

**OBSERVATIONS ON TOTAL NON-PROTEIN NITROGEN AND UREA
CONTENT OF MATERNAL BLOOD IN NORMAL PREGNANCY,
PRE-ECLAMPTIC TOXAEMIA AND ECLAMPSIA**

by

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Introduction

Killian and Sherwin (1921) found low value of total non-protein nitrogen and urea nitrogen in normal pregnant cases and in cases of toxæmia. Eastman and Hellman (1961) found aberrant protein metabolism in cases of toxæmia of pregnancy which resulted in the variation of values of the urea nitrogen and non-protein nitrogen fractions in maternal blood. The present study was undertaken to see the changes in urea content and total N.P.N. in maternal serum during toxæmia of pregnancy.

Material and Methods

(1) Out of 150 cases studied, normal non-pregnant women in reproductive age group were 20, normal pregnant women were 30, and 100 cases were of toxæmia of pregnancy.

(2) Determination of total non-protein nitrogen was done by Kjeldahl Nesslerization Method.

(3) Blood urea was estimated by urease Nesslerization method.

Observations

On comparing the values of total N.P.N. in non-pregnant, pregnant and toxæmic pregnant women (Table I), no significant difference was observed in the values. Similarly, no significant difference could be observed in blood urea values (Table II).

Estimation of total N.P.N. in varying degrees of toxæmia showed significant rise in cases of eclampsia. Similarly, estimation of blood urea in varying degrees of toxæmia showed significantly raised levels in cases of eclampsia. When total N.P.N. and blood urea values in toxæmia of pregnancy were compared with normal pregnancy for the same period of gestation, no difference was noted (Table III, IV).

Discussion

Our results tally with those of Gupta *et al* (1963). They did not observe any significant difference in the blood urea values between non-pregnant and normal pregnant groups but there was appreciable increase in toxæmic patients. Increased

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TABLE I

Comparative Values of Total N.P.N. in Non-pregnant, Pregnant and Toxaemic Pregnant Women

Type of cases	No. of cases	Range (mg%)	Mean (mg%)	± S.D.	Non-pregnant with normal pregnancy		Normal pregnancy with toxaemia	
					P value	t' value	P value	t' value
Non-pregnant	20	13-28	18.85	4.46	0.50	0.41		
Normal pregnancy	30	15-26	21.33	3.88				
Toxaemic pregnancy	100	12-60	24.75	9.38			0.50	0.65

TABLE II

Comparative Values of Blood Urea in Non-pregnant, Normal Pregnant and Toxaemic Pregnant Women

Type of cases	No. of cases	Range (mg%)	Mean (mg%)	± S.D.	Non-pregnant with normal pregnancy		Normal pregnancy with toxaemia	
					P value	t' value	P value	t' value
Non-pregnant	20	15-30	20.35	4.58				
Normal pregnancy	30	14-26	22.21	3.94	0.50	0.02	0.50	0.83
Toxaemic pregnancy	100	13-62	27.1	10.65				

TABLE III

Total N.P.N. Values (mg%) in Varying Degrees of Toxaemia as Compared to Normal Pregnancy

Types of cases	No. of cases	Range	Mean	±S.D.	't'	P value
Normal pregnancy	30	15-26	21.33	3.88		
Mild pre-eclampsia	43	12-38	20.79	5.96	0.1058	0.50 (Insignificant)
Moderate pre-eclampsia	11	14-26	20.18	3.689	0.1524	0.50 (Insignificant)
Severe pre-eclampsia	9	20-45	30.4	8.77	0.9737	0.50 (Insignificant)
Eclampsia	30	12-60	27.9	11.42	2.98	0.1 (Significant)

TABLE IV

Blood Urea Values (mg%) in Varying Degrees of Toxaemia as Compared to Normal Pregnancy

Type of cases	No. of cases	Range	Mean	±S.D.	't' value	P value
Normal pregnancy	30	14-26	22.21	3.94		
Mild pre-eclampsia	43	14-42	22.63	6.39	0.788	0.50 (Insignificant)
Moderate pre-eclampsia	11	15-36	23.36	5.53	0.1676	0.50 (Insignificant)
Severe pre-eclampsia	9	22-48	33.89	8.25	1.1775	0.50 (Insignificant)
Eclampsia	30	13-62	30.53	12.13	3.57	0.001 (Significant)

blood urea levels in toxæmia of pregnancy was also noted by Nawal Kishore and Tandon (1965); Saxena and Kharoliwal (1971); Sinha and Mukherjee (1973); Ojha and Sarin (1979). Our observation on total N.P.N. in normal pregnancy and non-pregnant women are similar to those found by Cadden and Stander (1939), Denis and King (1924), Nawal Kishore and Tandon (1965). The mean total N.P.N. was found to be higher in mild and moderate pre-eclampsia but in cases of eclampsia a significant rise was noted.

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