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## Why is Chlamydia Infection a Sensitive Issue for Women?

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### Introduction

The answer is simple. Infections have been with us since time of antiquity. Some infections are symbiotically beneficent and non-virulent while others are quite injurious to health and well-being. Everyone, from the fetus to the aged is challenged with infection of one type or the other in the course of a lifetime. Indirect infections of the fetus are direct infections of the mother such as syphilis, and more recently the Zika virus that results in microcephaly. Some of the obvious infections that affect women most are the Human-immuno-deficient virus (HIV), tuberculosis and malaria which are still public health burdens in some parts of the world, especially the developing nations.

Global statistics on maternal and infant morbidity and mortality still indicate a high burden [1]. The United Nations (UN) has made efforts to reduce some of these burdens through its "Global Strategy for Women's and Children's Health" and its "Every Woman Every Child" movement. The UN also released its new "Global Strategy for Women's, Children's, and Adolescents' Health (2016-2030)" in September 2015 to demonstrate renewed obligation to improving the health of the world's most vulnerable women and children [2].

Sexually transmitted diseases as well as issues related to pregnancy not strongly focused upon though these issues are vita sources of healthy life years lost for women. For example, approximately 92.6 million new cases of the curable STIs (*Chlamydia trachomatis*, *Neisseria gonorrhoeae*, *Treponema pallidum* and *Trichomonas vaginalis*) occur in Africa, 78.5 million in Southeast Asia and 128.2 million new cases are estimated to be in the Western Pacific [3, 4]. *Chlamydia trachomatis* deserves particular attention because aver 100 million new cases occur annually with about the same proportion of adult infectivity at any given point in time [5].

In women aged 15-49 years, *C. trachomatis* prevalence rates in these Africa, Southeast Asia and Western Pacific have been recorded as 5.1 million (2.6%), 5 million (1.1%), and 20.5 million (4.3%) respectively [5].

Chlamydia is a "quiet" infection and appears to be a silent killer of women or, in the least, contribute to their illness and their infertility. *Chlamydia trachomatis* was initially isolated from people who presented with lymphogranuloma venereum or

LVG, though chlamydia infections of the female or male genital tracts were not been extensively scrutinized until the 1970s.

*Chlamydia trachomatis* may be classified as a Neglected Tropical Diseases (NTD). It is one of a group of organisms that share the characteristics of both viruses and bacteria (Gram-negative) of which particular serotypes (A, B, Ba and C) cause eye infections and other serotypes (D-K) mainly cause urogenital infection [6].

The female genital tract is quite extensive and offers wide space and opportunity for intracellular obligate parasites such as *Chlamydia trachomatis* to invade. This organism is quite difficult to reveal and validate because the medium as well as cell culture required for its demonstration are not easily available to clinicians and laboratory specialists [7]. Therefore, diagnosis and management of Chlamydia infections are usually based on symptomatology, clinical impressions and non-culture technique. In some cases, diagnosis could be arrived at from by detecting inclusion bodies within the cytoplasm of cells that derive from urethral or cervical swabs.

Though usually asymptomatic, women with *Chlamydia trachomatis* often present with clinical syndromes of cervicitis, urethritis, endometritis, Bartholinitis, salpingitis and perihepatitis. A woman with Chlamydia infection first presents with muco-purulent cervicitis which progresses to case ascending genital and/or urethral tract infection with dire consequences such as ectopic gestation from scratched fallopian tubes and premature labor [8, 9]. It may also lead to severe conjunctivitis or pneumonia in the baby.

It is also possible that *Chlamydia trachomatis* could be the harbinger of cancer of the cervix and other cancers in males and females who have sexual relationship. *Chlamydia trachomatis* may also be implicated in primary or secondary infertility since its presence in the female genital tract might contribute to unilateral or bilateral tubal blockage.

Clinical manifestations of *Chlamydia trachomatis* in men include urethritis, epididymitis, prostatitis, proctitis and Reiter's syndrome [7]. Though far-fetched, chlamydia infection in men may be a risk-factor for benign and/or malignant prostatic hypertrophy (B/PH).

One thing is certain though – the variety of Chlamydial infections closely resembles those caused by the gonococcus

infections. Hence the management of Chlamydial infections is similar to that of gonococcal infections, though the two organisms are different [10].

Many women go about their daily routine unaware that they are infected with Chlamydia. Most do not know that such an infection exists. Hardly is there any survey on Chlamydial infection reported whereas, there is a plethora of reports in other infections such as staphylococcus, tuberculosis, bacteria vaginosis and venereal diseases. The extent of damage done to the female genital tract and the out-of-pocket expenses to control this infection has not yet been quantified. Moreover, how Chlamydial infection contributes to perceived quality of life of women in reproductive age group is still uncertain. Many unintended abortions and infertility occur world-wide but whether *Chlamydia trachomatis* is a risk factor in any of these is not yet revealed.

Furthermore, the prevalence of *C. trachomatis* is not certain, though a proxy-prevalence of 5.6% among those 15-24 years old women in the US has been reported [11]. Recent studies however indicate that the prevalence of *C. trachomatis* in the US is 17.4% and that adolescents testing positive for *C. trachomatis* infection were significantly more likely to test positive for gonorrhoea [12].

In Dakar, Senegal, West Africa, the prevalence and heterogeneity of *Chlamydia trachomatis* infections in a cohort of female sex workers were determined giving an overall prevalence of cervical chlamydial infection of 28.5% (206 of 722), and most of these infections were asymptomatic [13].

Screening for *C. trachomatis* is not usually done in developed countries and much less so in developing countries. Gynecologists, Antenatal Clinics and Infertility Clinics should endeavor to look out for Chlamydia infection among in patients who patronize these health facilities. In addition, to protect the health of women, especially their fertility, a screening program should be funded by governments, UN Agencies such as WHO and other health related organizations. This is a duty the world owes women.

There is a growing need for evaluating psychosocial, attitudinal and behavioral influences, as well as the presence of other sexually transmitted diseases (STDs) when deciding risks for *Chlamydia trachomatis*.

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