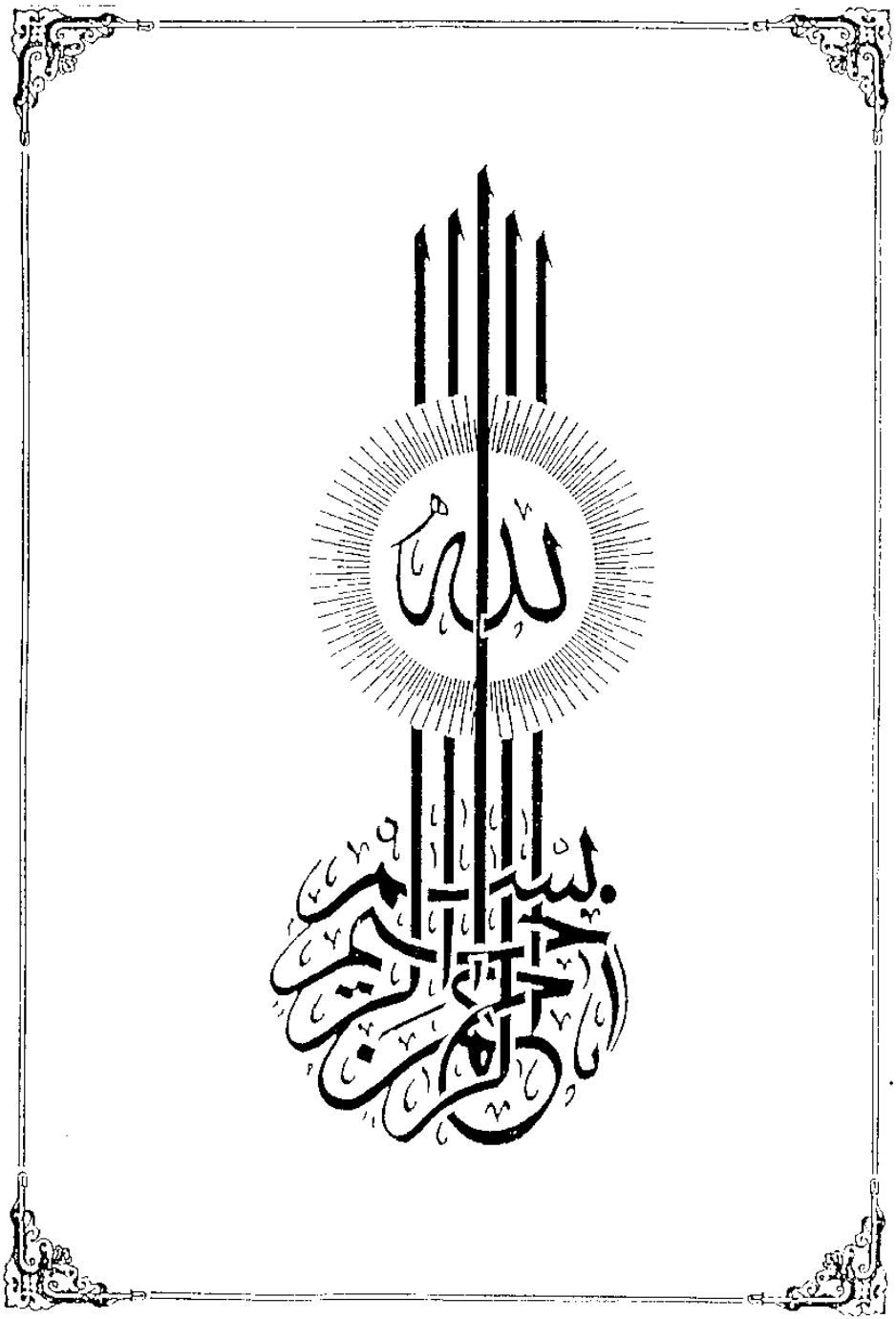

CONTENTS

LIST OF TABLES AND FIGURES

LIST OF PHOTOGRAPHS

PREFACE

An Arab scholar once said what could be translated as follows:

" I found that no one ever writes a book without saying the next day : if this part was changed, it would have been better, and if that was added it would have been better still, and if this part came before, it would have been nicer and if that was omitted it would have been more beautiful. This is a great lesson and it shows how imperfect man is ".

