

# SERUM LEUCINE AMINO-PEPTIDASE ACTIVITY IN VITILIGO

## A Preliminary Report

By

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In a recent communication<sup>1</sup>, it has been observed that the study of serum enzymes had been quite useful in vitiligo. The enzymes studied were transaminases, Alkaline Phosphatase and Paraphenylene diamine oxidase. Our present attention is drawn to the assay of serum leucine aminopeptidase in vitiligo.

Leucine Amino-peptidase is an enzyme normally found in the serum. A clinical unit of this enzyme is defined in terms of Beta naphthylamine formed by enzymatic hydrolysis. The principle of method of estimation is that the substrate, leucyl-B naphthylamide is hydrolysed by the enzyme to leucine and B-naphthylamine. Beta naphthyl amine is diazotised and the resulting diazo derivative is coupled with N-1-naphthyl ethylene diamine to form a blue dye whose absorbance is measured in a photo electric colorimeter. The method employed in this investigation is that of Goldbarg<sup>2</sup>.

Diagnostically significant elevations of this enzyme activity have been shown to relate almost exclusively to diseases of liver, bile ducts and pancreas.<sup>3,4,5</sup> A preliminary study is made about the usefulness of this enzyme in Vitiligo, as liver is an important etiological factor in the disease.

As controls, 30 normal adults between 12 to 60 years of age apparently not suffering from any disease were selected. For Vitiligo patients, 20 persons who attended the Out-patient department of Dermatology Section for their depigmentation were chosen. Of these were 58% men and 42% women. Their ages varied from 15 to 55 years. The patients belonged to low income socio-economic group. They did not suffer from any other disease which might elevate the activity of Leucine amino-peptidase. Regarding the lesions, 30% had single lesions while others had on an average of 3 lesions in different locations. The commonest sites were extremities in 30% cases and mucous membranes in 35% cases.

Concurrently with the determinations of the activity of the Serum leucine amino-peptidase, the activities of glutamic oxalacetic transaminase and glutamic pyruvic transaminase were studied.

### RESULT AND DISCUSSION

The value for the activity of serum leucine aminopeptidase for 30 normal controls ranged between 68 to 212 units with a mean of 138 and S. D. 38.

In vitiligo cases, the range for this enzyme is from 67 to 202 units with a mean of 142 units and S. D. 36. The concurrent determinations of the activities

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of glutamic oxalacetic transaminase for these series of patients showed a range from 15 to 60 units (Mean 38 and S. D. 13) and the values for the activities of glutamic pyruvic transaminases varied from 5 to 30 units (Table I). It is evident from the above that the activities of serum leucine amino-peptidase and glutamic pyruvic transaminase were within normal limits while 45% cases had elevated activities of the glutamic oxalacetic transaminase. As the elevations of serum leucine amino-peptidase activity appears to be mostly due to the interference with biliary excretion, the non-elevation may be explained by presuming that there is no obstruction in biliary tract in this disease.

TABLE I

S. No.	Serum Leucine Aminopeptidase Units	Serum Glutamic Oxalacetic Transmines Units	Serum Glutamic Pyruvic Transaminase Units
1.	126	25	5
2.	142	35	20
3.	156	40	15
4.	68	25	10
5.	67	45	—
6.	198	50	—
7.	202	15	10
8.	138	25	10
9.	106	46	10
10.	152	55	5
11.	180	48	30
12.	148	30	10
13.	173	20	10
14.	122	25	12
15.	132	45	22
16.	113	35	30
17.	164	40	—
18.	170	55	—
19.	164	60	5
20.	120	50	—
MEAN	142	38	14
S. D.	36	13	8

Further the serum glutamic oxalacetic transaminase assays seem to be more sensitive than the serum leucine amino-peptidase and serum glutamic pyruvic transaminase assays in this disease.

#### SUMMARY

Serum enzyme studies (Serum Leucine Amino-peptidase, Serum glutamic oxalacetic transaminase, Serum pyruvic transaminase) were done concurrently on 20 vitiligo patients.

Activities of serum leucine amino-peptidase and serum glutamic pyruvic transaminases were within normal limits while the activity of serum glutamic oxalacetic transaminase was elevated in 45% of cases.

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