Summary. In 2 infants an abnormally high prothrombin time and clotting time was strikingly reduced by administration of a concentrate rich in so-called Vitamin K. The dramatic results in 2 cases suggest that concentrates of this nature may prevent the occurrence of hemorrhagic disease of the newly-born and its tragic consequences.

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Comparative Effects of Sulfapyridine and Sulfanilamide in Type II Pneumococcic Infection of Mice.

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Whitby[1] described a new derivative of sulfanilamide, M & B 693, or sulfapyridine, as being effective in both experimental pneumococcic and streptococcic infection in mice. Whitby found with Type I pneumococcic infection, that a dose of 10 mg of sulfapyridine given to mice by mouth permitted an average survival of 4.6 days. On the other hand, in a similar experiment, a dose of 10 mg of sulfanilamide gave an average survival time of 1.9 days.

Several clinicians have found this product effective in the treatment of human pneumonia due to pneumococci of Types I, II, and III.

Chemically, sulfapyridine is 2-(*p*-amino-benzene-sulfonyl)-aminopyridine. It is sparingly soluble in water at room temperature and somewhat more soluble on heating. The authors used a product prepared in their laboratories, which was purified by several recrystallizations from 50% alcohol and melted at 193-194°C. Analysis showed nitrogen, 16.4%; sulfur, 12.6%; theory, N, 16.8%; S, 12.8%. In addition, sulfapyridine obtained from commercial houses, which had the same chemical properties, was included in our studies.

The toxicity of sulfapyridine was studied on rabbits. Two g per kg of body weight administered *per os* were tolerated by 4 of 6 animals. We had found[2] that 2 g of sulfanilamide were tolerated by

1 Whitby, L. E. H., *Lancet*, 1938, 1210.

2 Raiziss, G. W., Severac, M., Moetsch, J. C., and Clemence, L. W., *J. Chemoth.*, 1938, 91.

50% of rabbits. While this indicates that sulfapyridine is tolerated a little better by rabbits, it must be considered that, being less soluble in water than sulfanilamide, it is absorbed less completely.

Therapeutic Effect. Mice were infected with 100 MLD of Type I, II, or III pneumococcus, whose average minimal lethal dose was 0.5 cc of 1:10,000,000 dilution of broth-culture. The drugs were given by mouth; the dose was 10 mg; the first was administered 1½ hours, the second 6 hours after infection. On the second day 2 doses were given and thereafter one daily. The maximal number of treatments was 10. Table I presents a summary of our experiments.

TABLE I.
Effects of Type II Pneumococcic Infection Followed by the Administration of Sulfanilamide or Sulfapyridine by Mouth.*

Drug	No. of mice used	% surviving after (days)							
		1	2	3	4	5	6	7	8
Sulfapyridine	50	100	98	56	26	18	12	10	8
Sulfanilamide	45	89	24	0	0	0	0	0	0
Controls	80	46	0	0	0	0	0	0	0

*The result of several individual experiments.

Conclusions. While sulfapyridine is somewhat more potent than sulfanilamide in the treatment of Type II pneumococcic infection in mice, it does not cure the animals, but only delays death. Untreated mice survived the infection for 1 day. Twenty-four percent of sulfanilamide-treated animals lived 2 days, while about an equal number of sulfapyridine-treated animals, namely 26%, survived 4 days. The superiority of sulfapyridine over sulfanilamide is only in the delay of death by 2 days. Similar experiments were made in Types I and III pneumococcic infection, and the results obtained were about the same as in Type II. In view of the reported good results observed with sulfapyridine in the treatment of pneumonia, our findings in experimental pneumococcic infection in mice are less encouraging than in human infection.