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Abstracts of "Tuberculosis Research"

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Suppression of Tuberculin Allergy by Intravenous Inoculation of BCG Performed Simultaneously with Tuberculosis Infection

Jun ARIMA, Ken-ichi YAMAMOTO, Katsuo ONO and Yoshio TAKAHASHI

The development of tuberculin allergy following subcutaneous infection with virulent tubercle bacilli was markedly suppressed by intravenous inoculation of a definite quantity of BCG.

As the results of quantitative and qualitative studies, it was clarified that the phenomenon occurred with certain degree of specificity; that is, the suppression of allergy occurs only in the case where the antigens to be inoculated through the vein possess the power of conferring tuberculin hypersensitivity.

Serological studies revealed that no correlation was found between circulating antibody and the suppression of allergy.

Allergic Reaction in the Lungs — An Immunopathological Study

1. Allergic Reaction to Foreign Proteins

Kaoru TSUGE, Harue OKUYAMA and Masako TOMISAKI

In order to study the hypersensitive reaction in the lungs, rabbits previously sensitized with ovalbumin or tuberculin-protein together with normal control rabbits were intratracheally reinjected with the same antigens either alone or with adjuvant (Drackeol 9: Arlcel 1). After challenge they were sacrificed at given intervals and the lungs were studied histologically.

In sensitized animals reinjected with the antigens alone, a monocytic reaction took place in the early stage, but it disappeared within a week.

On the contrary, in those reinjected with the antigens with adjuvant a polymorphonuclear reaction developed in the early stage, followed by proliferative inflammation and formation of tuberculoid lesions with some young epithelioid cells.

The lesions produced by the antigens alone were only weak in non-sensitized animals. However the rabbits injected with the antigens plus adjuvant showed severe lesions similar to those observed in the sensitized animals. Nevertheless the formation of the tuberculoid lesions progressed more tardily than in the sensitized rabbits.

Changes produced by reinjection of ovalbumin was somewhat stronger than those by tuberculoprotein, however no qualitative difference could be found between these reactions.

Allergic Reaction in the Lungs —An Immunopathological Study

2. Reaction Against Foreign Bodies

Kaoru TSUGE, Harue OKUYAMA and Masako TOMISAKI

Normal rabbits were intratracheally injected respectively with mineral oil used as adjuvant in the preceeding study, kaolin or lactic acid either alone or together with the adjuvant. Reactions produced by these foreign bodies were studied histologically.

Mineral oil produced severe bronchopneumonia accompanied with intense polymorphonuclear infiltration and hemorrhage on the first day after injection. Five days later monocytic reaction became predominant, and a large quantity of macrophages were observed in the alveoli. From the 10th day these macrophageal reaction changed into lipoid pneumonia. From the 15th day foreign-body tubercles were formed. In the lesions of large mononuclear proliferative inflammation as well as in the tubercles a few young epithelioid cells were observed.

Kaolin produced a only weak reaction, which disappeared within a week.

Lactic acid produced a monocytic reaction from the early stage and widespread atelectatic lesions thereafter.

Progress of the reaction to kaolin and lactic acid mixed with the adjuvant were almost the same as that to adjuvant alone, but the intensity of the reaction to the former was severe than that to the latter.