



Methods and Material

The methods of determination of enzyme activity were according to those of Reitman and Frankel (1957). Blood was obtained by venepuncture with no regard to fasting state. The blood was allowed to clot and retract and the separated serum was stored at 0° to 4°C. The estimations were done within 24 hours after the collection of blood. Hemolysed serum was discarded and repeat samples got.

SGOT and SGPT activities were determined in 87 patients with toxæmia of pregnancy. The toxæmic patients had been divided into three groups as per their clinical features: (a) mild pre-eclamptic, (2) severe

pre-eclamptic and (3) eclamptic. Out of a total of 87 patients, 56 patients had mild pre-eclampsia, 16 severe pre-eclampsia, and 15 eclampsia. The subjects were considered to be mild pre-eclamptic if there was elevation of blood pressure (systolic rise between 30 to 50 mm. Hg., diastolic rise 20 to 30 mm. Hg.) and/or oedema and/or proteinuria were present. The patients were grouped as severe pre-eclamptic when the increase in systolic pressure was greater than 50 mm. Hg. and diastolic rise greater than 30 mm. Hg. in presence of either oedema or proteinuria or both of significant degree.

Results and Discussion

The mean values obtained in our laboratory for 25 healthy pregnant adults during the last three months of pregnancy were 18 ± 12 units per ml. for SGOT and 13 ± 10 units per ml. for SGPT. For 100 healthy pregnant women at delivery, we found a mean of 41.2 units per ml. for SGOT and 16.0 units per ml. for SGPT (Santhanagopalan and Mukherjee, 1964). The results for toxæmic patients are summarised in table 1 and illustrated through the scattergrams, figs. 1 and 2.

Apart from these enzyme determinations, the usual liver function tests such as, cephalin cholesterol flocculation and thymol turbidity tests were done and they were within the normal range except in five cases.

Although lesions of the liver are well known in eclampsia, there is no conclusive demonstrable evidence of impaired liver function in all cases of pre-eclampsia or eclampsia (Dieck-

TABLE I

| | Serum glutamic oxalacetic transaminase (SGOT) | | | Serum glutamic pyruvic transaminase (SGPT) | | | |
|------------------------------|--|-----------------|------|---|---|------|--------------------|
| | No. of cases | Range | Mean | Standard deviation | Range | Mean | Standard deviation |
| 1. Mild pre-eclampsia | 56 | 10 to 125 units | 40 | 19 | 5 to 30 units (except two at 65 and 70 respdy.) | 17 | 12 |
| 2. Severe pre-eclampsia .. . | 16 | 36 to 90 units | 58 | 16 | 5 to 25 units | 15 | 6 |
| 3. Eclampsia | 15 | 50 to 160 units | 84 | 38 | 5 to 55 units | 19 | 15 |

mann and Pottinger, 1954). Quint and Spanos (1959) observed that the levels of SGOT were within normal limits in patients with mild pre-eclampsia, while Crisp et al. (1959) found that all the 64 patients with pre-eclampsia and eclampsia had elevations of this enzyme. Arst et al. (1959) noted in their study that two patients, who had pre-eclampsia, had elevated levels of SGOT, 172 and 68 units respectively.

Neumann and Kynak (1961) had observed in their study of SGOT in abnormal pregnancy, that 2 out of 8 cases of severe pre-eclampsia had elevated values and 2 out of 7 cases of eclampsia had raised values, but normal values were found in cases of mild pre-eclampsia. Szinnayi et al. (1962) found, in their studies of 35 patients of late pregnancy toxæmia, that 23 cases had raised values, while normal values were found in the other 12 cases of mild toxæmia. In our studies of mild pre-eclamptic patients, 22% of cases had elevated values, while 50% of severe pre-eclamptic patients had high values. As regards the eclamptic group, we found that 86% of cases had raised values.

The raised values of SGOT in pre-eclampsia and eclampsia may be due to hepatic involvement. In cases of eclampsia it is suggested that the high range of values may not only be due to hepatic damage but also owing to the muscular strain, as the recurrence of fits produces in eclampsia. It had been demonstrated by Remmens and Kaljot (1963) that the SGOT level might be markedly elevated during strenuous exercise, although the mechanism of SGOT

elevation in this instance is not known. It is probable that there is a release of the enzyme into the extracellular space. Hence for the marked elevation of SGOT in eclampsia, apart from hepatic damage, muscular strain may also be a causative factor.

Summary and Conclusions

Enzyme studies (serum glutamic exalacetic transaminase and serum glutamic pyruvic transaminase) were made on 87 patients with late toxæmia of pregnancy. The values for SGOT ranged from 10 to 125 units per ml. (mean 40 ± 19) for mild pre-eclamptic cases, 36 to 90 units per ml. (mean 58 ± 16) for severe pre-eclampsia and 50 to 160 units per ml. (mean 84 ± 38) for eclampsia. Regarding the SGPT values, the ranges of values for mild and severe pre-eclampsia were nearly normal, while the values ranged from 5 to 55 units per ml. in eclamptic cases.

The elevation of SGOT in late pregnancy toxæmias did correspond to the severity of the disease. It appears that the study of SGOT is not only of diagnostic importance but is of great prognostic significance in late toxæmias of pregnancy, as it bears a close relation to the severity of the disease.

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