

RISK FACTOR FOR SEROCARRIAGE OF UREAPLASMA UREALYTICUM AMONG WOMEN OF VARIOUS AGE RANGE AND PROFESSION

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ABSTRACT

A study to determine the risk factor for sero-carriage of ureaplasma urealyticum among women of various age ranges and profession in both Nnewi and Okija was conducted in a total of 93 subjects. Ureaplasma urealyticum antigen was analysed using ELISA method with commensally prepared kit (UUAB KIT). Using internal built control. Data was collected by standard questionnaire. All method was as instructed in the user's manual. Result revealed that out of the 93 female in nnewi (single and married) that were sampled 3(3.2%) showed a positive result to Ureaplasma urealyticum while 90 (96.8%) blood sample showed a negative result to Ureaplasma urealyticum. Risk factors for serocarriage in descending order were : Average earning which is one of the socio economic factors (33.3% of the samples has the highest serocarriage of this organism with a statistical difference of (0.002), Educational level(100% of the samples with a tertiary educational level has the highest serocarriage of this organism with a statistical difference of (0.024), Number of sex partner(66.7%) of samples who has only one sex partner has the highest serocarriage of this organism with a statistical difference of (0.028), Age, State of origin, Profession, Screening of Ureaplasma urealyticum, Disease status, Having heard of Ureaplasma, Importance of Ureaplasma screening and symptoms with no marked statistical differences. In summary the serocarriage of Ureaplasma urealyticum can be said to be of low incidence probably because of the area of study and indiscriminate use of antibiotics in the area of study, a higher range of serocarriage was obtained in subject from Nnewi, None were found positive in Okija .The most significant risk factors for Ureaplasma urealyticum includes: lifestyle, number of sex partner and socio-economic factors such as average earning.

KEYWORDS: Risk factor, Serocarriage, Ureaplasma urealyticum, Women of various age range, Profession

INTRODUCTION

It is important pathogens that causes urogenital infection and accelerated newborn delivery in pregnant women. Urealyticum can colonize women genital tract and be isolated from the amniotic fluid of women with adverse pregnancy outcome. It is also associated with conditions characterized by urethritis in men and genital tract infection in female, bone and joint disease, blood transfusion, sexual transmitted disease, nosocomial and respiratory infection (vogel et al., 2015). The primary cause of ureaplasma urealyticum is the result of transmission of an infectious agent by another person by one or more of the following: Saliva, air, cough, faecal-oral, route, surfaces, blood, needle, blood transfusion, sexual contact, mother to fetus e.t.c. (Rodriguez et al., 2014). Ureaplasma urealyticum have been proposed as a

risk factor for prostate cancer development (Shepherd et al., 2014). Ureaplasma urealyticum are sexually transmitted bacteria among humans implicated in a variety of disease state including but not limited to non gonococcal urethritis, infertility, adverse pregnancy outcomes, chorioamnionitis and bronchopulmonary dysplasia in neonates. Ureaplasma urealyticum is necessary for detection as well as determination of pathogenic factors in order to understand the pathogenesis of diseases associated with ureaplasma infections.

A risk factor is variable associated with either increased risk. Ureaplasma urealyticum is extremely contagious, is most often spread through unprotected sexual contact including oral, vaginal and anal contact (kwak et al.,

2014). *Ureaplasma urealyticum* brings with them an increased risk of pregnancy complication such as premature membrane rupture, vaginitis and preterm birth. The accepted risk factor for *ureaplasma urealyticum* includes low immunity, older age, low socioeconomic status, poor health. The carriage rate of *ureaplasma* species was widespread in women who gave birth at <35 weeks (Cassel *et al.*, 2014). In men, the symptoms can be very mild such as slight clear discharge, urethral irritation, redness at the tip of urethra. In female, the symptoms are often mimic visual vaginal discharge. However, women who has been diagnosed with “recurrent thrush” or *Candida* infection should get tested for *ureaplasma* as *Candida* should be easily treated unless these is predisposed disease such as diabetes. Women with fertility problem should also get tested for *ureaplasma* (Aaltone *et al.*, 2002).

The reduction in the level of immunity is an important risk factor for the entrance of infection agent into the vagina. Vaginal colonization of these pathogenic bacteria mainly causes vaginosis postpartum fever, pelvic inflammatory disease, infertility, postpartum specimen, preterm labour, premature rupture of the membrane, systemic neonatal infection and preterm birth (Redelinghugs *et al.*, 2014). *Ureaplasma urealyticum* have been associated with respiratory disease in premature newborn, but their role in the pathogenesis of the respiratory distress syndrome (RDS) is unclear. *Ureaplasma urealyticum*, a common commensally of the lower genital tract has been observed as an important opportunistic pathogen during pregnancy (Waite *et al.*, 2014).

