

or latent tuberculosis. The danger of using either hormone in patients with syphilis has not been defined as yet, but aggravation of syphilis in experimental animals has been reported.¹⁰

Psychoses and Psychopathic Personalities.—This has already been discussed above in some detail. It is only necessary to reiterate that as regards patients with latent or overt psychotic tendencies the effect of ACTH and cortisone is unpredictable, and the ultimate prognosis uncertain. Therefore, unless there are strong indications, their use should be avoided. For the same reason they should not be used in patients with cerebral arteriosclerosis or in very aged persons.

Acute Infections.—It has been observed that ACTH and cortisone modify impressively the clinical symptoms and signs of patients with acute infections. However, in spite of the loss of the clinical manifestations, bacteremia, when present, persists.¹¹ Failure to appreciate this fact has led to death from overwhelming infection in a few instances. We have observed the development of pneumonia without any symptoms in one patient with excessive corticoid levels associated with active Cushing's syndrome. It is necessary to be alert to the development of infections during ACTH and cortisone therapy and to administer the usual doses of antibiotics and chemotherapy, although the clinical signs and symptoms are minimal or absent.

Diabetes Mellitus.—Both ACTH and cortisone aggravate diabetes mellitus. However, by adjusting the insulin dosage as discussed above it is possible to use these agents safely in diabetic patients.

Hirsutism.—The development of hirsutism or the accentuation of a minimal pre-existing hirsutism is likely to occur with prolonged treatment or large doses of ACTH and cortisone. This minor complication reverts quickly to its original state on withdrawal of therapy.

Osteoporosis.—The negative nitrogen balance and increased calcium excretion which accompany the administration of ACTH and cortisone are theoretical objections to their being used in patients with osteoporosis. Thus far, actual aggravation of osteoporosis has not been observed, but it may be if these agents are administered for prolonged periods.

Arteriosclerosis.—Both ACTH and cortisone may conceivably aggravate arteriosclerosis by virtue of the increase of serum cholesterol which they produce. This is due to a direct effect on fat and cholesterol metabolism and the reduction in thyroid activity which they cause. Although no specific complications have arisen, the potentialities are too great to warrant the extensive use of these agents in patients with marked generalized arteriosclerosis.

SUMMARY AND CONCLUSIONS

No one using and administering ACTH and cortisone can help being impressed with the profound physiological disturbances which they produce. One need only recall and reflect on the multiplicity of physiological changes produced by adrenal cortical steroids which have been briefly touched on in this paper. If we consider

10. Turner, T. B., and Hollander, D. H.: Cortisone in Experimental Syphilis (A Preliminary Note), Bull. Johns Hopkins Hosp. **87**:505-509, 1950.

11. Kass, E. H.; Ingbar, S. H.; and Finland, M.: Effects of Adrenocorticotrophic Hormone in Pneumonia: Clinical Bacteriological and Serological Studies, Ann. Int. Med. **33**:1081-1098, 1950.