SCREENING OF CHLAMYDIA TRACHOMATIS ANTIBODIES IN SOME OBSTETRIC COMPLICATIONS IN AIN-SHAMS MATERNITY HOSPITAL

THESIS

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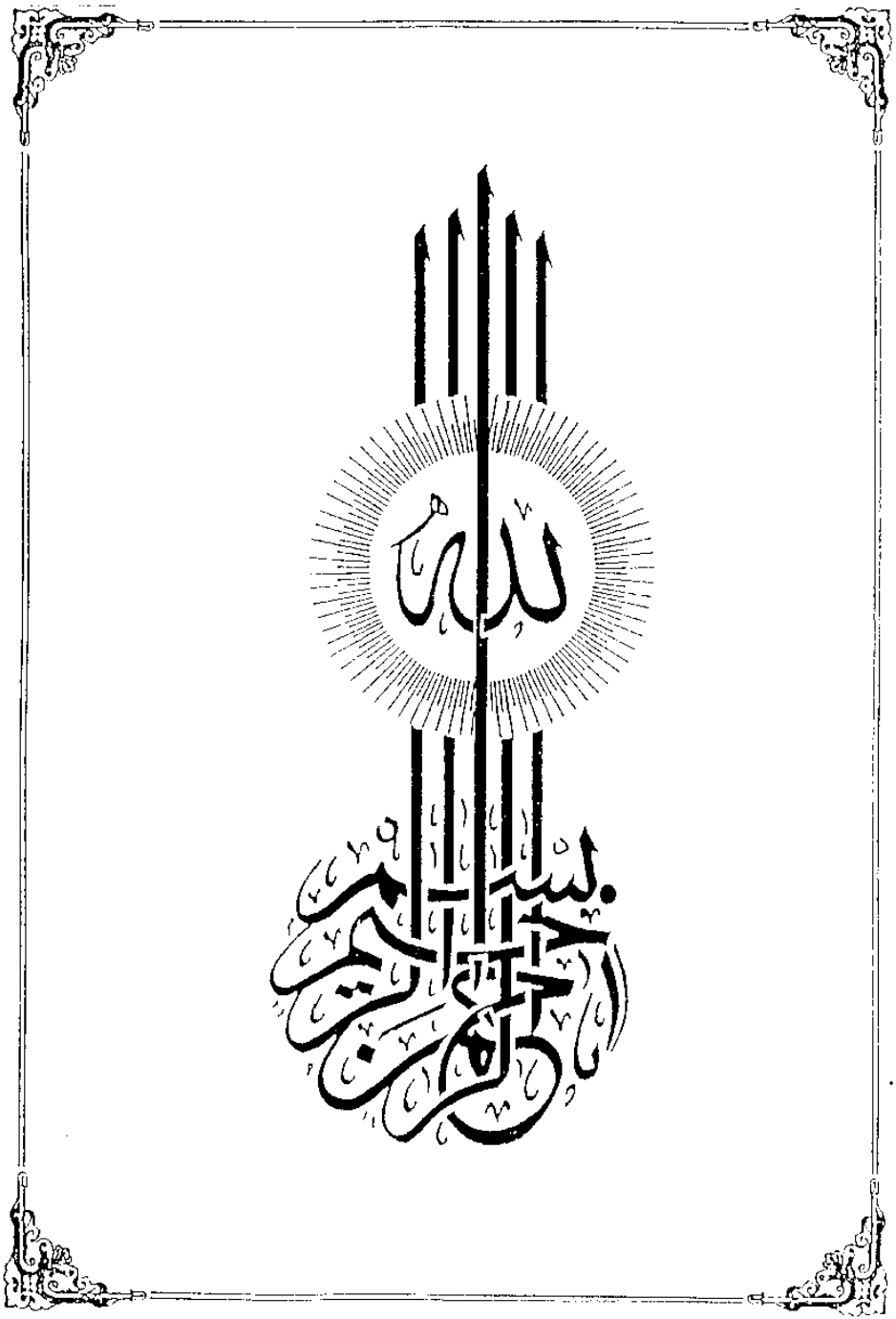

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INTRODUCTION

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Chlamydia trachomatis infection has been recognized as a major sexually transmitted disease of worldwide importance. (Harrison et al., 1983).

Chlamydial infections are more common than gonococcal infections, and it is currently estimated that there are upwards of 3 million chlamydial infections annually in the United States (Sweet et al., 1983).

The pathogenic intracellular bacterium, Chlamydia trachomatis is recognized as the etiological agent of a large spectrum of human diseases (Amortegui et al., 1985).

Infections caused by Chlamydia trachomatis affect men, women, and newborn infants. (Sweet et al., 1983).

