

CHLAMYDIA TRACHOMATIS INFECTION IN ANTENATAL WOMEN IN UYO, NIGERIA

by

E. O. Jimmy^{1*}, E. Udoma², E. Umofia³, E. Umo⁴, O. E. Bassey⁵, I. R. Udotong⁶,
M. Idiong⁷ & G. Akpan⁸

¹Department of Physiology, University of Uyo, Akwa Ibom State, Nigeria, ²Department of Obstetrics and Gynaecology, University of Calabar Teaching Hospital, Cross River State, Nigeria, ³Department of Microbiology, Federal Medical Centre Uyo, Akwa Ibom State, Nigeria, ^{4,5}Department of Pharmaceutics, Faculty of Pharmacy, University of Uyo, Akwa Ibom State, Nigeria, ^{5,7}Department of Public Health, Federal Medical Centre, Uyo, Akwa Ibom State, ^{6,8}Department of Microbiology, University of Uyo, Akwa Ibom State, Nigeria

Abstract

A longitudinal survey using a sensitive immuno comb diagnostic technology in determining the population of antenatal women of ages between 15-45 years at risk of *Chlamydia trachomatis* infection was carried out on five hundred and eighty pregnant women. *Chlamydia trachomatis* prevalence rate was 14.8%. History of induced abortion significantly increased the rate of infection among these women ($P > 0.028$). Also previous history of infants being treated for ophthalmic neonatorum was significantly higher in positive women than the negative ($P > 0.012$). It is recommended that pregnant women with history of induced abortion and those with previous history of their infants being treated for ophthalmia neonatorum should have routine screening done antenatally, for prompt treatment to prevent complications.

Introduction

Chlamydia trachomatis is a causative agent of trachoma and sexually transmitted diseases (STD) occurring more frequently than *Neisseria gonorrhoea* in the developing world (Hagley and Costa, 1989).

Most disturbing is the clinical relationship with the reproductive system of female infertility (Azenabor and Eghafona, 1993). However, women still achieve pregnancy inspite of this infection and it is often related to the duration of the disease. Apart from its effect on the genital tract, *Chlamydia trachomatis* is a known cause of ophthalmia neonatorum occurring three weeks after birth, and if not properly managed, may lead to formation of trachoma and permanent blindness.

The incidence of *Chlamydia trachomatis*

Genital tract infection may be higher than it is assumed, since a greater proportion of women may be symptomless (Lim *et al.*, 1989). For example, a study at the Barbeton Citizen Hospital, Ohio, USA, to determine the incidence of asymptomatic chlamydial infection in pregnant women compared to the incidence of asymptomatic *Neisseria gonorrhoea* infection found that of 69 patients screened 7.2% tested positive for *C. trachomatis*, while no positive culture for *N. gonorrhoea* was

obtained (Hagley and Costa, 1989). According to the Nigeria demographic and health survey, only thirty per cent of Nigerian women deliver in health institutions (Nigeria Demographic and Health Survey, 1992), majority deliver in the homes of traditional birth attendants and spiritual churches (Udoma, Ekott & Asuquo, 1998), where no investigation is done on pregnant women. For this reason, the true incidence of this condition among our pregnant women in Nigeria is not known. Most studies tend to focus on the effect of this organism as a causative agent in infertility. For example, Azenabor (1990) reported on association of *C. trachomatis* antibodies with genital contact disease in women in Benin City. Studies reporting exclusively on the prevalence of this infection among our pregnant women are rare. It was in view of this that the study was carried out on our pregnant women to know the prevalence rate of this condition with the aim of recommending some measures to prevent it.

Methodology

The study was conducted in University of Uyo Teaching Hospital in Akwa Ibom State between January 1, 2003 to December 31, 2004. Akwa Ibom State has an estimated population of 3,651,097 million of which 281,136 are females of reproductive age. The

*Corresponding author

infected was higher than 12.3% of married ones, social class did not influence the chlamydial sero prevalence in this study ($P > 0.699$).

Table 2 shows the reproductive characteristic influencing chlamydial prevalence rate, among our pregnant women, parity, history of previous stillbirth, history of spontaneous abortion and neonatal deaths did not influence the chlamydial prevalence rate among our pregnant women.

However, history of induced abortion significantly increased the rate of infection in these women ($P > 0.028$). Previous history of infants being treated for ophthalmia neonatorum was significantly higher among chlamydial positive women [18(20.9%)], than the negatives 3(0.6%), ($P > 0.012$) unfortunately non of these infants had eye swab taken for microscopy, culture and sensitivity, hence the causative organism was not determined.

Discussion

The study records *Chlamydia trachomatis* prevalence rate of 14.8% among pregnant women in Akwa Ibom State, Nigeria. This is higher than the report by Blenk *et al.* (1986).

The prevalence rate in this study is based on the subject studied (pregnant women) with low tendency for sexual promiscuity (Nielson *et*

al., 1990). However, this rate may not reflect the true situation in this community as it is hospital based and again, there is generally a low acceptance of antenatal care in our community (Udoma, Ekott & Asuquo, 1999). The prevalence of *C. trachomatis* in pregnant women carried a heavy burden than it is assumed in the general population. The pregnant women can spread the infection as any other women but in addition, the unborn child stands a risk of contracting the infection from the mother and the attendant consequences of conjunctivitis and blindness, if diagnosis and treatment is not effected early. Again, the presence of *C. trachomatis* infection in pregnant women in this study implies that they stand a risk of secondary infertility due to tubal factor if not treated.

