11807 P

Sulfapyridine in Experimental Bacillus Pyocyaneus Infection of the Cornea.*

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The purpose of this investigation was to determine whether or not the oral administration of sulfapyridine would prevent or influence favorably the infection of rabbit's cornea produced by *Bacillus pyocyaneus.*

The corneæ were inoculated with a 24-hour broth culture of the organism after superficial abrasion. The drug was administered twice daily, at 9:00 A.M. and 5:00 P.M. The dosage for each feeding was 0.5 g/kg the first day, 0.35 g/kg the second day, and 0.25 g/kg thereafter. The soluble sodium sulfapyridine† was used for the sake of greater accuracy in determining dosages. Fifteen rabbits which died or were injured during the course of treatment are not included in this report.

A small benign ulcer appeared within a few hours after inoculation in all rabbits receiving 2 prophylactic doses of sulfapyridine during the preceding 24 hours. In one group of these treatment was continued for from 1½ to 6 days. In 25 eyes the ulcer healed with little or no extension in from 1 to 3 days, but in 2 eyes it continued to progress. In another group treatment was continued for one day or less, at which time the ulcers appeared to be healed. Five of these eyes remained unchanged but in 5 others the ulcer became active after a quiescent period of 24 hours and progressed through a typical course of pyocyaneus infection. Eight eyes were inoculated concurrently with the beginning of treatment which was continued for 2½ days. Mild ulcers developed and healed within 24 hours.

In 2 groups of rabbits treatment was instituted after the appearance of the ulcer and was continued for 6 days. In the first group, in which treatment was begun 6 hours after inoculation, the course was usually mild. In 34 of 46 eyes the maximum inflammation occurred within about 12 hours, and in all but 10 of these the cornea

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† Donated by Merck & Co., Rahway, N. J.

had apparently healed within 24 hours. Altogether, 40 eyes were healed at the end of 6 days. In 6 eyes (13%) the inflammation persisted up to 17 days. A hypopyon appeared in only 5 eyes (11%) and in none did the cornea rupture. In 40 eyes (87%) the resultant scar did not exceed 2 mm in diameter.

In the second group of 82 eyes, in which treatment was begun 18 hours after inoculation, the course was usually more severe and the outcome less favorable. The maximum inflammation appeared later and the duration was more prolonged, being over 7 days in 37 eyes (45%). A hypopyon was present in 27 (33%) and the cornea ruptured in 7 (8.5%). The resultant scarring was generally more extensive than in the first group. In 28 eyes (34%) it did not exceed 2 mm in diameter, but in 20 eyes it exceeded 7 mm.

In 82 control eyes the infection occurred in the form of a rapidly progressing superficial ulcer, or less frequently as a ring abscess. A hypopyon, usually large, appeared in 62 eyes (75%) and the cornea ruptured in 46 (56%). The duration of inflammation ranged from 7 days in a few cases to as long as 3 weeks. There were no instances of panophthalmitis. The resultant scar occupied over half the cornea in 72 eyes and in all but 8 of these virtually the entire cornea was involved.

It may be concluded, therefore, that sulfapyridine had a significant effect in the prophylaxis and treatment of experimental pyocyaneus ulcer.

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Pathological Changes in the Gallbladder Wall Due to Action of Bile.

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For a long time the local cytotoxic effect of bile and many of its components on tissue has been recognized. With the exception of the more resistant and adapted mucosa of the intestinal tract and the excretory ducts of the biliary tract, there are few instances in which the production of cellular injury does not occur when bile comes in contact with such tissue. This local action is