Aims of the study

This research will help us to determine the risk factor for serocarriage of *Ureaplasma urealyticum* among women of different age range and profession in Ihiala local government area and Nnewi north local government, Anambra state, Nigeria.

MATERIALS AND METHODS

Study area

This research will be conducted in two different towns okija and otolo both in ihiala and nnewi north local government area respectively.

Study population

The study consist of female population of age range between 18-65 years who may be married or single.

Research design

This is a cross sectional area study designed to determine the risk factor for sero carriage of *ureaplasma urealyticum* among women of various age range and profession in both Ihiala local government area and Nnewi north local government area.

Ethical consideration

Ethical approval was obtained from the faculty of health sciences and technology, Nnamdi Azikiwe University, Nnewi Campus Ethical Committee.

Data collection

Questionnaire (open ended and closed system) was used for data collection of variables in Demographic, social status, symptoms and personal data.

Sample technique

Random sampling was used based on sex, age ranges and profession.

Sample collection/storage

5ml of blood was aseptically collected based on method described in (Chesbrough, 2005). Serum was extracted and stored at -4°C and analysed within 2 weeks.

Subject recruitment

Subjects were recruited based on age, sex and profession. Random selection method was used for subject recruitment.

Sample analysis

Ureaplasma urealyticum antigen was analysed using elisa method with commensally prepared kit (UUAB KIT). Internal built control will be used. All method was as instructed in the user's manual and references of (negative control OD x3) will be used as normal cut-off point.

Procedure

1. All reagents was allowed to reach room temperature for 15 minutes before use.
2. The wash buffer was diluted at the rate of 1:40 dilution with distilled water before use.
3. 2 drops (100µL) of sample diluents was add in the corresponding hole, 5µL Sample was added in the corresponding hole (Do not add in the blank hole). 1 drop (50µL) of the positive control and negative control was added to the positive control hole and negative control hole. The sample corresponding to the number of micro plate, each plate was provided with a negative control 2 holes, positive control 1 holes and blank control 1 holes.
4. Shaked gently to mix for 30s. Water bath with the sealing plate in 37°C for 20 minutes.
5. At the end of the incubation, removed and discarded the plate cover. Took out, wash buffer was added to each well for 20 seconds. Repeated 5 times and patted to dry. After the final washing cycle, turned the plate over onto blotting paper or clean towel and tapped it to remove any remainders.
6. Respectively added HPR Conjugate 50µL (Didn't add in the blank hole).
7. Water bathed with the sealing plate membrane sealing plate in 37°C for 10 minutes. Repeated the wash step for 5 times as in step 5.

8. Added substrate A (50µL) and substrate B 1 drop (30µL) (Didn't add in the blank hole). Water bathed with the sealing plate membrane sealing plate in 37°C for 10 minutes.
9. Added 50µL Stop Solution to each well (didn't add in the blank hole). Mixed gently by shaking, measure the results within 10 minutes. Microplate reader at 450nm wavelength is set at (suggested dual wavelength 450nm, each well was measured A value with blank well as zero).

Data analysis

Data was analysed using SPSS (Statistical package for social science version 21). Simple prevalence percentage, chi square analysis, correlation and association will be used where necessary and values set at 95% confidential interval.

RESULT

Table 1: Association of age with the interpretation.

Age	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
18-23	19 (55.9)	-	23 (41.1)	1 (33.3)	43 (46.2)	18.608	0.180
24-29	7 (20.6)	-	5 (8.9)	0 (0.0)	12 (12.9)		
30-35	3 (8.8)	-	2 (3.6)	0 (0.0)	5 (5.4)		
36-41	4 (11.8)	-	6 (10.7)	1 (33.3)	11 (11.8)		
42-47	0 (0.0)	-	8 (14.3)	0 (0.0)	8 (8.6)		
48-53	1 (2.9)	-	7 (12.5)	1 (33.3)	9 (9.7)		
54-59	0 (0.0)	-	2 (3.6)	0 (0.0)	2 (2.2)		
60-65	0 (0.0)	-	3 (5.4)	0 (0.0)	3 (3.2)		
Total	90 (96.8)	-	56 (100)	3 (100)	93 (100)		

Age range of 18-23, 36-41 and 48-53 tested positive to *Ureaplasma urealyticum*. Pearson chi-square revealed that there was no significant relationship between age and the interpretation ($p \geq 0.05$).

