APPARENT MULTIPLICATION OF THE LANSING POLIOMYELITIS VIRUS IN CORTISONE TREATED CHICK EMBRYOS

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Cortisone has been found by Schwartzman (Proc. Soc. Exptl. Biol. Med., **75**, 835, 1950) and by Kilbourne and Horsfall (Proc. Soc. Exptl. Biol. Med., **76**, 116, 1951) to increase the susceptibility of the host to certain viruses. Studies were undertaken therefore to determine whether the administration of cortisone might render chick embryos susceptible to infection with the Lansing strain of poliomyelitis virus.

Suspensions of infected mouse brains were injected into the allantoic cavity of chick embryos that had been treated with cortisone by injecting 5 mg into the yolk sac. Passages were made with allantoic fluid every 7 days. In one of several attempts to establish the virus, allantoic fluid from the third, fourth, and fifth transfers produced typical paralysis in mice. Other tests have shown that without cortisone the virus persists only for 4 days in the allantoic cavity in sufficient concentration to produce paralysis in mice. The 5 egg passages covered a period of 34 days. In 13 titrations performed on mouse brains infected with the stock virus, only 8 per cent of the mice that received the 10^{-6} dilution became paralyzed while none of those injected with the 10^{-7} suspensions developed paralysis. The dilution of the original inoculum brought about by 5 egg transfers was slightly greater than 10^{-7}. Neutralization tests on the virus recovered from the fifth egg passage, using Lansing antiserum kindly furnished by Dr. Jonas E. Salk, identified it as the Lansing strain. When the virus was mixed with saline, it produced paralysis in all of 12 mice in an average of 8.5 days, but when mixed with the antiserum only 2 of 20 mice developed paralysis and this was delayed to an average of 28 days. Further tests showed that this Lansing antiserum does not give a cross reaction with the virus of mouse encephalomyelitis, strain FA, thus excluding the possibility that this virus had been picked up inadvertently and passed in eggs.

This note is submitted, as the results indicate that it may be possible by the method employed or by improved procedures to establish the Lansing strain in chick embryos.

TYPE-SPECIFICITY OF "IMMUNOLOGICAL PARALYSIS" INDUCED IN MICE WITH PNEUMOCOCCAL TYPE II POLYSACCHARIDE[1]

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The fact that large doses of type-specific polysaccharides of the pneumococci persist in the tissues of mice to result in "immunological paralysis" was well established by Felton and co-workers (J. Immunol., **61**, 107, 1949).

To substantiate the statement by Felton (1) that "this phenomenon which we have termed 'immunological paralysis' is type-specific, ..." an experiment was performed in our laboratory

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to determine the effect of an immunizing dose of type II polysaccharide in mice which had received "paralyzing doses" of type VI polysaccharide. Each of 60 mice was given intraperitoneally either 500 μg of SSS II or SSS VI[4] contained in 0.5 ml of saline. Seven days later each of the "paralyzed" mice and each of 30 normal mice received 0.1 μg of SSS II contained in 0.5 ml of saline. One week after receiving the immunizing dose, the mice were challenged with virulent pneumococcus type II contained in 0.5 ml of saline.

Table 1 shows that an immunizing dose of SSS II which protected normal mice against 100,000 lethal doses of pneumococcus type II also protected mice "paralyzed" with type VI polysaccharide, against at least 10,000 lethal doses, but failed to protect mice "paralyzed" with type II polysaccharide against 10 lethal doses.

TABLE 1

Results of an experiment showing the type-specific nature of the "immunological paralysis" induced in mice with large doses of pneumococcal polysaccharide

HISTORY OF MICE	ML OF ORIGINAL CULTURE*							
	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}
Received 500 μg SSS VI, then 0.1 μg SSS II	0/5†	1/5	4/5	5/5	4/5	5/5	—	—
Received 500 μg SSS II, then 0.1 μg SSS II	0/5	0/5	0/5	0/5	1/5	0/5	—	—
Received 0.1 μg SSS II	1/5	4/5	5/5	5/5	3/5	5/5	—	—
Normal controls	—	—	0/5	0/5	0/5	0/5	1/5	5/5

* The challenge was made with a 14 hour blood-broth culture of pneumococcus type II.

† Numerator = the number of mice that survived at least 96 hours; denominator = the number of mice challenged.

Results of our experiment corroborate not only the findings of Felton and associates that small doses of polysaccharide immunize mice and large doses are nonantigenic, but also that the "immunological paralysis" is type-specific.

[4] The authors are grateful to Dr. H. D. Piersma, Director of the Human Biological Section, Lederle and Company, for the generous supply of both type II and type VI pneumococcal polysaccharides.

A MODIFIED EGG YOLK MEDIUM FOR DETECTING LECITHINASE PRODUCING ANAEROBES IN FECES[1]

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In an attempt to enumerate clostridia in the intestine of the rat, the egg yolk medium of McClung and Toabe (J. Bact., **53**, 139, 1947) was tested as a means of counting anaerobes capable of producing a lecithinase. However, most of the lecithinase positive colonies which developed under strict anaerobiosis in this medium were found to be aerobic sporeformers. Other workers have reported various members of the genus *Bacillus* to produce lecithinases (Colmer, J. Bact., **55**, 777, 1948; McGaughey and Chu, J. Gen. Microbiol., **2**, 334, 1948), but it is of interest that they can do so in the absence of oxygen. When fecal suspensions were plated on the egg yolk medium to which sodium azide had been added at a concentration of 0.02 per cent, and incubated anaerobically, all lecithinase positive colonies were found to be true anaerobes:

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