

# ASYMPTOMATIC BACTERIURIA IN PREGNANT NIGERIAN PATIENTS

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*Summary:* One thousand out of a total Obstetric population of 3,548 patients seen between January and December, 1985, were screened for asymptomatic bacteriuria. During the first trimester, the observed incidence was 5.3 per cent while in the second and third trimesters it was 4.1 and 2.8 per cent respectively. The overall pick-up rate was 4.0 per cent. The significance of this observation was discussed.

*Escherichia Coli* was the predominant causative micro-organism accounting for 45 per cent of cases. A seven-day sensitive antibiotic therapy eradicated all the positive cases.

The qualitative culture method as described in this study is a simple, sensitive and reliable method of screening for bacteriuria in pregnancy, especially as it can be used for identification of the causative organism and its antibiotic sensitivity.

## INTRODUCTION

For the past two decades or so, a lot of work has been done on asymptomatic bacteriuria in pregnancy and this has resulted in reasonable accumulation of data on its varying relationship with age, social class and parity<sup>(1, 2, 3, 4, 5, 6)</sup>. None of these studies however focussed sufficient attention on the role of fetal factors. This study covering patients in the three trimesters of pregnancy has been undertaken to determine the magnitude and direction of asymptomatic bacteriuria in our obstetric population and to relate this to fetal gestational age in the first instance.

## MATERIAL AND METHODS

The patients consisted of randomly selected pregnant women attending the antenatal clinic of the Lagos University teaching Hospital, from January 1985 through to December 1985. Only patients sure of the date of their last menstrual period were recruited into the study. They all gave their fully informed consent. They were grouped according to the three trimesters of pregnancy.

Their parity and age were also noted.

### *Urine Collection*

The urine sample was collected as follows by of us: a "Clean catch" of mid-stream urine was

obtained with the patient lying supine on the examination couch, with both legs abducted fully to the abdomen. The labia were then separated with the sterile gloved fingers of one hand, and swabbed with the other sterile gloved hand from front to back with each of two separate 4"×4" specially prepared sterile gauze-sponges soaked in 10 per cent green soap solution "Sapo Moilis, USA" (7). With the labia still separated and legs apart, she then voided urine into a provided receptacle and then some urine into a wide-mouthed sterile universal container, before emptying her bladder completely.

### *Urine Culture*

The urine samples were returned to the laboratory in the special racks; were refrigerated at 4-6 °C until they were cultured over the surface of blood agar and McConkey's medium plates.

### *Bacterial Counts*

Qualitative colony counts were made according to the method of Miles and Misra (8). If the specimen contained less than 100,000 organisms per ml, no further specimen from the patient was required. But if it contained more than this, the patient was asked to reattend the clinic for a repeat specimen within two weeks.

In positive cases, the causative organisms were isolated in pure culture and identified by simple tests (Gram stain reaction, Carbohydrate utilisation, Methyl-red and Voges Proskauer Tests). The sensitivity test was performed on double positive cases to ascertain the sensitive

anti-biotic for treatment and were treated accordingly for seven days.

Repeated procedure was done on treated cases to determine cure.

## RESULTS

During the period (January to December, 1985) 3,548 patients attended the antenatal clinic of the hospital. A total of 1,000 randomly selected screened patients formed the basis of this study.

Three hundred patients were screened in the first trimester, while 340 were screened in the second trimester. In the third trimester, there were 360 patients.

Of the 300 patients in the first trimester, 16 were positive (5.3 per cent) while 14 out of 340 (4.1 per cent) in the second trimester were positive. Similarly 10 out of 360 (2.8 per cent) in the third trimester were positive. The overall positive cases were 40, an incidence of 4.0 per cent (table 1).

Table 1. - Incidence of bacteriuria in 1000 obstetric patients with reference to fetal maturity (40 cases). Percentage of bacteriuria in 1000 obstetric patients.

Group	Total numbers	Number of positive cases	Percentage incidence
1st Trimester	300	16	5.3%
2nd Trimester	300	14	4.1%
3rd Trimester	360	10	2.8%
Total	1000	40	4.0%

The causative organisms in the first trimester were *Escherichia Coli* in six instances, *Klebsiella aerogenes* in six and *Staphylococcus aureus* in 4. In the second trimester the corresponding organism figures were 7, 4 and 3 respectively. However, in the third trimester, even though *Escherichia Coli* was still dominant, *Staphylococcus aureus* was the next common (table 2). Thus *Escherichia Coli* was the

Table 2. - Types of micro-organisms isolated.

Group	No. of patients with Bacteriuria	Organisms isolated
1st Trimester	16	6 cases of <i>E. Coli</i> 6 cases of <i>K. aerogenes</i> 4 cases of <i>S. aureus</i>
2nd Trimester	14	7 cases of <i>E. Coli</i> 4 cases of <i>K. aerogenes</i> 3 cases of <i>S. aureus</i>
3rd Trimester	10	5 cases of <i>E. Coli</i> 2 cases of <i>K. aerogenes</i> 3 cases of <i>S. aureus</i>

### Summary:

18 cases: <i>E. Coli</i>	45%
12 cases: <i>Klebsiella aerogenes</i>	30%
10 cases: <i>Staphylococcus aureus</i>	25%
40	100%

predominant organism in 45 per cent of the patients.

