SUMMARY, CONCLUSION AND RECOMENDATIONS

The aim of this work has been to study the serum calcium and phosphorus in patients with obstructive airway diseases.

This study included 50 asthmatic patients (reversible airway obstruction) and 50 patients with COPD (irreversible airway obstruction), in addition to 20 normal healthy non smoker subjects as a control group. According to questionaires there were 20 asthmatic patients suffered from extrinsic asthma and 30 patients suffered from intrinsic asthma. Also among all the asthmatic patients there were 13 patients treated with steroid in contrast to 7 patients with COPD.

Thorough history and clinical examination were performed for all subjects who were also subjected to the following investigations:

* *Ventilatory functions before and after bronchodilator administration.*
* *Chest radiological examination (P.A. View).*
* *Serum calcium (total, bound and ionized).*
* *Serum phosphorus.*
* *Fasting and 2 hours post prandial blood suger level.*
* *Renal functions (blood urea and serum creatinine).*
* *Liver functions (Total proteins, serum albumin, SGOT and SGPT).*

The data obtained were tabulated and statistically analysed.
The following results were obtained:

(A) patients with bronchial asthma.

- *There was a statistically highly significant hypocalcemia in asthmatic paients compared with the normal control subjects.*
- *This hypocalcemia was not due to or causing any change in the serum phosphorus concentration.*
- *The level of the resultant hypocalcemia was not affected either by sex difference or by the degree of airway obstruction.*
- *The type of asthma (extrinsic or intrinsic) had no effect on the level of the resultant hypocalcemia, as the level of hypocalcemia was more or less the same in both groups.*

- *The level of hypocalcemia was more or less the same in steroid-treated and non steroid-treated asthmatic patients indicating that the cause of this hypocalcemia was not due to the steroid therapy which may be used in the management of these cases.*

The decreased serum calcium concentrations observed might reflect a basic abnormality in calcium homeostasis which in turn contribute to the bronchial hyperreactivity in patients with bronchial asthma.

(B) Patients with COPD

- *There was a statistically highly significant hypocalcemia in patients with COPD compared with the normal control subjects.*
- *This hypocalcemia was not due to or causing any change in the serum phosphorus concentration.*

- *The level of the resultant hypocalcemia was not affected either by the sex difference or by the degree of airway obstruction.*
- *There was hypocalcemia in both steroid-treated and non steroid-treated patients with COPD but the level of this hypocalcemia was more in steroid-treated group indicating that the resultant hypocalcemia was not due to steroid therapy which may be used under strict criteria in management of patients with COPD but this hypocalcemia may be augmented by the use of corticosteroids.*

Calcium level in patients with COPD may be linked to the changes in blood gas and acid-base parameters observed in these cases.

So from the study of serum calcium and phosphorus in patients with obstructive airway diseases, the only obvious change was the hypocalcemia in both the asthmatic group and COPD group but the underlying cause may be different, however it seems that further markers have to be defined in these patients especially the possible endocrine disturbance, so an assay of hormones that control calcium and phosphorus homeostasis is recomended, also these changes in serum calcium level have to be correlated with the changes in acid-base and blood gas parameters observed in these cases.