

SERUM SEROMUCOID LEVEL IN TOXAEMIA OF PREGNANCY

by

ZUBIDA MIR

and

WAZIRA KHANAM

SUMMARY

The mean serum seromuroid levels in the 3rd trimester showed a steady rise with increasing degree of toxæmia as shown in Table I which is statistically significant. The seromuroid were also studied in relation to blood pressure, blood urea, albuminuria, foetal outcome, birth weight and placental weight as shown in Table II, III and IV.

Introduction

Pre-eclampsia has been described as a disease of theories (Jeffcoat, 1966), its etiology remains obscure. In recent years, an interest has been shown regarding the immunological basis of toxæmia of pregnancy (Robertson *et al*, 1967; Jenkins *et al*, 1973).

Seromuroid has been found to be increased in 3rd trimester of normal pregnancy and is significantly higher in patients with pre-eclampsia and eclampsia (Scandrett, 1963; Jenkins *et al*, 1973; Good *et al*, 1974; Singh *et al*, 1983). The role of this heterogenous glycoprotein subtraction in pregnancy is not at all clear and it remains to be established whether the behaviour of maternal serum seromuroid in gestation reflects non-specific stress or has an immunological basis.

Material and Methods

The cases were selected inpatient and out-patient of Maternity hospital of Medical College, Srinagar. Cases with anaemia, Rh. incompatibility, hypertension, diabetes and jaundice were excluded from the series.

Cases were divided into 4 groups:

Group I: 25 Normal Pregnant women having BP 120/80 mmg or less.

Group II: 20 mild and moderate toxæmia of pregnancy BP 140/90 and 160/110 with albumin oral-Odema.

Group III: 18 severe toxæmia—BP 160/110 and above with albumin and no Odema.

Group IV: 18 eclampsia with one or more fits.

Discussion

Since seromuroid proteins are known to respond more to immune response than any other fraction of glycoproteins and have been chosen for examination. They

From: Professor Obstetrics and Gynaecology Medical College, Srinagar.

Accepted for publication on 16-2-84.

form non-specific immuno suppressive polyelectrolyte hydrogell which normally protects the foetal allograft from immune rejection. Table I shows the increase in seromucoid level in different types of toxemia than normal pregnant levels. The values are 67.9 ± 3.6 in normal pregnant women, 119.5 ± 15.1 mg/100 ml in mild and moderate toxemia, 148.1 ± 22.5 mg/100 ml in severe toxemia and 150.8 ± 19.0 mg/100 ml in eclampsia.

These finding are closely comparable to the published figures of Good *et al*, 1973, 1974; Scandrett, 1963 and Singh *et al*, 1983. Relation of blood pressure, blood urea and albuminuria with seromucoid

have been studied in normal pregnancy and various groups of toxemia as shown in Table II and III. It is evident from these Tables that blood pressure and blood urea are higher in complicated pregnancy than normal uncomplicated pregnancy and is highly significant. These findings are correlated with those of Good *et al* (1974). Albuminuria is also increased more in severe toxemia and eclampsia than mild and moderate toxemia with simultaneous increase of seromucoid which shows that vasospasm of kidney is responsible for massive albuminuria. Table IV shows relation of seromucoid with foetal outcome, birth

TABLE I
Mean Maternal Serum Seromucoid in Normal Pregnancy and Toxaemia Groups in Third Trimester

Group	Serum Seromucoid mg/100 ml		No. of cases
	Mean	S.D.	
Normal Pregnancy I	$67.9 \pm$	3.6	25
Mild Moderate Toxaemia II	$119.5 \pm$	15.1	20
Serum Toxaemia III	$148.1 \pm$	22.5	18
Eclampsia IV	$150.8 \pm$	19.0	19