In men, chlamydia has been isolated from several anogenital sites including the urethera, epididymis, prostate, and rectum (Thompson and Washington, 1983). It is a major cause of nongonococcal uretheritis (NGU). postgonococcal uretheritis (PGU) and epdidymitis (Sweet et al., 1983). Also, chlamydial uretheritis is apparently one cause of Reiter's syndrome (Kousa et al., 1978).

In newborn infants, it is well documented, that infants born through an infected birth canal are likely to become infected with Chlamydia trachomatis. Among these infants the risk of inclusion conjuctivitis ranged from 18% to 50% and the risk of pneumonia from 11% to 18% (Sweet et al., 1987).

There is also a suggestive evidence that chlamydia plays a role in otitis media, obstruction of nasal passages, and lower airway disease (bronchiolitis) in young infants (Sweet et al., 1983).

In women, the anatomic site within the female genital tract that is most commonly infected with Chlamydia trachomatis is the cervix (Thomspon and Washington, 1983).

Chlamydia trachomatis causes mucopurulent endocervicitis, endometritis, acute salpingitis, and has been linked with tubal factor infertility and ectopic pregnancy (Sweet et al., 1987).

Also, it has been identified as an important cause of acute uretheral syndrome and pelvic inflammatory disease (Bump, 1985).

On the other hand, Cevinini et al., (1981) found a significant higher incidence of histological dysplasia in women with glandular ectopia who had antichlamydial antibodies than in those without.

There is also an etiological relationship between Chlamydia trachomatis and combined salpingitis and perihepatitis (Fitz-Hugh - Curtis Syndrome). (Dalaker et al., 1981).

The effect of maternal chlamydial infection on pregnancy outcome and perinatal complications such as preterm delivery, premature rupture of membranes, and postpartum endometritis remains controversial. Although several studies have suggested a link between cervical chlamydia and preterm delivery, low birth weight infants and perinatal mortality, others have not confirmed such an association. Resolution of this controversy will have major implications for treatment and prevention strategies. (Sweet et al., 1987).

Aim Of The Work:

To find any correlation between Chlamydia trachomatis infection and some obstetric complciations.

REVIEW

The Organism

The genus Chlamydia is in the family Chlamydiacae of the order Chlamydiales and within the genus two species are recognized: Chlamydia psittaci and Chlamydia trachomatis (Thompson and Washington, 1983).

Chlamydia psittaci is the causative agent of psittacosis, a common pathogen in avian species and lower mammals Chlamydia trachomatis seems to be specifically human pathogen (except for a few strains of rodent origin).

Chlamydia psittaci is differntiated from Chlamydia trachomatis on the basis of sulfonamide resistance and failure of inclusions to stain with iodine. Chlamydia trachomatis is sensitive to sulfonamides and has iodine-staining inclusions (Ward, 1983).

Chlamydia trachomatis is an obligatory intracellular bacterium (Page, 1974).

It is an extremely well adapted human parasite which depends on the host cell for nutrient and energy (Moulder, 1966).

Although all Chlamydiae share a common genus specific antigen, Chlamydia trachomatis may be further differentiated on serological basis. There are currently 15 serotypes recognized (Wang and Grayston, 1974). (Table I).

The Chlamydia trachomatis serotypes are responsible for three major groups of infections. Three of these serotypes (L_1, L_2, and L_3) represent the agents causing lymphogranuloma venereum which appear to have different receptor sites and a much broader tissue in vivo and host spectrum in vitro than the other Chlamydia trachomatis strains. In addition the lymphogranuloma venereum serotypes are more invasive than the remaining Chlamydial serotypes. (Thompson and Washington, 1983).

Serotypes A, B, Ba and C are the agents responsible for endemic blinding trachoma. The remaining serotypes of Chlamydia trachomatis (D, E, F, G, H, I, J, K) are sexually transmitted agents which cause inclusion conjuctivitis , newborn pneumonia, uretheritis, cervicitis, epididymitis, salpingitis, acute uretheral syndrome and perinatal infections (Sweet et al., 1985).

Table I

Chlamydiae: Taxonomy and association with human disease

Chlamydia psittaci	Chlamydia trachomatis
- Resistant to sulfonamides	Sensitive to sulfonamides
- Inclusion don't stain with iodine	Inclusions stain with iodine
- Common pathogen in birds and lower mammals.	Mostly of human origin.

Serotypes	Disease	Serotypes	Disease
Many	psittacosis	A,B,Ba,C	hyperendemic blinding trachoma.
		D,E,F,G, H,I,J,K	Inclusion conjuctivitis, non gonococal uretheritis, proctitis epididymitis, pneumonia of newborn.
		L_1,L_2L_3	Lymphogranuloma venereum

After (Sweet, 1985.)

The Chlamydiae are separated into their own order, Chlamydiales on the basis of unique growth cycle which distinguishes them from all other microorganisms. (Page, 1974) (Fig. 1).