Social class does not seem to have influence in *C. trachomatis* infection. This is probably due to the fact that heterosexual intercourse the major mode of transmission is practiced by all classes of women. History of abortion did not seem to influence the prevalence of chlamydial infection rate in the study. However, of the women studied (95.2%) gave a history of induced abortion and only 11.1% of the women with history of spontaneous abortion were chlamydial

Table 1: Socio-Demographic Characteristics of Pregnant Women with Chlamydial Infection

Variable	Pregnant Women +ve for Chlamydia	Pregnant Women -ve for Chlamydia	Total Number (%)	P-value
Age:				
< 20	19(13.4)	123(86.6)	142(100)	0.368
20 – 30	29(16.4)	147(83.6)	176(100)	
31 – 40	21(13.5)	134(86.5)	155(100)	
> 40	17(15.9)	90(84.1)	107(100)	
Marital Status				
Married	41(12.3)	292(87.7)	333(100)	0.896
Unmarried	45(28.0)	202(72.0)	161(100)	
Social Class				
I	0(0.0)	41(100)	41(100)	0.699
II	8(12.9)	54(87.1)	62(100)	
III	18(15.9)	95(84.1)	133(100)	
IV	27(15.7)	144(84.3)	171(100)	
V	33(17.1)	160(82.9)	193(100)	

positive. The use of unsterile instrument may be a cause of this. Abortion is not legalized in Nigeria, consequently women frequently resort

to clandestine and dangerous methods of pregnancy termination that results in high rate of infection including, *C. trachomatis*, besides;

women who go for induced abortion are likely to be women with multiple sexual partners. Evidence abounds that infectious genital disease is closely associated with promiscuity being more frequent in sexual active women (Nelson *et al.*, 1990; Azenabor & Eghaforia, 1997).

Chlamydia trachomatis carries a heavier burden in pregnant women, the risk of placental transfer to the foetus and the consequences of blindness if not treated and long-term complication tubal infertility. It is advised that routine screening of pregnant women with history of induced abortion or previous history of their infants being treated for ophthalmia neonatorum. Infants with

Table 2: Reproductive Characteristics Influencing Chlamydial Infection Among Pregnant Women

Variable	Pregnant Women +ve for Chlamydia (N = 86)	Pregnant Women -ve for Chlamydia (N = 494)	Total Number (%)	P-value
Parity:				
0	31(23.3)	102(76.7)	133(100)	0.593
1 - 4	29(13.0)	194(87.0)	223(100)	
> 5	26(11.6)	198(88.4)	224(100)	
History of Abortion				
Yes	45(34.9)	84(65.1)	129(100)	0.15
No	41(9.1)	10(90.1)	451(100)	
Types of Abortion				
Induced	40(95.2)	2(4.7)	42(100)	0.028
Spontaneous	5(11.1)	40(88.9)	45(100)	
No Abortion	41(8.3)	452(91.7)	493(100)	
History of Previous Still Birth				
Yes	0(0)	14(100)	14(100)	1.00
No	86(15.2)	480(84.8)	566(100)	
Neonatal Death				
Yes	0(0)	2(100)	2(100)	0.386
No	86(14.9)	492(85.1)	578(100)	
Previous Hx of Treated Ophthalmia neonatorum				
Yes	22(11.5)	3(12.0)	25(100)	0.012
No	64(88.0)	491(88.5)	555(100)	

ophthalmia neonatorum should be properly investigated and treated. A follow-up check should be done to ensure adequate treatment to prevent long-term complication of permanent blindness.

Although the cost of screening is expensive, it is worthwhile, as that will enable prompt and adequate treatment and eradication of the disease. Family planning as a measure of preventing unwanted pregnancy

should be encouraged. Above all, there is need to improve on the social status of our women by giving free and compulsory education at all levels and gainful employment to many. It is hoped that this will go a long way in reducing the prevalence of this infection in our society.

Reference

- Azenabor, A. A., Eghafona, N. O. (1997). Association of *Chlamydia trachomatis* antibodies with genital contact disease in women in Benin City, Nigeria. *Trop. Med. Int. Hlth*, 2, No.4, pp.389-392.
- Blenk, H. Kuwert, T. Zoller, I. (1986). Diagnosis of chlamydial infections in sexually transmitted diseases. *Lab. Medica* III: 23-27.
- Hagley, M. T., Costa, A. J. (1989). Asymptomatic chlamydial infection in pregnant women. *Ohio Med.*, 85: 905-907.
- Handfield, H. H., Jasman, L. L., Roberts, L. P. (1986). Criteria for selective screening for *Chlamydia trachomatis* infections in women attending family planning clinics. *Journal of the American Medical Association*, 13: 1730-1734.
- Lim, K. B., Thirumoorthy, T., Nadarajah, M., Sing, E. H., Yuen, W. S. (1989). Endocervical chlamydial infection in women attending a sexually transmitted disease clinic. Singapore: *Singapore Medical Journal*, 30: 167-169.
- Nielson, J. B., Kallemp, H. G., Ingvarlsen, A. D. (1990). Frequency of *Chlamydia trachomatis* in women under 35 years of age consulting general practitioners for gynaecologic or obstetric reason. *Ugeskr-Laeger*, 152: 1377-1379.
- Olusanya, O., Okpere, E., Ezimokhai, M. (1985). The importance of social class in voluntary fertility control in developing countries. *W. Afri. J. Med.*, 4: 205-207.
- Udoma, E. J., Ekott, M. I., Asuquo, E. E. J. (1999). Maternal mortality from obstructed labour in South Eastern Nigeria: the role of spiritual churches. *Inter. J. Obstet Gynaecol.*, 67: 103-105.