قال العماد (الاصفهانى) : " إنى رأيت انه لا يكتب انسان كتاباً فى يومه إلا قال فى غده : لو غير هذا لكان أحسن . لو زيد كذا لكان يُستحسن ولو قُدم هذا لكان أفضل ولو تُرِك هذا لكان أجمل وهذا من أعظم العبر وهو دليل على إستيلاء النقص علّى جُملة البشر " .

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Finally I express my appriciation for every one who helped me to produce such a work.

Introduction :

The human diseases caused by chlamydia trachomatis (obligate intracellular human pathogen) have been recognized since antiquity. Trachoma is described in Egyptian papyruses. Lymphogranuloma veuereum (LGV.) was described by John Hunter in the eighteenth century. The extragenital tract infection, such as nongonococcal urethritis (NGU) and neonatal ophthalmia, caused by c. trachomatis were not recognised untill it was possible to categorize these conditions following the identification of gonococci by cultural & smear methods & the subsequent introduction of silver nitrate drops to prevent ophthalmia neonatorum.

It became apparant that conjunctivitis in neonates & urethritis in adult male both had non - gonococcal aetiology . (Sweet and Gibbs , 1985).

C. trachomatis has long been known as the causative agent of trachoma, a disease which is hyperendemic in many developing countries and considered to be the leading preventable cause of blindness in world (Jones, 1974).

Dunlop and his colleagues (1964) at the institute of ophthalmology in London were the pioneer group that provided much of the impetus for continued research on chalmydial genital tract infections.

During the past decade, an increasing number of sexually transimitted infections have been attributed to C. trachomatis (Schachter, 1978).

Today C. trachomatis is the most prevalent sexually transmissble agent in Westren society (Jones et al., 1986) .

C. trachomatis has been implicated in an expanded spectrum of diseases.

C. trachomatis is the major aetiological agent for (NGU) (Holmes et al., 1975), post gonococcal urethritis (Schachter, 1978), and epididymitis in yong men (Berger et al., 1978).

Among women C. trachomatis has been associated with mucopurulent cervicitis (Tail et al., 1980), endometritis (Paavonen et al., 1985), pelvic inflamatory disease (PID) (Sweet et al., 1983), infertility due to tubal factors (Gump et al., 1983). infertility without tubal obstruction (Kane et al.,1984) , acute urethral syndrome (Stamm et al., 1980) cervical cytologic atypia & cervical neoplasia have been associated with an increased prevelence of antichamydial antibodies in several studies (Paavonen et al., 1979; Schachter et al., 1982).

Other long term consequences of chlamydial infection include ectopic pregnancy (svensson et al., 1985)

In pregnant women vertical transmission resulting in chalamydial conjunctivitis and /or pneumonia is well documented (Schachter and Grossman, 1983).

Ante natal chlamydial infections have been correlated with premature ruptured membranes, deliveries and perinatal mortality (Martin et al., 1982 ; Harrison et al, 1983 ; Sweet et al., 1987) .

Also C. trachomatis has been implicated in post partum infection (Wager et al., 1980).

Recent reports indicate that C-trachomatis may cause endocarditis (Jones et al., 1982 b) , myocarditis (Grayston et al., 1981) and Fitz - Hugh - Curtis Syndrome (Darougar et al., 1981) .

Aim of the Work

This review will primarily focus on gynecological disorders known to be caused by or associated with C. trachomatis. In addition, it will entail academic study concentrating on microbialogical nature of the organism, possible mechanisms underlying disease production and updating of the laboratory techniques utilized for isolation, culturing and identification.

The treatment modalities proposed for each clinical entity will also be discussed..

(I) THE ORGANISM

Taxonomy :

Because of the unique developmental cycle that differentiate them from all other micro-organism.

The genus chlamydia has been placed in its own family chlamydiaceae of the order chlamydiales and within the genus two species are recognized : Chlamydia psittaci and chlamydia trachomatis (Storz and Page, 1971) .

" TRIC agent " an acronym previously used for the trachoma-inclusion conjunctivitis agent has fallen into disuse because the terms is easily confused with the populer jargon for another genital tract pathogen , trichomonas.

