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RESEARCH ARTICLE

SEMEN ABNORMALITY AND CHLAMYDIA TRACHOMATIS ANTIBODIES AMONG MALE PATIENTS ATTENDING FERTILITY CLINICS IN NNEWI, ANAMBRA STATE.

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Key words:-

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Abstract

Against the background of increasing cases of male infertility in our community, this study was carried out to screen the serum of male patients for the presence of *Chlamydia trachomatis* antibodies and also analyse their semen samples for abnormalities. Five hundred (500) subjects aged between 25-49 years, were randomly recruited for the study. Four hundred (400) had infertility as their main complaint while the remaining 100 without complaint served as controls. Semen and blood samples were collected from each of the subjects. The semen samples were examined for abnormalities using Makler counting method. The blood samples were allowed to clot and the serum collected for sero-diagnosis using immunoComb *Chlamydia trachomatis* kits (Inverness medical innovations, ORGENICS, Israel). An overall *Chlamydia trachomatis* sero-prevalence rate of 13.0% out of 500 patients were positive. Oligozoospermia was the highest form of abnormality recorded 49(29.3%) among the subjects and the least was azoospermia 1(2.9%). Oligozoospermia was more in age group 25-29 years old 17 (34.7%). Although the prevalence of *Chlamydia trachomatis* antibody in this study is low, this organism may play contributory roles in infertility and so effort should be made to screen patients attending fertility clinics routinely for it.

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Introduction:-

Chlamydia infection is a common sexually transmitted infection in humans caused by a bacterium, *Chlamydia trachomatis*. Four million cases of *Chlamydia trachomatis* are reported annually (WHO, 2010). The most common manifestation of male infertility is low sperm count. Possible influence of *Chlamydia trachomatis* infections is on semen quality (Low, 2007). *Chlamydia trachomatis* is a deadly silent killer, been asymptomatic during the early stage of infection and since the disease is undiscovered at the early stage and deadly, it has not only brought about the reduction in the population (Emuoyibofarheet al, 2015).

Materials and methods:-

This was a cross sectional study from subjects attending fertility clinics in Nnewi. Five hundred subjects (500) subjects were randomly selected for the study. Four hundred of them were subjects and had infertility as their main

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complaint. The remaining 100 were students who had no complaint and so were recruited as controls. The consent form was administered to subjects and questionnaires were used to gather relevant information. Ethical consideration was sought from the Ethics Committee of Faculty of Health Sciences, Nnamdi Azikiwe University, Nnewi Campus. All subjects provided a semen specimen by masturbation. Blood and semen specimens collected were analysed in accordance with Osazuwa *et al.*, (2013) using immunoComb *Chlamydia trachomatis* kits (ORGENICS, Israel). Semen samples were examined microscopically using the Makler chamber to determine the semen abnormality.

Results

Five hundred (500) subjects including control aged between 25-49 years old, were randomly recruited for the study in Nnewi, South-Eastern Nigeria. Four hundred (400) had infertility as their main complaint while the remaining 100 without complaint served as controls. An overall *Chlamydia trachomatis* sero-prevalence rate of 13.0% (65/500) was obtained. Sixty-five (13.0%) out of 400 patients and 3 (3.0%) out of 100 controls were positive.

Subject of the age group 25-29 years had the highest infection rate 19.0% followed by age group 30-34 years old, with 16.4% while those in age group 45-49 years old had the least infection (10.6%). The difference in age-specific prevalence of *Chlamydia trachomatis* among patients was statistically significant. Patients with oligozoospermia was the highest form of abnormality recorded 49 (29.3%) and the least was azoospermia 1 (2.9%). The difference between prevalence of *Chlamydia trachomatis* antibodies and forms of semen abnormality among patients was also statistically higher.

Table I:- Prevalence of *Chlamydia trachomatis* antibodies among subjects in Nnewi.

| Parameter | No. Examined | No. Positive (%) |
|--------------|--------------|------------------|
| Subjects | 400 | 62 (15.5) |
| Control | 100 | 3 (3.0) |
| TOTAL | 500 | 65 (13.0) |

Table II:- Prevalence of *Chlamydia trachomatis* antibodies in relation to age groups.

| Age group (years) | No. Examined | No. Infected (%) |
|-------------------|--------------|------------------|
| 25-29 | 126 | 24 (19.0) |
| 30-34 | 55 | 9 (16.4) |
| 35-39 | 78 | 12 (15.4) |
| 40-44 | 94 | 12 (12.8) |
| 45-49 | 47 | 5 (10.6) |
| TOTAL | 400 | 62 (15.5) |

Table III:- Distribution of different forms of semen abnormality among subjects.

| Parameters Examined | No. | No. Infected (%) |
|--------------------------|------------|------------------|
| Oligozoospermia | 167 | 49 (29.3) |
| Azoospermia | 34 | 01 (2.9) |
| Teratozoospermia | 91 | 05 (5.5) |
| Asthenozoospermia | 108 | 07 (6.5) |
| TOTAL | 400 | 62 (15.5) |

Discussion:-

This study revealed prevalence rate (13.0%) of *Chlamydia trachomatis* antibodies among patients with semen abnormality attending fertility clinics in Nnewi. The result in this study was lower than 28.2% in Anambra State (Anaghalu, 2006), 62.6% (Okoror and Agbonlahor, 2012). The students selected as controls recorded only 3.0% of the infection. The differences observed may be associated with lifestyle. For instance, lifestyle in cities such as Enugu is relatively better as compared to semi-urban area such as Nnewi. The prevalence rate of 3.0% recorded among the students (control) was also lower than 6% recorded previously by Chukwuma *et al.*, (2008) in Nnamdi Azikiwe University, Awka. The reason could be the fact that the students are currently more aware of this infection than previously in the past. Among the age group studied, 25-29 years had the highest *Chlamydia* antibodies (19.0%) followed 30-34 years old. As age increases, sexual drive decreases among couples and this could

have led to reduction in *Chlamydia* infection as their age decreases. This conforms to the previous findings by Osazuwaet al, (2013). Forty-nine (29.3%) subjects who had oligozoospermia were also infected with *Chlamydia trachomatis*. This could be attributed to bad attitudes towards medical check-up generally exhibited among males in this area especially the traders who are more concerned with their business.

Conclusion and Recommendations:-

This study has shown a prevalence of 13.0% of *Chlamydia trachomatis* among males with semen abnormality. This is a wake-up call for intensive and regular screening of *Chlamydia trachomatis* infection especially among males in Nnewi. Finally, the cost of *Chlamydia* kits should be subsidized to enable access to it for resource limited populations and the test should be made compulsory for couples attending fertility clinics.

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