ASYMPTOMATIC BACTERIURIA AMONGST PREGNANT WOMEN IN ABA
ABIA STATE, NIGERIA.

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Abstract
The prevalence of asymptomatic bacteriuria amongst pregnant women attending Abia State University teaching Hospital, Aba was investigated using culture techniques. Out of the 102 subjects examined 79 (77.4%) had asymptomatic bacteriuria while 23 (22.5%) were negative. Twenty-one (20.5%) of the subjects had mixed (poly) bacterial growth while 58 (56.9%) had one (mono) type of bacteria. The frequency of isolation of organisms was Staphylococcus aureus 39.2%, Escherichia coli (33.3%), Klebsiella species (17.6%) and Proteus species (9.8%). The age group 34 – 39yrs had the highest prevalence of asymptomatic bacteriuria (85.7%) while housewives had the highest (89%) with respect to occupation. Pregnant women in their third trimester had the highest prevalence (83%). This study emphasizes the need for continuous routine screening of the urine of pregnant women.

Keywords: Prevalence, Asymptomatic, Bacteriuria, Pregnant women, Aba, Nigeria

Introduction
Asymptomatic is a condition in which bacteria are in the urine but no symptoms occur (Akinloyo et al., 2006). Certain groups of people such as pregnant women and their unborn fetuses may be at risk of complication as a result of asymptomatic bacteriuria (Lindsay, 2003, Bloomberg, et. Al., 2005; Feyi-Waboso et. Al., 2000). Asymptomatic bacteriuria occurs often in women due to the short nature of their urethra. This can happen during such activities as sexual intercourse (Bengtsson et al., 1987). Various researchers have reported the prevalence of asymptomatic bacteriuria amongst pregnant women and their effect (Akerele et. al., 2001; Olusanya et. Al., 1993; Mc Isaac et. Al., 2005; Amadi et. Al., 2007). During pregnancy there is likely apparent reduction in immunity. This appears to encourage the growth of both commensal and non commensal microorganisms (Scott et. Al., 1990). Increased risk of infection of pregnant women and fetuses as a result of asymptomatic bacteriuria has been reported (Amadi et. Al., 2007).

Asymptomatic bacteriuria has been associated with acute pyelonephritis, foetal growth restriction and still birth in pregnant women (Hill et. Al., 2005; Zhao and Wu, 2004). Women with asymptomatic bacteriuria show a variable degree of local urinary immune responses. Approximately one third to half of elderly women with asymptomatic bacteriuria have elevated antibody levels compared with non- bacteriuria women (Nicolle and Brunka, 1990). Urinary cytokines IL-6 and IL-8 have been shown to be more frequently present in women with asymptomatic bacteriuria compared to those who are not bacteriuric (Jacob et. al., 1994). Various researchers have highlighted the importance of screening all pregnant women for asymptomatic bacteriuria and stated that prompt treatment that can prevent its adverse effect on mother and child (Amadi et. al., 2007; Kirklam et. al., 2005; Bloomberg et. al., 2005). This paper reports the prevalence of asymptomatic bacteriuria amongst pregnant women in Aba, Abia State Nigeria.

Material and Methods
Description of study population
The study population consists of 102 pregnant women attending antenatal care unit of the Abia State University Teaching Hospital, Aba Abia State between April and September, 2007. The hospital is a referral one many people in Aba and its environs and Aba is the commercial nerve centre of Abia state. Explanation was given to the women about the necessity of the screening. They were given questionnaires where they indicated their age, and occupation.
Sample collection, Isolation and Identification of Isolates

Clean catch early morning mid stream urine specimens were collected from the target subjects after instructions had been given to them (Amadi et al., 2007, Vandepitte et al., 1991). A loopful of each specimen was inoculated on cysteine lactose electrolyte deficient (CLED) agar and blood agar (Oxoid) plates. The plates were incubated aerobically at 37°C for 24h (Cheesbrough, 2002). The isolates were subcultured using the streak plate techniques to obtain pure ones and identified using morphological, microscopic and biochemical test characteristics (Okereke and Kanu, 2004., Cheesbrough, 2002., Collins et al., 1995., Isu and Onyeagba, 2002).

Results

Out of 102 pregnant women screened 79(77.4%) had asymptomatic bacteriuria while 23(22.5%) had none. Twenty-one (20.5%) of the subjects had mixed bacterial growth while 58(56.9%) had one type of bacteria. The frequency of isolation of organisms was Staphylococcus aureus 39.2%, Escherichia coli 33.3% while Klebsiella species and Proteus species had 17.6% and 9.8% respectively. The prevalence of with respect to age, occupation and trimester are shown in Tables 1- 3.

