

CHAPTER-III

CHAPTER-IV

**RESULTS**

## RESULTS

Normal subjects and lung disease patients are expressed as mean  $\pm$ SD. The number of female cases of patients as well as normal being 12, While 14 male cases have been studied. Eleven patients (55%) are ex- smokers and have nut-chewing habits three patients (15%) are alcoholics and Six patients (30%) still continue smoking of these, 60% are labourers and 40% are farmers. They are accommodated in an industrial area. They are all living below the poverty line. Two patients had chronic bronchieactasis before the age of 14 years.

The data pertaining to blood parameters such as hemoglobin, Red Blood cells and white blood parameters serum sugar, serum protein and the investigate enzymes i.e.....Serum Glutamate Oxalo amino Transferase (SGOT), Serum Glutamate pyruvate transaminase (SGPT), Acid phosphatase and lactate dehydrogenase are shown as Tables 1-15.

The above data are presented with statistical analysis and standard Deviation derivation for each parameter or triplet of parameters for normal subjects or patients suffering from different lung diseases. E.g. Hemoglobin, RBC WBC data. Their Statistical Derivatives are all grouped together for normal subjects in tables 1-1A, 1B, 1C. Like wise data on same parameters for clinical conditions Eg: Asthma are shown in table 3-3A, 3B, 3C, for bronchieactasis patients in table 4-4A, 4B, 4C, and for emphysema patients in table 5-5A, 5B, 5C.

In the same sequence i.e. -----normal subjects, Asthma, tuberculosis, Bronchieactasis and emphysema patients, the data for serum glucose and protein and the statistical derivations are presented in tables 6-10. for the serum enzymes and their statistical derivations. Tables 11-15 present their data.

Table 16 shows a comparative account of the hematological data presented in tables 1-5 to give an immediate appreciation of levels of Hemoglobin and the RBC and WBC counts in normal subjects was 12.38 g/l where as it under went decline by 23% in Asthma, by 46% in Tuberculosis patients. For Bronchieactasis and Emphysema patients, in both diseases Hemoglobin content dropped to 96.5% and 33% compared to the control subjects.

The changes in RBC counts in clinical subjects (Table-16) were marginally lower than that in control subjects the RBC content for the normal subject was  $3.8 \text{ mm}^3/\text{l}$  in Asthma it declined to 8% by 13.2% in tuberculosis patients. In case of Bronchieactasis and Emphysema the RBC decreased to 8% and 10.5% respectively. However the WBC counts increased to 29% in Bronchieactasis by 16.4% and 15% in emphysema patients it was showed only marginal elevation of WBC counts.

#### Immediate appreciation of levels of serum sugar and protein

The profile of serum sugar and protein for normal subjects has been compared with those in clinical patients of asthma, Tuberculosis Bronchieactasis and Emphysema (Table-17). Only marginal changes in levels of these parameters are noted and are not very significant for of diseases based on sugar, protein determination in blood/serum. The values of sugar in Tuberculosis patients was decreased to 11.3% and protein by 15.8% but in cage of Emphysema patients blood sugar increased to 8% than and protein decreased to 10.4% than the normal subjects.

The status of some key enzymes in lung related diseases have been compared with these in normal subjects (Table-18). The serum enzymes investigated are the two important transaminases such as Glutamate Oxalo Amino Transferase (SGOT), and Glutamate Alanine Amino Transferase (SGPT); Alysosomal Hydrolase Acid Phosphatase and Lactate Dehydrogenese.

A curious profile was seen for the transaminases, SGOT showed a nearly 23% rise in patients afflicted with bronchieactasis compared to controls where as the

SGOT levels in other diseases were not significantly different. Similarly SGPT showed a 25% increase in Asthma and Emphysema patients while decrease in Tuberculosis patients the SGPT levels dropped by 29% SGPT can thus serve as a diagnostic marker for the three lung related diseases viz. Asthma, Tuberculosis and Emphysema.

Among the enzymes investigated, the most interesting enzyme appeared to be acid phosphatase. The levels rose pretty high in three clinical states i.e. ----- Asthma (22%), Tuberculosis 27% and Bronchieactasis 42% and there was marginal increase 16.4% in Emphysema patients. The other enzyme Lactate Dehydrogenase showed significantly higher levels in Bronchieactasis 36.4% and Emphysema (36%) than the control subjects. The two clinical states probably put a lot of inflammatory reactions and intense activity of muscular origin, that might up regulate production and secretion in blood of LDH. The 36% increase in LDH is suggestive of an intense muscular activity.