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Influence of ACTH and Cortisone on the Antibody Production and the Plasma Cell Reaction

By S. Moeschlin, R. Báguena and J. Báguena

In four series of rabbits, the influence of ACTH and cortisone on the antibody production was studied.

All the animals were sensitized with a subcutaneous injection of 3 cm³ of typhoid-paratyphoid-vaccine. Approximately 3 weeks later, when a positive agglutination titer could be demonstrated in the blood, an intravenous dose (2.5 cm³ of vaccine) was administered. The antibody titer was studied every day, the animals were killed 3, 4, 5, 6 and 7 days after the revaccination and the spleen, the bone marrow and the liver examined by smears, histologically and especially the development of the plasma cells by the phase contrast microscope.

In the first series of 20 rabbits, the investigation of *Fagraeus* about the relation between the rise of the antibody titer and the plasma cells was confirmed. Moreover, by phase contrast microscopy the appearance of drop-like, dark granules in these cells could be demonstrated which correspond to the same granulations as shown by *Moeschlin* in myeloma cells producing pathological β - or γ -globulins.

In the second series of 6 rabbits, 3 received 20 mg of ACTH simultaneously with the revaccination and later every day until they were killed. We saw no difference between the antibody titer and the plasma cell number in the spleen of these animals and the control rabbits. Cortisone in a third series administered in the same way (8 rabbits) gave the same result.

Thus ACTH and cortisone, if given simultaneously with the reinjection of vaccine and on the following days, did not change the antibody formation or the plasma cell reaction. In the third series ACTH and cortisone were started 7 days before the reinjection and produced a marked decrease of the plasma cell reaction and the antibody production. Probably the difference in response is rather due to a change in the break-

down of the antigen, which in some way may be inhibited by the preliminary treatment with ACTH and cortisone, than to a depression of the antibody formation itself.

Bibliography: see *Moeschlin et al.*: *Acta Haematol.* **6** (1951), and *Proc. of Internat. Congress of Allergy, Zurich 1951.*