TABLE II
Relation of Blood Pressure, Blood Urea with Seromucoid

Group	Blood pressure mm% Hg.				No. of cases	Serum Seromucoid mg/100 ml	Blood Urea mg/100 ml		
	Systolic		Diastolic				Mean	S.D.	
	Mean	S.D.	Mean	S.D.					
Normal Pregnancy I	$113.0 \pm$	7.2	$72.9 \pm$	6.0	25	$67.8 \pm$	3.6	$17.4 \pm$	1.6
Mild & Moderate Toxaemia II	$146.1 \pm$	6.4	$98.4 \pm$	5.4	20	$119.5 \pm$	15.1	$19.4 \pm$	2.3
Severe Toxaemia III	$164.4 \pm$	10.8	$119.2 \pm$	5.2	18	$148.1 \pm$	22.5	$19.2 \pm$	1.2
Eclampsia IV	$185.5 \pm$	13.0	$118.3 \pm$	12.6	19	$150.8 \pm$	19.0	$23.6 \pm$	19.0

TABLE III
Relationship between Maternal Serum Seromuroid and Albuminuria

Group	Albuminurea Gm%	No. of cases	Serum Seromuroid mg/100 ml
Mild & Moderate Toxaemia II	0.5	17 (85%)	119.5
	1.0	—	
	1.5	3 (15%)	
	2.0	—	
Severe Toxaemia III	0.5	5 (27.8%)	148.1
	1.0	7 (38.8%)	
	1.5	4 (22.2%)	
	2.0	2 (11.2%)	
Eclampsia IV	0.5	8 (42.2%)	150.8
	1.0	3 (15.8%)	
	1.5	5 (26.8%)	
	2.0	3 (15.8%)	

TABLE IV
Seromuroid in Relation to Foetal Outcome, Birth Weight and Placental Weight

Group	Foetal outcome			Birth weight Gm Mean ± S.D.	Placental weight Mean ± S.D.	No. of cases	Serum Seromuroid mg/100 ml	
	Live	S.B.	Asphy. reviewed				Mean	S.D.
Normal Pregnancy I	25	—	—	2990 ± 411.46	478 ± 62.04	25	67.9 ± 3.6	
Mild and Moderate Toxaemia II	20	—	—	2778 ± 343.02	474 ± 45.00	20	119.5 ± 15.1	
Severe Toxaemia III	14	(77.8%)	4 (22.2%)	2759 ± 269.22	468 ± 88.75	18	48.1 ± 22.5	
Eclampsia IV	9	8	2	2624 ± 242.22	458 ± 72.70	18	50.8 ± 19.0	

weight and placental weight. Infant birth weight is lower in toxæmia than normal pregnant group and infant birth weight goes on decreasing as seromucoid level goes on increasing in different group of toxæmic patients. Same is true of Good (1975).

The foetal outcome in Table IV shows the foetal mortality and morbidity in relation to seromucoid level. In eclamptic cases 9 had live birth, 8 were still-birth and two were asphyxiated. Since the number of patients studied is small, so relation of seromucoid as a parameter for foetal outcome can not be fully explained.

References

1. Good, W., Gochren, J. N., Macdonald, H. N. and Cumberbatch, K. N.: *J. Obstet. Gynec. Brit. C'wealth.* 80: 22, 1973.
2. Good, W., Randle, C. H. and Cumberbatch, K. N.: *J. Obstet. Gynec. Brit. C'wealth.* 81: 291, 1974.
3. Jeffcoate, T. N. A.: *Proceedings of the Royal Society of Medicine.* 59: 397, 1966.
4. Jenkins, D. M., Good, W. and Good, Sheila, M. C.: *J. Obstet. Gynaec. Brit. C'wealth.* 80: 19, 1973.
5. Robertson, W. B., Boser, I. and Dixen, H. G.: *J. Path. Bact.* 93: 581, 1967.
6. Scandrett, F. J.: *J. Obstet. Gynec. Brit. C'wealth.* 70: 78, 1963.
7. Singh, V. K., Mittal, K. and Tendon, S.: *J. Obstet. Gynec. India.* 33: 326, 1983.