Table 2: Association of profession with the interpretation.

Profession	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
Teacher	4 (11.8)	-	12 (21.4)	1 (33.3)	17 (18.3)	5.344	0.501
Farmer	2 (5.9)	-	0 (0.0)	0 (0.0)	2 (2.2)		
Trader	9 (26.5)	-	16 (28.6)	1 (33.3)	26 (28.0)		
Student	19 (55.9)	-	28 (50.0)	1 (33.3)	48 (51.6)		
Total	34 (100)	-	56 (100)	3 (100)	93 (100)		

33.3% of teachers tested positive to *Ureaplasma urealyticum*, traders and other students tested positive at 33.3% each. Pearson chi-square revealed that there was no significant relationship between profession and the interpretation ($p \geq 0.05$).

Table 3: Association of state of origin with the interpretation.

State of Origin	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
Anambra	31 (91.2)	-	40 (71.4)	3 (100)	74 (79.6)	13.680	0.188
Ebonyi	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Enugu	0 (0.0)	-	10 (17.9)	0 (0.0)	10 (10.8)		
Delta	0 (0.0)	-	3 (5.4)	0 (0.0)	3 (3.2)		
Imo	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Abia	1 (2.9)	-	3 (5.4)	0 (0.0)	4 (4.3)		
Total	34 (100)	-	56 (100)	3 (0.0)	93 (100)		

Only correspondents from Anambra State tested positive to *Ureaplasma urealyticum*. Pearson chi-square revealed that there was no significant relationship between state of origin and the interpretation ($p \geq 0.05$).

Table 4: Association of average earning with the interpretation.

Average earning	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
None	30 (88.2)	-	29 (51.8)	0 (0.0)	59 (63.4)	24.898	0.002
0 – 15,000	1 (2.9)	-	7 (12.5)	1 (33.3)	9 (9.7)		
16,000 - 30,000	0 (0.0)	-	2 (3.6)	1 (33.3)	3 (3.2)		
31,000 – 45,000	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Above 45,000	3 (8.8)	-	17 (30.4)	1 (33.3)	21 (22.6)		
Total	34 (100)	-	56 (100)	3 (100)	93 (100)		

0 – 15,000 (Nnewi), 16,000 - 30,000 (Nnewi) and Above 45,000 (Nnewi) recorded 33.3% each for positive *Ureaplasma urealyticum*. Pearson chi-square revealed that there was significant relationship between average earning and the interpretation ($p \geq 0.05$).

Table 5: Association of educational level with the interpretation.

Educational level	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
Primary	3 (8.8)	-	1 (1.8)	0 (0.0)	4 (4.3)	17.674	0.024
Secondary	14 (41.2)	-	9 (16.1)	0 (0.0)	23 (24.7)		
Tertiary	13 (38.2)	-	41 (73.2)	3 (100)	57 (61.3)		
Business	2 (5.9)	-	5 (8.9)	0 (0.0)	7 (7.5)		
Dropped out	2 (5.9)	-	0 (0.0)	0 (0.0)	2 (2.2)		
Total	34 (100)	-	56 (100)	3 (100)	93 (100)		

Pearson chi-square revealed that there was significant relationship between educational level and the interpretation ($p \geq 0.05$).

Table 6: Association of any of the underlined disease with the interpretation.

Any of the underlined diseases	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
Recurrent sexually transmitted diseases	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)	20.302	0.564
None	26 (76.5)	-	39 (69.9)	2 (66.7)	67 (72)		
Tuberculosis	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Tuberculosis, Joint diseases, Pulmonary infection	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Asthma	0 (0.0)	-	4 (7.1)	0 (0.0)	4 (4.3)		
Asthma, Diabetes	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Diabetes	0 (0.0)	-	3 (5.4)	1 (33.3)	4 (4.3)		
Diabetes, High blood pressure	0 (0.0)	-	2 (3.6)	0 (0.0)	2 (2.2)		
Joint diseases	2 (5.9)	-	2 (3.6)	0 (0.0)	4 (4.3)		
High blood pressure	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Pulmonary infection	4 (11.8)	-	3 (5.4)	0 (0.0)	7 (7.5)		
Total	34 (100)	-	56 (100)	3 (100)	93 (100)		

None (66.7%-Nnewi) and diabetes (33.3%-Nnewi) tested positive to *Ureaplasma urealyticum*. Pearson chi-square revealed that there was no significant relationship between any of the underlined disease and the interpretation ($p \geq 0.05$).