Table 1: Prevalence of Asymptomatic Bacteriuria amongst pregnant women in various age group.

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Percentage prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 -23</td>
<td>66.7</td>
</tr>
<tr>
<td>24 – 29</td>
<td>30.0</td>
</tr>
<tr>
<td>30 – 34</td>
<td>29.0</td>
</tr>
<tr>
<td>35 – 39</td>
<td>85.7</td>
</tr>
</tbody>
</table>

Table 2: Prevalence of Asymptomatic bacteriuria amongst women in different Professions.

<table>
<thead>
<tr>
<th>Profession</th>
<th>Percentage prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traders</td>
<td>83</td>
</tr>
<tr>
<td>Housewives</td>
<td>89</td>
</tr>
<tr>
<td>Students</td>
<td>77</td>
</tr>
<tr>
<td>Civil servants</td>
<td>44</td>
</tr>
<tr>
<td>Teachers</td>
<td>86</td>
</tr>
</tbody>
</table>

Table 3: Prevalence of asymptomatic bacteriuria according to age of Pregnancy

<table>
<thead>
<tr>
<th>Trimester</th>
<th>Percentage prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>59</td>
</tr>
<tr>
<td>Second</td>
<td>81</td>
</tr>
<tr>
<td>Third</td>
<td>83</td>
</tr>
</tbody>
</table>

Discussion

This study revealed that 79% of the 102 pregnant women had asymptomatic Bacteriuria with over 20% having mixed (poly) bacterial growth. Amadi et al., (2007) reported that over 25% had mixed growth in Abakiliki. This finding suggests increased risk of infection of the pregnant women and their fetuses. Some microorganisms have been implicated in foetal growth retardation in pregnant women and can also result to still birth and post partum endometritis (Lindsay, 2003; Ryan. et al., 1990; Zhao and Wu, 2004). The occurrence of acute pyelonephritis has been reported in pregnant women (Hill et. al., 2005). Earlier studies in Nigeria have reported a high prevalence of asymptomatic bacteriuria amongst pregnant women (Akerele et al., 2001., Amadi et al., 2007).

Akerele et al. (2001) reported a prevalence of 86.6% asymptomatic bacteriuria amongst pregnant women in Benin City, Nigeria. Amadi et al. (2007) reported a prevalence rate of 78.7% asymptomatic bacteriuria amongst pregnant women in Abakiliki. These prevalence rates agree with the high prevalence of 79% observed in this study. The mixed growth of 20% reported in this study is lower than 25% reported by Amadi et al., (2007) but higher than the 7.4% reported by Akerele et al., (2001).

The most prevalent organism observed in this study was Staphylococcus aureus (39.2%) followed by Escherichia coli 33.3%; Klebsiella species 17.6% and Proteus species 9.8%. This finding agrees with that of Akerele et al. (2001) and Amadi et al. (2007) who reported the same trend for S. aureus, E. coli and Klebsiella species. The prevalence rate of S. aureus observed in this study (39.2%) is higher than 27.1% reported by Amadi et al.
(2007). *Staphylococcus aureus* has been reported as the most prevalent organism amongst pregnant women in Nigeria (Akerele et al. 2001; Amadi et al., 2007). Olusanya et al. (1993) also reported that *S. aureus* was the most prevalent organism among pregnant women in Sagamu, Nigeria. These findings do not agree with the work of Bloomberg et al. (2005) who reported that *E. coli* was the most prevalent organism isolated in Tanzania.

The highest prevalence was observed amongst women in their third trimester of pregnancy (83%), followed by those in the second (81%) and the least in the first trimester. This finding agrees with the findings of Amadi et al. (2007). Lindsay (2003) also reported that asymptomatic bacteriuria increases with increase in gestational period. Moreso McIsaac et al., (2005) reported that a single urine specimen culture before 20 weeks gestation could miss more than half of the asymptomatic bacteriuria cases.

The age range 35 - 39 years had the highest prevalence of asymptomatic bacteriuria in this study while the least was amongst the age range 30 - 34 years. Amadi et al., (2007) in their study reported the highest prevalence in the age range 31 - 35 years.

Based on occupation house wives had the highest prevalence of 89%. Most of these house wives are likely to belong to the low socio-economic group. Olusanya et al., (1993) observed that most pregnant women with significant bacteriuria belong to the low socio-economic group. The least prevalence was observed amongst the civil servants 44%. This may be as a result of their level of enlightenment and observance of simple rules of hygiene. This study therefore emphasises the need for routine screening of pregnant women for asymptomatic bacteriuria as a part of the antenatal health care for pregnant women in Nigeria.

**References**


Isu, N.R and Onyeagba R.A (2002). Basic Practicals in Microbiology. 2nd Edn. Fasmen


