

## SERUM GAMMA GLUTAMYL TRANSPEPTIDASE IN NORMAL PERSONS AND PATIENTS WITH PSORIASIS

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### Summary

Serum  $\gamma$ -glutamyl transpeptidase activity was measured in normal persons and persons with psoriasis by Sigma - Naftalin colorimetric procedure. It was found that activity in normal Kashmiri males was lower than that reported for normal males in USA. The activity in sera of patients with psoriasis did not differ significantly from that of normal persons. The findings are discussed.

$\gamma$ -Glutamyl transpeptidase (E. C. 2.3.2.2, -Glutamyl transferase) is an enzyme present in a variety of epithelial tissues<sup>1</sup>. Increased serum  $\gamma$ -glutamyl transpeptidase (S.G.G.T.P.) activity has been reported in diseases of the liver, bile duct and pancreas<sup>2</sup>, certain neurologic disorders<sup>3</sup> and myocardial infarction<sup>4</sup>. In view of a possible key role of this enzyme in amino acid transport<sup>5</sup> and hydrolysis of glutathione<sup>6</sup> it seemed desirable to study the levels of this enzyme in psoriasis. As levels of this enzyme in normal Indians have not been studied we have also estimated this enzyme in sera of normal persons to establish the normal range of this enzyme in the local population.

### Material and Methods

S. G. G. T. P. was measured in 72 normal healthy controls (28 males and 44 females) and 40 patients with psoriasis. A few patients with hepatitis, myocardial infarction, epilepsy, primary biliary cirrhosis (1 case) and liver

metastasis were also chosen as positive controls. The enzyme levels were measured by sigma - Naftalin colorimetric procedure<sup>7</sup> using L -  $\gamma$  - glutamyl - P - nitroanilide as the substrate.

### Results

The normal range of this enzyme was 0 - 10 units in males and 0 - 16 units in females (Table 1). In psoriasis the enzyme levels were in the normal range (Table 2). Very high levels were noted in the case of primary biliary cirrhosis and in sera of patients with

TABLE 1  
Serum Gamma Glutamyl Transpeptidase  
Range of activity in normal persons and other controls

Group	No. studied	Range of enzyme activity in sigma naftalin units
N. Males	28	0-10
N. Females	44	0-16
Myocardial Infarction	1	32
Infective hepatitis	12	12-45
Primary biliary cirrhosis	1	150
Epilepsy	3	3
Hepatic secondaries	2	120-150

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Received for publication on 9-7-1979

TABLE 2

Serum Gamma Glutamyl Transpeptidase  
Range of activity in psoriatic patients

No. of patients studied	... 40
SGGTP activity range	... 0-7 units

liver metastasis. High levels were found in infective hepatitis and occasionally in epilepsy (Table 1).

### Discussion

The physiological role of G.T.T.P. is not yet clear. It has been suggested that this enzyme plays a key role in aminoacid transport<sup>5</sup>, especially transport of the aminoacid glutamine<sup>8</sup>. Some studies suggest that the main function of this enzyme may be the hydrolysis of extra - cellular glutathione rather than aminoacid transport<sup>6</sup>. We have found that the normal range of this enzyme is 0-16 units in the Kashmiri population. This is much lower than the range of 0-32 units reported for normal American males<sup>9</sup>. Although this difference could be genetic, yet it is possible that this difference could be due to the fact that normally Kashmiris strictly abstain from alcohol whereas alcohol is commonly consumed in the U.S.A. Alcohol ingestion is known to cause an elevation in S.G.G.T.P. levels and indeed this enzyme has been found valuable in the detection of occult alcoholism<sup>10</sup>. Our study does not show any elevation of this enzyme in psoriasis.

### Acknowledgement :

Our thanks are due to M/s. Sigma Chemical Company for their help and to M/s. German Schering for their valuable gift of  $\gamma$ -glutamyl-p. nitroanilide.

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