Table 7: Association of any of these symptoms with the interpretation.

Any of these symptoms	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
Burning pain when urinating	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)	47.647	0.910
Burning pain when urinating, Continual dull ache around genitals or lower abdomen, Stinging/burning during urinating, Extragenital infection, Slight clear discharge, Fever, Frequent urination	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Burning pain when urinating, Joint pain, Frequent urination, Fatigue	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Fever	2 (5.9)	-	3 (5.4)	1 (33.3)	6 (6.5)		
Fever, Frequent urination, Fatigue	1 (2.9)	-	1 (1.8)	0 (0.0)	2 (2.2)		
Fever, Fatigue	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Frequent urination	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Fatigue	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Continual dull ache around genitals or lower abdomen	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Continual dull ache around genitals or lower abdomen ,Fever, Fatigue	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Continual dull ache around genitals or lower abdomen, Joint pain, Fever, Fatigue	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Continual dull ache around genitals or lower abdomen, Extragenital infection , Fever, Fatigue	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
No symptoms	12 (35.3)	-	33 (58.9)	1 (33.3)	46 (49.5)		
Stinging/burning during urinating	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Stinging/burning during urinating, Slight clear discharge	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Joint pain	0 (0.0)	-	3 (5.4)	0 (0.0)	3 (3.3)		
Joint pain, Fever, Frequent urination	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Joint pain, Fever, Frequent urination, Fatigue	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Joint pain, Fever, Fatigue	2 (5.9)	-	2 (3.6)	0 (0.0)	4 (4.4)		
Joint pain, Frequent urination, Fatigue	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (0.0)		
Joint pain, Pain during sex (dyspama)	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Joint pain, Slight clear discharge	1 (2.9)	-	1 (1.8)	0 (0.0)	2 (2.2)		
Joint pain, Slight clear discharge, Fever, Frequent urination, Fatigue	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Joint pain, Slight clear discharge, Fever, Fatigue	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Discharge after sex (dark/colored), Fever, Fatigue	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Pain during sex (dyspama), Frequent urination, Fatigue	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (0.0)		
Extragenital infection	2 (5.9)	-	0 (0.0)	0 (0.0)	2 (2.2)		
Slight clear discharge	3 (8.8)	-	1 (1.8)	1 (33.3)	5 (5.4)		
Slight clear discharge, Fever	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Slight clear discharge, Fever, Frequent urination, Fatigue	0 (0.0)	-	1 (1.8)	0 (0.0)	1 (1.1)		
Slight clear discharge, Fever, Fatigue	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Total	34 (100)	-	56 (100)	3 (100)	93(100)		

Pearson chi-square revealed that there was no significant relationship between any of these symptoms and the interpretation ($p \geq 0.05$).

Table 8: Association of Heard of Ureaplasma urealyticum with the interpretation.

Heard of Ureaplasma urealyticum	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
Yes	14 (41.2)	-	25 (44.6)	2 (66.7)	41 (44.1)	0.744	0.689
No	20 (58.8)	-	31 (55.4)	1 (33.3)	52 (55.9)		
Total	34 (100)	-	56 (100)	3 (100)	93 (100)		

Pearson chi-square revealed that there was no significant relationship between heard of Ureaplasma urealyticum and the interpretation ($p \geq 0.05$).

Table 9: Association of screening on Ureaplasma urealyticum with the interpretation.

Screening on Ureaplasma urealyticum	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
Yes	0 (0.0)	-	2 (3.6)	0 (0.0)	2 (2.2)	1.350	0.509
No	34 (100)	-	54 (96.4)	3 (100)	91 (97.8)		
Total	34 (100)	-	56 (100)	3 (100)	93 (100)		

100% of the respondent who tested positive to Ureaplasma urealyticum responded no to screening on Ureaplasma urealyticum. Pearson chi-square revealed that there was no significant relationship between screening on Ureaplasma urealyticum and the interpretation ($p \geq 0.05$).

Table 10: Association of ureaplasma urealyticum screening important with the interpretation.

Ureaplasma urealyticum screening important?	Ureaplasmaurealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
Yes	10 (29.4)	-	20 (35.7)	1 (33.3)	31 (33.3)	0.378	0.828
No	24 (70.6)	-	36 (64.3)	2 (66.7)	62 (66.7)		
Total	90 (100)	-	56 (100)	3 (100)	93 (100)		

Pearson chi-square revealed that there was no significant relationship between ureaplasma urealyticum screening important? And the interpretation ($p \geq 0.05$).