No positive patient in the series required a second course of antibiotic therapy.

## DISCUSSION

Although asymptomatic bacteriuria has been regarded as one of the major causes of active multiplication of bacteria within the bladder, major interest in pregnancy arose because of the association of asymptomatic bacteriuria with chronic symptomatic urinary tract infection during either pregnancy or the puerperium, and the increased incidence of prematurity, pre-eclampsia and fetal loss<sup>(9, 10)</sup>.

The reported prevalence of bacteriuria in pregnancy varies between two to 10 per cent, depending on the race and socioeconomic status of the women surveyed. In this study, with a homogeneous black race, we found an incidence of 4 per cent. This is similar to the 5 per cent reported by Harris<sup>(11)</sup> and the 4 per

cent of Asscher<sup>(12)</sup>. Hargreaves<sup>(13)</sup> reported an incidence of 3 per cent while Plauche *et al.*<sup>(14)</sup>, found that 9.5 per cent of their patients were positive. However, the highest incidence has been found in Negro multiparas and the lowest in the white private patients. It is pertinent to emphasize that unless repeat colon count is done on initial positive cases, the incidence rate is bound to be high and this may explain the very high rate of 12 per cent reported by Okubadejo, Akinkugbe and Ojo<sup>(15)</sup> in Ibadan, Nigeria.

The incidence of 5.3 per cent we observed in the first trimester of pregnancy dropping to 2.8 per cent in the last trimester agrees with the general consensus that the bacteriuria is often present at the time of the first antenatal visit and that fewer patients acquire an infection in subsequent months.

The use of appropriate antibiotic therapy immediately on confirmation of the diagnosis, eliminated all the organisms in our patients, thus indicating that some of these women with asymptomatic bacteriuria certainly have bacteriuria only in the bladder without involvement of the renal parenchyma. Some studies, however, have shown also that at least some of these women have potentially serious renal disease<sup>(16)</sup>, McFayden *et al.*<sup>(10)</sup>, Harris<sup>(17)</sup>.

The most incriminating organism in our study was *Echerichia Coli* which accounted for 45 per cent of our cases. This is in agreement with the result of other workers although McDowall *et al.*<sup>(18)</sup> reported that *Giardanil vaginalis* was the commonest in their 50 patients.

The role of antibiotics in the management of positive cases of asymptomatic bacteriuria has been controversial, since it is argued that these cases resolve spontaneously<sup>(5, 6, 19)</sup>. It has been concluded, however, that bacteriuria in pregnancy is commonly a manifestation of underlying chronic renal disease which accounts for the alleged higher incidence of prematu-

rity, fetal loss and toxemia. They therefore advocated the exhibition of antibiotic on diagnosis.

We adopted the one-week treatment of Williams *et al.*<sup>(20)</sup>, as opposed to the single-dose treatment advocated by Harris<sup>(21)</sup>, since the latter gives high immediate failure rate and a subsequent failure rate of 3.5 per cent.

The accuracy and the care with which a mid-stream specimen of urine from a woman is obtained are important and many patients and few nurses may not be trusted to achieve what is called a "Clean Catch". Our method of obtaining the specimen is simple, specific and reliable, especially as it can be used for identification of the causative organism and its antibiotic sensitivity.

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## CONTRACEPTIVE METHODS IN THE McCUNE-ALBRIGHT SYNDROME

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**Summary:** We describe the case of a woman with McCune-Albright syndrome who had a pathological bone fracture while being treated with an oral contraceptive. In this syndrome the bone lesions contain estrogen and progesterone receptors. The possibility of progression of the bone lesions during pregnancy is well-known. We judge the use of oral contraceptives to be dangerous in this syndrome; the affected women must be orientated towards alternative contraceptive methods.

### INTRODUCTION

The McCune-Albright syndrome is a rare pathological condition characterized by: A) "café-au-lait" skin macules, appearing at or soon after birth<sup>(1)</sup>; B) precocious pseudopuberty, generally followed in the pubertal age by the establishment of a normal hypothalamic-pituitary control of the ovary<sup>(2)</sup>; C) polyostotic fibrous dysplasia, with slowly progressive tendency and often producing bone deformities and pathological fractures<sup>(3)</sup>. Women affected with this syndrome are fertile and bear healthy babies<sup>(4)</sup>. However some cases of accelerated increase in size of bone lesions and outbreak of pathologic fractures during pregnancy have been pointed out<sup>(5)</sup>. The presence of estrogen and

progesterone receptors in bone biopsies, from areas of fibrous dysplasia, in a case of McCune-Albright syndrome, has been recently shown<sup>(6)</sup>.

### CASE REPORT

A 30-year-old woman had typical "café-au-lait" macules, first noted two days after birth. At the age of 6 she had irregular vaginal bleeding, which however stopped at the age of 7½; then at 12 years old she began to menstruate normally. There had been no clinical evidence of pathologic fractures in the past years and she had never undergone radiographic studies of the skeletal apparatus. Two years ago she had a physiologic pregnancy, but with Caesarian section and partial ovariectomy for voluminous ovarian cysts: she was delivered of a healthy baby.

Afterwards she began to take oral contraceptives.