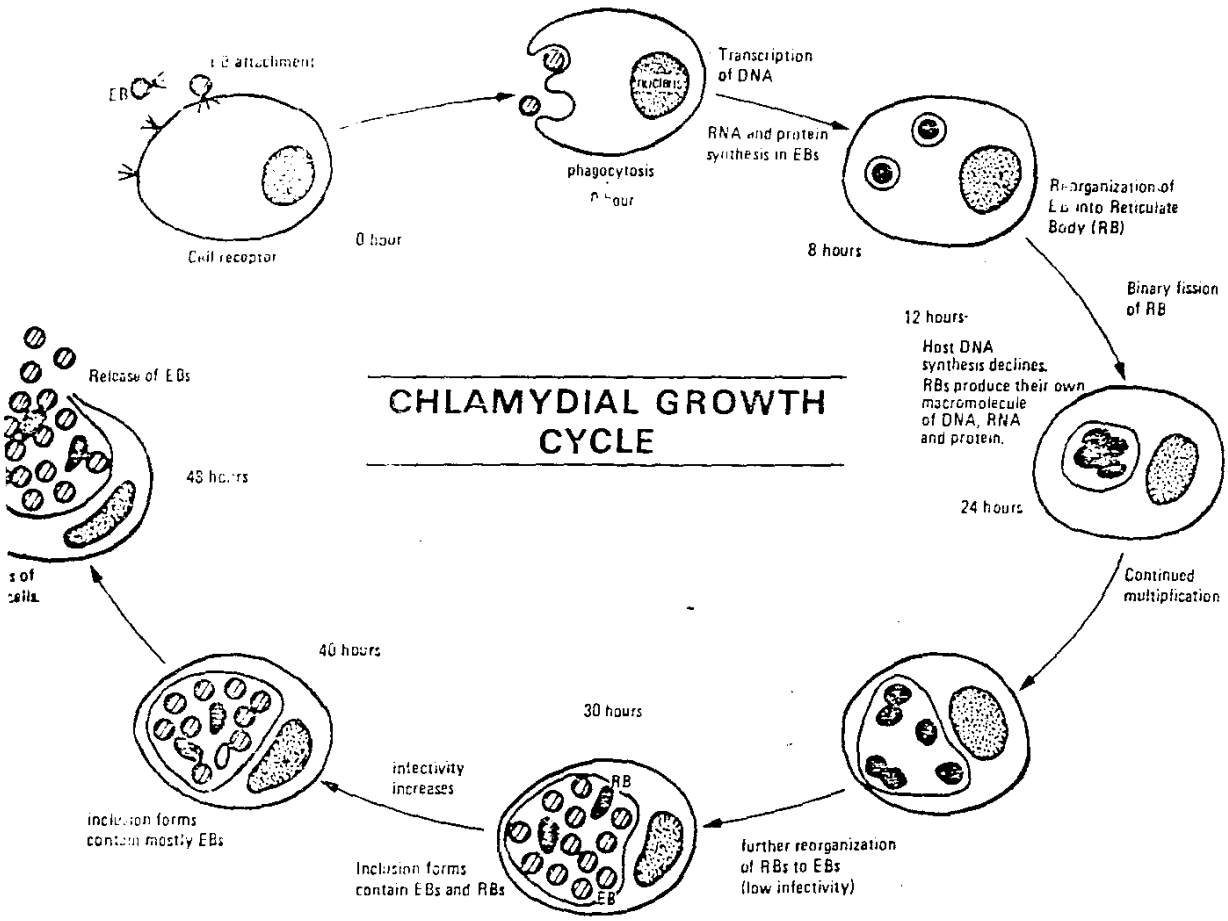

FIGURE 1. Chlamydial growth cycle. EB, elementary body; RB, reticulate body.

Fig. 1: Chlamydial growth cycle. E.B., elementary body. RB., reticulate body.
(Thompson and Washington, 1983).

The Chlamydial Organism Exists in Two Forms:

1- The elementary body (EB) which is the infectious particle and capable of entering uninfected cells.

2- The initial body or reticulate body (RB) which multiply by binary fission to produce the inclusions that are identified in properly stained cells.

The initiation of infection depends on what appears to be specific attachement sites on suceptible host cells (Kuo, 1973).

The attachment process may involve specific receptor sites, presence of these sites could determine which cells are naturally suceptible (Levy, 1979).

After the Chlamydial particle (the elementary body is the infectious particle) attaches to the host cell, it is ingested by a phagocytic process which is similar to ordinary bacterial phagocytosis (Friis, 1972). This process is an enhanced phagocytosis, this is directed by the Chlamydiae, chlamydial particles are selectively taken up by the host cells. Intracellulary Chlamydiae exist within a cytoplasmic vacuole. Chlamydiae remain within this phagosome throughout their entire growth