Table 11: Association of number of sex partner with the interpretation

Number of sex partner	Ureaplasma urealyticum				Total	χ^2	P-value
	Okija		Nnewi				
	Negative	Positive	Negative	Positive			
1	8 (23.5)	-	34 (60.7)	2 (66.7)	44 (47.3)	14.182	0.028
2	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
5	1 (2.9)	-	0 (0.0)	0 (0.0)	1 (1.1)		
Many	24 (70.6)	-	22 (39.3)	1 (33.3)	47 (50.5)		
Total	34 (100)	-	56 (100)	3 (100)	93 (100)		

Pearson chi-square revealed that there was significant relationship between number of sex partner and the interpretation ($p \geq 0.05$).

DISCUSSION

In this study, out of the 93 female(single and married) subject in both Nnewi and Okija that were sampled 3.2% showed a positive result to Ureaplasma urealyticum while 96.8% showed a negative result to Ureaplasma urealyticum From table 4.1.0: out of the 76.3% of the subject within the age ranges of 18-23, 33.3% tested positive to Ureaplasma urealyticum, also 33.3% of subject from Nnewi that are within the age range (36-41,48-53) respectively were also recorded to be positive ,this could be as a result of the lifestyle of the study area sampled. They may not be conscious with their lifestyle because they are at their adolescent age when they will be careless in decision making and also with the way

they live their lives. But those that are within the age ranges of (24-29, 30-35, 42-47, 54-59, and 60-65) are found to be negative because their lifestyle maybe at the pick of their youthful age, when they are conscious and careful of their health status without any statistical differences, it was also recorded that none of the sample from Okija were positive. There was no marked significant difference between the age range and the result. ($p > 0.05$)

From table 2 the highest prevalence of professional that are positive are the traders, teachers and student in

Nnewi with the percentage of 33.3% respectively. Traders in their profession are exposed to travelling and meeting people daily and are susceptible to being tempted; this is also applicable to student and teachers. The samples that are recorded to be negative does not mean that they are not susceptible but because the area of sampling are mainly traders and student and there was no significant relationship the profession and the result. ($p>0.05$).

From table 3, it was recorded that the highest prevalence of positive sample were found Anambra State with the percentage of 33.3%. Diseases have been known to have genetic predisposition in relation to tribe. Despite the fact that Anambra has the highest sample size, but it also has the highest prevalence of positive sample due to genetic factors i.e. there may be a tendency of having the infection, and there was no marked significant relationship between the state of origin and the result ($P>0.05$).

From table 4: A sample of 33.3% of female in Nnewi which has the average earning within the range of 0-15,000, 16-30,000 and above 45,000 were found to have a high prevalence of this organism, this could be as a result of environmental and socio-economic factors such as the probability of lack of money for toilet facilities, lack of employment, malnutrition which can cause some diseases related to this organism like joint disease, pulmonary infection e.t.c. there was a significant relationship between the average earning and the result ($p<0.05$).

From table 5: Due to uneven distribution of sample which results in high prevalence of subject who has a tertiary educational level and it can also be caused as a result of speculated age range for the study. There was a marked significant relationship between educational level and the result ($p<0.05$).

Also the study on the reoccurrence of *Ureaplasma urealyticum* of various age range and professional groups in relation to the following factors: importance of *Ureaplasma urealyticum* screening, ever had a screening test on *Ureaplasma urealyticum*, ever had of *Ureaplasma urealyticum*, symptoms, related diseases showed no significant relationship ($p>0.05$). Whereas the average earning, educational level and the number of sex partner showed a significant relationship ($p<0.05$).

CONCLUSION

Research shows that the presence of this microorganism in human in vitro semen or in female genital tracts can result in a decline in the pregnancy rate per embryo transfer. This microorganism is becoming a very important opportunistic pathogen in women. The placental infections in pregnant women mentioned earlier can lead to the birth of premature babies. *Ureaplasma urealyticum* reoccurrence was found in women that are sexually active and a higher range of

serocarriage was obtained in subject from Nnewi, none were found positive in Okija. Conclusively the serocarriage of *Ureaplasma urealyticum* can be said to be of low incidence probably because of the area of study and indiscriminate use of antibiotics in the area of study. The most significant risk factors for *ureaplasma urealyticum* includes: lifestyle, number of sex partner and socio-economic factors such as the average earning.

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