Short Communication

SOME OBSERVATIONS ON THE STUDY ON SERUM PHOSPHOGLUCOSE ISOMERASE IN HEALTH AND IN DISEASES OF LIVER

By

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A study was undertaken to find out the levels of serum phosphoglucose isomerase activity in health and in diseases of the liver and the present report is concerned with the results of this study.

MATERIALS AND METHODS

Glucose-6-phosphate, Phosphoglucose isomerase Fructose-6-phosphate

The enzymic assay is based on the above reaction. The fructose-6-phosphate formed is determined colorimetrically at 520 $m\mu$, after its treatment with the colour reagent-resorcinol, thiourea and HCL (5). One unit of the enzyme activity brings about the formation of 1 μ mole of fructose-6-phosphate in 1 minute at 37°C under the prescribed conditions (3). Sixty-two normal healthy adult males ranging in their age from 24 to 55 years were studied. Similarly ninety-four male patients with hepatic diseases and ranging in their age from 37 to 53 years were investigated for the serum isomerase activity. These patients belonged to the S.S.G. Hospital and the infectious diseases Hospital, Baroda. Serum bilirubin estimations were also carried out in the samples of blood both in the normals and in the patients (4). Each of the above estimations was done in duplicate and the average thereof was taken.

RESULTS AND DISCUSSIONS

The results of serum isomerase activity and serum bilirubin in normals and in patients have been shown in Table I. The values obtained after statistical analysis for S.D. and standard error of mean are also given in the table.

The data were statistically analysed in order to find out the correlation between the values obtained for serum enzyme activity and the serum bilirubin content in the cases studied. Similarly an attempt was made to find out whether the differences observed in the respective values of serum isomerase activity and the serum bilirubin content in normals on the one hand and in patients on the other were statistically significant; it was found that the differences were significant, and that the value of P was of the order of smaller than 0.001 in these cases, except in the case of isomerase activity in normals and hepatic cases taken together where P was less than 0.02. The results are similar to those observed by Bodansky (1).

TABLE I

Serum isomerase activity and serum bilirubin in normals and in patients with liver diseases

Subjects	Isomerase activity, units/l				Serum bilirubin mg%			
	Range	Mean	S.D.	S.E. of mean	Range	Mean	S.D.	S.E. of mean
Normals (62)	85-152	119.5	±19.67	2.49	0.2-0.6	0.38	±0.12	0.02
All cases of liver diseases (94)	187-544	311.9	±82.23	8.48	1.0-32.1	7-67	±6.24	0.64
Obstructive jaundice (18)	187-263	240.8	±18.94	4.46	3.9-7.8	5.90	±0.39	0.09
Cirrhosis of liver (23)	236-282	255.2	±11.83	2.47	1.0-3.7	2.48	±0.72	0.15
Infective hepatitis (53)	287-544	370.6	±59.11	8.12	4.0-32.1	10.52	±6.87	0.91

S.D. :—Standard deviation. S.E. :—Standard error. The figures in the parentheses indicate the number of cases studied.

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