The effects of steroids on the course of pulmonary tuberculosis have been studied in twenty-five cases and the results compared with another twenty-five cases having similar disease which served as control. There were fourteen men and eleven women in each group. Age group varied from 5 to 45 years. There was one child of the age of 5 years. The duration of illness varied from 3 months to 4 years. Seventeen cases in steroid group had duration of illness up to one year; average duration of illness being one year. All these cases had positive sputum for AFBs at the start of their illness. Out of these, 24 cases had positive sputum at the start of steroid therapy. Seven cases had unilateral disease and 8 cases had single cavity. Two cases did not have any cavity. Fifteen cases had multiple cavities and nineteen cases had four or more zones of both lungs involved. Eight cases had fibrocavitary disease of more than one year's duration of illness. Eleven cases had quite irregular antituberculosis chemotherapy before coming under present study, and in these cases symptoms had been present for more than one year. Eight cases were afebrile at the start of steroid therapy. Thus the cases could be grouped under the following three groups:

1. Chronic fibrocavitary disease of more than one year's duration with previous irregular
antituberculous chemotherapy and lung condition being stationary and with positive sputum.

2. Fresh cases with mainly exudative and cavitary disease, with duration of illness of less than six months and no previous antituberculous chemotherapy.

3. Caseocavernous disease usually bilateral with duration of illness from 6 months to one year and who had very little antituberculous chemotherapy.

Before starting treatment besides detailed history and clinical examination, the routine laboratory and radiological investigations were done. Blood electrolytes like blood sugar, blood urea, serum potassium estimations were done and T.L.D. taken in each case every month. The clinical progress of each case was recorded daily. Weight was recorded every week, and screening of chest was done every week, T.I.X. and O.I.X. were done every week. Cases having diabetes mellitus, hypertension, renal disease, mental illnesses, symptoms suggestive of peptic ulceration and congestive heart failure were excluded from the study. Cases above the age of 45, were not included in the study. The cases were put on the following regimens of antituberculous chemotherapy:-
1. Streptomycin, 1 Gm.,
1/4 Gm. daily and INAH 100 mg. twice daily.
.. 18 cases.

2. PAS 5 Gm., twice daily
and INAH 100 mg. twice daily.
.. 5 "

3. Streptomycin 1 Gm.,
1/4 Gm. daily; PAS 5 Gm.
twice daily and
INAH 100 mg. twice
daily.
.. 1 case

4. Streptomycin 1 Gm.
1/4 Gm. daily and INAH
50 mg. thrice daily.
.. 1 "

Besides antituberculous chemotherapy, all these cases were put on prednisolone or prednisone 5 mg.
tablets once daily for a period of three months. After that chemotherapy alone was continued.

From the present study, following conclusions could be drawn:

1. Steroid therapy does not adversely affect the course of pulmonary tuberculosis provided adequate antituberculous chemotherapy is given concurrently and proper selection of the case is made.

2. It leads to rapid abatement of symptoms and concurrently may be of considerable value in seriously ill patients. In the present study, twelve cases were afebrile within a fortnight's treatment, as compared to two cases in control group; similarly, thirteen cases were free from symptoms like cough and expectoration,
within a fortnight of the start of the treatment as compared to none in the control group.

3. There is rapid clearance of exudative lesions. It included twelve cases in steroid group, as compared to nine cases in control group by the end of three months’ treatment.

4. Rate of cavity closure is hastened, especially in early exudative and cavitary cases. Seven cases showed cavity closure by the end of three months of steroid therapy, as compared to two cases in control group. Six cases showed considerable reduction in the size of the cavity as compared to three cases in control group.

5. There is rapid gain in weight in cases on steroid group. Average gain in weight every month was 4.5 lbs. as compared to 3.42 lbs. in control group.

6. There is rapid fall in E.S.A. The fall was more rapid after one month's steroid therapy than in control group, the average E.S.A. in corticoid group at the end of one month's treatment being 36.6 mm. 1st hour Ventergren as compared to 52.33 mm. in control group. Subsequent E.S.A. readings after 2 and 3 months treatment did not show any appreciable difference in both the groups.

7. The rate of sputum conversion is hastened. Nine cases in steroid group had negative sputum after one
month's treatment as compared to five cases in control group, though there was not much difference in sputum conversion rate at the end of three months' treatment in both the groups.

9. No side-effects due to steroids, like hypertension, glycosuria, electrolyte disturbances, dyspeptic symptoms or congestive heart failure were noted in any of the cases.

9. In chronic fibrocavitary disease who had illness of more than one year's duration and had had irregular antituberculosis chemotherapy, steroids did not have any therapeutic value. There were no significant differences in the results in both the groups. One case in each group showed reduction in the size of the cavities and two cases in each group showed moderate clearance of exudative lesions. Most of the cases did not show any change in their lung lesions.

10. There was deterioration in clinical as well as radiological conditions of three patients after the stoppage of steroid therapy. These cases had not responded to steroids and had chronic fibrocavitary disease.

11. Maximum improvement with steroids was noted in cases who had predominantly exudative disease of shorter duration and who had very little or no previous antituberculosis chemotherapy.
12. One case developed urticaria and angioneurotic oedema soon after the discontinuation of steroids and in that case streptomycin had to be discontinued and PAS given. One case started getting high irregular fever soon after the stoppage of steroids and showed extension of exudative lesions in the lungs which cleared in subsequent x-ray films. He was put on all the three antituberculosis drugs and it took three to four weeks for the temperature to settle down to the normal. He had chronic fibrocavitary type of disease and had shown no response to steroid therapy.

CONCLUSIONS

From the above study it can be concluded that steroids have definite place in the treatment of certain types of pulmonary tuberculosis. Best results are obtained in early and fresh exudative cases and cases having severe toxaemia. In these cases there is rapid amelioration of toxaemia, rapid improvement in general well being, rapid gain in weight, rapid sputum conversion and rapid radiological clearance. It has no value in chronic fibrocavitary disease, and in cases who had had irregular and prolonged antituberculosis chemotherapy. Probably these cases harbour tubercle bacilli resistant to anti-microbials commonly used. Side-effects due to steroids can be avoided by proper selection of cases,
minimum therapeutic doses for optimal period and by using newer steroids like prednisolone or prednisone, triamcinolone and dexamethasone. Steroids should always be given in combination with effective antituberculosis chemotherapy.