

## Experimental Street-Virus Rabies in White Mice. Studies on Passive Immunization. I.\*

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The problem of passive immunization against rabies has aroused relatively little interest in recent years. Most of the previous work on this subject is summarized by Kraus, Gerlach and Schweinburg.<sup>1</sup> Our department<sup>2</sup> has published results of experiments on passive protection against fixed-virus infections. Four consecutive passive-protection tests against street-virus rabies in white mice are herewith reported.

The source of the virus† employed was a fresh specimen of dog's brain, which contained Negri bodies. This was minced and preserved by refrigeration in 50% glycerol. Further preparation consisted of grinding to a 1/10 dilution in saline and centrifuging lightly for a few minutes. The supernatant fluid was inoculated intracerebrally into white mice in doses approximating 0.02 cc.

Antirabic serums were prepared as previously reported,<sup>2</sup> by immunizing goats and rabbits with fixed virus. The resultant antiserums, which were filtered and inactivated before use, contained neutralizing antibodies against street-virus. Antiserum was injected intraabdominally in 2 doses of 1 cc. each, 2 days and one day before the intracerebral inoculation of virus. Untreated controls or mice that received corresponding amounts of normal serum were included in all experiments. The passive-protection tests included a total of 60 treated and 70 control mice. Observations were made at intervals of 12 hours during the critical periods of these experiments.

All controls developed symptoms of rabies with surprising regularity and died, the mean incubationary period for this group being 10.6 days. Impression-preparations from the brains of some of these mice showed Negri bodies. Forty-three percent of the treated mice were well at the end of 3 weeks and were classified as survivors.

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<sup>1</sup> Kraus, R., Gerlach, F., and Schweinburg, F., *Lyssa bei Mensch und Tier*, Urban & Schwarzenberg, Berlin, 1926, p. 276.

† Virus was obtained through the courtesy of C. W. Arthur of the Pasadena City Health Department.

<sup>2</sup> Hoyt, A., Fisk, R. T., Moore, F. J., and Tracy, R. L., *J. Inf. Dis.*, 1936, **59**, 152.

These survivors comprised the total treated group of one test, whereas the 27 controls in this series sickened with a mean incubationary period of 11.0 days. Antirabic rabbit-serum was utilized in this experiment alone, goat's serum being employed in the other instances. All mice which were treated with goat's serum died but their mean incubationary period was lengthened to 14.5 days.

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**Effects of Splenectomy on Pituitary Gonadotropic Substances.**

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The recent reports of Gordon, *et al.*,<sup>1</sup> that splenectomized young rats are far more responsive than normal rats to continued treatment with the gonadotropic substance from pregnant urine, leads one to wonder if this is a specific reaction for such extracts or whether the same results could be obtained with pituitary glands.

Young female albino rats 25 days of age were given one male rat pituitary gland as a graft in the leg muscles or intraperitoneally each 5 days for a period of 25 days (either method of grafting gives the same result).<sup>2</sup> At 50 days of age they (Group A, Table I) were castrated and the ovarian weights compared to those from rats with identical treatment except that total splenectomy was performed at 25 days of age (Group B, Table I). These weights averaged 199 and 207 mg. respectively. The range was large in both as shown in Table I and this also is apparent in the large coefficient of variation. Therefore the mean difference divided by the standard error of the difference is not significant, the figure being only 0.2 (Table I) instead of 3 or more.

In a third group (Group C) the recipient rats were splenectomized, grafted with one male rat pituitary gland and castrated 5 days later. The ovaries weighed 18.4 which is similar to the 17.4 mg. obtained in Group D which were grafted but not splenectomized. Thus splenectomy had no apparent effect on the response of the ovaries to pituitary implants of 5 days duration.

In the last group the donors were splenectomized 3 weeks before

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<sup>1</sup> Gordon, Albert S., *Proc. Soc. Exp. Biol. and Med.*, 1937, **36**, 484; *Science*, 1937, **86**, 62.

<sup>2</sup> Emery, Frederick E., *Am. J. Physiol.*, 1937, **118**, 316.