BACTERIURIA IN PREECLAMPTIC TOXAEMIA

by

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Introduction

Of recent years many studies have been directed to see the effect of asymptomatic or symptomatic bacteriuria in cases of pre-eclamptic toxaemia. Pre-eclamptic toxaemia occurring in multigravida and older patients are thought to be more of a superimposed toxaemia than a pure and simple toxaemia. Some patients are found to develop toxaemia in every pregnancy. Recurrent toxaemia or superimposed toxaemia could be due to a renal pathology, essential hypertension or any other endocrine cause.

This study was undertaken to see the relationship of bacteriuria in cases of pre-eclamptic toxaemia. A total of 75 cases were analysed. The cases were followed from the antenatal period. However, 10 cases admitted directly for imminent eclampsia were also included in this study.

From the analysis of 75 cases, pre-eclamptic toxaemia was found to be more prevalent in the age group below 20 years. The urine culture was found to be positive in number of higher age groups (Table I).

TABLE I
Age

Age	No. of cases of PET	No. of cases with urine positive culture	%
below 20 yrs.	32	8	26.3
21-25	26	9	34.6
26-30	13	11	84.7
31-35	3	3	100
36-40	1	1	100

Socioeconomic Status: Except for 3 cases belonging to social class III, all the rest were from social class V. But, the exact incidence could not be traced as the type of patients attending this hospital were mostly from the lower class.

TABLE II
Parity

Gravida	Total No. of cases	No. of cases urine culture positive	%
Primi <20 yrs.	28	8	29.6
21-25 yrs.	20	7	35
II-IV	18	9	50
Grand-multis	9	8	88.8

There were 48 primigravidas among the total 75 and among these 28 were

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found to be below 20 years. 88.8% of grandmultigravidas were culture positive. Family history of hypertension and history of urinary infection in childhood were asked, but the patients could not give any definite history.

Antenatal Care: Among the 75 cases, 42 had regular antenatal check-up. The blood pressure recorded in the 1st trimester showed that except 3 patients, the rest were normotensive. Two of them were above 30 years and multigravidae, and their postnatal blood pressure taken after a week was also found to be high, varying from 140/90 mm Hg to 150/100 mm Hg. One was a second gravida and 19 years old. She gave history of pre-eclamptic toxaemia in the previous pregnancy also, and ended in fits, and the baby was dead born. In this pregnancy also she developed fits, but the baby was alive. Urine culture was positive in all the 3 cases. No record of the blood pressure in between pregnancies were available and they had not been investigated previously.

Recurrent Toxaemia: Out of the 27 multiparous women 16 gave previous history of pre-eclamptic toxaemia. In these 27 cases, 17 were culture positive (63%). Only 3 had their previous record and were treated for urinary infection. But, in 2 of them they were found to be positive in the present pregnancy also and the babies were still born. The rest gave history of still births and in the present pregnancy 6 of them had alive but premature babies. The rest were still born.

Urine Culture: Thirty-two of the 75 were found to have urinary infection (42.3%) and 13 had eclampsia. Ten cases admitted directly for imminent eclampsia and investigated at that stage also had urinary infection. Among the culture positive cases, 12 had 10-12 pus cells in the urine and the rest had only about 2-5 pus cells. Only 5 (15.6%) of the culture positive cases gave symptoms of urinary infection. The rest were asymptomatic (84.4%). Kincaid Smith (1965) and Savage *et al* (1967) give the incidence of symptomatic infection in patients with untreated bacteriuria between 20 to 40%.

The patients who went in for eclampsia were under treatment for urinary infection.

The infecting organism were coliform group in 24 cases (75%) and Klebsiella in 8 cases 25%; 13 of the 17 multis with urinary infection gave history of recurrent toxaemia. They could not give any record of previous treatment for urinary infection except for 3 cases.

Blood Urea and Uric Acid Levels

The blood urea level was found to range between 10 to 15 mgm%. The uric acid level was found to be high, between 6 to 7.5 mgm%.

Blood Pressure: The blood pressure was recorded antenatally in the 1st trimester in the booked cases and later in the IInd and IIIrd trimesters and again in the postnatal period after a week. The postnatal blood pressure was found to be high in 9 cases ranging from 140/90 mm Hg. to 150/110 mm Hg. Except for 2 primis below the age of 25 years, the rest were multis belonging to the age group between 27 to 35 years. Among these, 3 of them were hypertensive with a B.P. of 140/90 mm of Hg., when recorded in the Ist trimester. All these cases were culture positive and were being treated.

Effect on the Foetus: The babies were found to weigh from 2.3 kg to 2.5 kg. Fifty-eight babies were term babies (77.33%) and 17 were premature 22.66% (Table III).

TABLE III
Effect on te Foetus

	Mature		Premature	
	Alive	Dead	Alive	Dead
Total No. of cases	43	15	9	8
Urine culture positive	10	10	6	6
Urine culture negative	33	5	3	1

There was an higher incidence of positive urine culture (69.6%) in the premature and dead birth group (Table III).

Discussion

Of the many reasons for detecting the presence of asymptomatic bacteriuria in pregnant women, the more controversial one is that it may be associated with pregnancy complications. Kincaid Smith (1968) reviewed the effects of bacteriuria on the incidence of abortion, pre-eclamptic toxaemia, hypertension and anaemia. In the present series, 42.3% of cases had positive urine culture and majority of them were asymptomatic 84.4%. Presistance of high blood pressure one week postpartum was found in 12% of cases and all were urine culture positive and were under treatment. Since higher incidence of bacteriuria was found in the multigravida and as pre-eclamptic toxaemia was found more in the young and primigravidas, it would appear that bacteriurics were not much prone to pre-eclamptic toxaemia of pregnancy. Ghosh *et al* (1976) found only 3.7% of bacteriurics had toxaemia of pregnancy, whereas 15% of women from the control group had evidence of toxaemia. Mcfadyen *et al* (1973) showed that sustained hypertension was common in patients whose bacteriuria was resistant to reatment during pregnancy. Incidence of prematurity and dead births were higher in the urine culture positive cases (69.6%) as compared to the urine culture negative patients (30.3%) Kass (1973) supports this view that the incidence of "prematurity" was greater in these patients.

Summary

(1) The incidence of pre-eclamptic toxaemia was found more in primis than in multis. However, more multis were found to have urinary infection than primis, and patients with recurrent toxaemia were found to be culture positive.

(2) The incidence of eclampsia and persistent hypertension were more common in patients with bacteriuria.

(3) The infecting organism was mostly E. Coli.

(4) Prematurity and dead births were also found to be high in culture positive cases.

(5) Detection of bacteriuria in pregnancy and treatment may reduce the severity of the complications.

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