It has been snggested to use the term " trachoma organisms " regardless the anatomic site or disease involved to describe the previously called (TRIC agents) which could lead to terms such as " trachoma urethritis " and " trachoma cervicitis " this suggestion will not be followed in this review.

Trachoma is an eye disease , although trachoma & inclusion conjunctivitis are in fact two forms of eye disease caused by the same organism or may even be different aspects of the same clinical spectrum. The two diseases have different epidemiologic patterens

The term trachoma should be reserved in its historical and still useful niche (Schachter, 1978) .

Species designation - though too broad - is used e.g. c. trachomatis urethritis.

Chlamydia trachomatis seems to be specifically human pathogen (except for a few strains cause rodent pneumonitis). Table 1 .

Table 1: Clinical spectrum of sexually transmitted chlamydia trachomatis infectons.

Men	Women	Infants
. Urethritis . Postgonococcal urethritis . Epididymitis . Prostatitis . Proctitis . Conjunctivitis . Pharyngitis . Lymphogranuloma venereum. . Reiter's syndrome . Sterility	. Cervicitis . Bartholinitis . Endometritis . Salpingitis . Perihepatitis . Urethritis . LGV . Conjunctivitis . Pharyngitis . Sterility. . Dysplasia* . Post partum endometritis . Prematurity . Still birth.	. Conjunctivitis . Pneumonia . Asymptomatic pharyngeal carriage Asymptomatic GIT carriage Otitis media

(After Sweet and Gibbs, 1985 a) .

* *Indicate relationship not firmly established*

Chlamydia psittaci is the causative agent of psittacosis, common Pathogen in avian species and lower mammals, and is differentiated from chlamydia trachomatis on the basis of

sulphonamide resistrance and failure of inclusions to stain with iodine . Chlamydia trachomatis is sensitive to sulphonamides and has iodine-staining inclusions (Ward, 1983). (Table 2).

Chlamydiae : Taxonomy

Chlamydia psittaci	Chlamydia trachomatis
- Resistant to sulphonamides - Inclusions do not stain with iodine. - Common pathogen in birds and lower mammals.	- sensitive to sulphonamides - Inclusions stain with iodine - Mostly of human origin

Although all chlamydiae share a common genus specific antigen , chlamydia trachomatis may be further differentiated on serological basis. There are currently 15 serotypes recognized (Grayston and Wang, 1975).

These 15 serotypes are responsible for 3 major groups of infections . Three of these serotypes (L1, L2, L3) represent the agents causing Lymphogranuloma venereum. Serotypes (A,B,Ba and C) are the agents responsible for endemic blinding trachoma (Dwyer et la., 1972).

In remaining serotypes of chlamydia trachomatis (D, E, F, G, H, I, J, K) are the sexually transmitted agents that cause cervicitis, salpingitis, urethritis, epididymitis, acute urethral syndrome , inclusion conjunctivitis, newborn pneumonia and perinatal infections (Schachter, 1978). (Table 3).

Table (3) : Chamydia : Taxonomy and association with human diseases

Species	*Serotypes	Disease
C.Psittaci	Many unidentified serotypes	psittacosis
c.trachonatis	L1,L2,L3	lymphogranuloma venerum
c.trachomatis	A,B,Ba,C	Hyperendemic blinding trachoma
c.trachomatis	D,E,F,G,H,I,J,K	inclusion conjunctivitis(adult & newborn) nongonococcal urethritis, cervicitis, salpingitis proctatis, epidydimitis&pneum-onia of new borns

*Predominent , but not exclusive association of serotype with disease. AfterSchachter 1978 .

Microbiology :-

Chlamydiae are obligatory intracellular parasites once considered to be large viruses susceptible to the action of some antimicrobials or antibiotics,

However, a more sophisticated definition of viruses and bacteria has allowed the recognition that chlamydiae are bacteria like and definitely not viruses (Mouder , 1964; Idem , 1966.) . They differ from viruses in having two nucleic acids and in having a discrete cell wall, quite analogus in structure & content to those of the gram - negative bacteria.
(Manire and Tamura , 1967) .