LEPROSY INOCULATIONS OF GERM-FREE GUINEA-PIGS

GEORGE L. FITE, M.D.

National Leprosy Study Center
Carville, Louisiana

AND WALTER L. NEWTON, Ph.D.

National Institute of Allergy and Infectious Diseases
Bethesda, Maryland

In August, 1958, 11 germ-free guinea-pigs were inoculated with human leprosy. While the result was essentially negative, it is felt that it may be of interest to record, very briefly, this interesting experiment.

The material for the inoculation was obtained surgically from an active lepromatous patient who had had sulfone treatment, but had not received any drug for six weeks prior to the aseptic removal of the skin nodule, which was saturated with bacilli. The tissue was preserved whole on ice and flown from Carville to Washington, where it was introduced into a germ-free unit containing three-weeks-old guinea-pigs. There it was ground into a suspension, and 0.25 cc. inoculated intracutaneously and subcutaneously at two sites into each of the 11 animals.

The tissue was still iced on arrival, and the animals were inoculated 11 hours after its removal from the patient. The suspension yielded no growth in aerobic and anaerobic cultures. The unit remained germ-free during the entire 5 weeks of the experiment.

Two animals were sacrificed at weekly intervals, and three at the termination at five weeks. The sites of inoculation showed minute fibrous foci in most, but not all, of the animals. The visible lesions were sectioned and shown to be granulomas containing well-stained acid-fast bacilli. There was no evidence of increase of bacilli, and the lesions at five weeks were indistinguishable from those at one week.

In view of the absence of progression, or of evidence of development of local hypersensitization, nothing further has been planned in this direction.

SUMMARY

Eleven germ-free guinea-pigs were inoculated, intracutaneously and subcutaneously, with a suspension of a leproma 11 hours after its removal from the patient, during which time it had been flown, preserved whole on ice, from Carville to Washington. Cultures showed that the suspension was free from contamination. The sites of inoculation showed, at most, minute fibrous nodules, without evidence of hypersensitization. Sections showed well-stained bacilli, without evidence of multiplication, the lesions at five weeks being indistinguishable

from those of the animals sacrificed after one week. The experiment was discontinued.

RESUMEN

A 11 cobayos desprovistos de gérmenes se les inoculó intracutánea y subcutáneamente una suspensión de un leproma, a las 11 horas de retirarlo del enfermo, durante cuyo tiempo se le había transportado por avión, conservado íntegramente en hielo, desde Carville a Wáshington. Los cultivos demostraron que la suspensión estaba exenta de contaminación. Los sitios de la inoculación revelaron a lo màs minúsculos nódulos fibrosos, sin signos de hipersensibilización. Los cortes mostraron bacilos bien teñidos, sin signos de multiplicación, siendo las lesiones a las cinco semanas indistinguibles de las de los animales sacrificados al cabo de una semana. El experimento fué abandonado.

RESUMÉ

Onze cobayes indemnes d'infection ont subi des inoculations souscutanées et intracutanées d'une suspension préparée à base d'un léprome prélevé onze heures auparavant et expédié, non découpé et sur la glace, de Carville à Washington par avion. Des cultures ont établi que la suspension était indemne de contamination. Aux endroits d'inoculation, on a relevé chez la plupart des cobayes de très petits nodules fibreux, sans manifestation d'hypersensibilisation. Des coupes ont permis de découvrir des bacilles bien colorés, sans qu'une multiplication puisse être mise en évidence car l'aspect des lésions après cinq semaines ne peut être distingué de celui découvert chez des animaux sacrifiés après une semaine. L'expérience n'a pas été poursuivie.