EVALUATION OF RADIAL IMMUNODIFFUSION ESTIMATION OF SERUM ALPHA-1 ANTITRYPSIN IN HEALTHY FERTILE FEMALES

By

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SUMMARY

In the recent past, much attention has been focussed on the chemical and enzymatic aspects in pathological conditions. As a preliminary study the present work has been done to establish the norms for antiproteases Alpha-1 antitrypsin levels in normal healthy fertile females. To estimate the enzyme Mancini's modification of Feinberg's method 1957 has been used in this study. 242.7 mg% was average value while only 4% showed low levels and 4% high levels.

Introduction

Human plasma is known to contain many inhibitors of enzymes, which act on proteases and are called "Antiproteases". Camus and Gley (1897) were the first to observe antitrypsin activity in human serum. Ascoli and Bezzola (1903) found that trypsin inhibiting capacity of the serum is increased or decreased in some diseases. Healthy population was first screened for Alpha-1 antitrypsin deficiency by Erikson (1965) who found 4.7% heterozygous and 0.06% homozygous deficiency. Present study has been done to find out the alpha-1 antitrypsin status in healthy fertile females.

Material and Method

Estimation of alpha-1 antitrypsin by single radial immunodiffusion (Mancini's (1965) modification of Feinberg method) was done in 25 healthy females in reproductive age group, who were not on oral contraceptives and had not received typhoid vaccination in last 6 months and had no history of any infection or intake of corticosteroid in last 2 months. Alpha-1 antitrypsin deficiency was labelled, using the criteria of Lieberman (1973).

TABLE I

Showing Alpha-1 antitrypsin Levels in Different

Sl. No.	Age groups	No. of cases	%age	Alpha-1 antitrypsin		
				Normal	Low	High
1.	<20 Yrs.	1	4	—	1	—
2.	21 - 25	14	56	13	—	1
3.	26 - 30	8	32	8	—	—
4.	31 - 35	2	8	2	—	—
5.	>35 Yrs.	0	—	—	—	—

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Accepted for publication on 13-2-89.

Observations

TABLE II
Showing Alpha-1 Antitrypsin Enzyme Range and Mean

	Alpha-1 antitrypsin enzemes
Mean	242.7 mg%
Range	78 - 284
S.D.	± 37.5

Discussion

This study has been done to establish relevant norms. Approximately 2 mg of alpha-1 antitrypsin are present in 1 ml of serum (Talmo 1971, Sharp 1976). Morse (1978) stated that normal person maintained serum levels of alpha-1 antitrypsin around 2.2 mg/ml. Lieberman (1973) found it to be 2 mg/ml. In our series it is 2.4 mg/ml. Kishore and Rizvi (1979) reported mean value of alpha-1 antitrypsin by immunodiffusion as 2.39 mg/ml in healthy adults subjects. Thus our study simulating the results more nearly to Kishore *et al* (1979). In normal population approximately 5% had deficient enzyme levels according to Erikson (1965). In our study also, 4% were having low levels of alpha-1 antitrypsin.

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