

ABSTRACTS OF COMMUNICATIONS

*Pacific Coast Branch***Thirty-fifth meeting.***San Francisco, California, December 6, 1922***86 (2046)****The dominant reacting tissues in anaphylactic, peptone and histamine shock.****By W. H. MANWARING, R. C. CHILCOTE, W. S. CLARK and R. E. MONACO.***[From the Laboratory of Experimental Pathology, Stanford University, California.]*

Canine anaphylactic shock, peptone shock and histamine shock are currently assumed to be physiologically identical reactions. In each shock there is a sudden, pronounced fall in arterial blood pressure, the carotid pressure being reduced to about 25 mm. Hg. by the end of two minutes. Recovery usually begins about the tenth minute, the arterial pressure being restored to normal in from 30 minutes to 90 minutes, depending upon the severity of the reaction. In each shock, fatal results may be produced by the injection of large doses or by the use of highly sensitized animals. In each shock there is a pronounced splanchnic engorgement and cyanosis, the production of hemorrhagic lesions in the intestinal mucosa, and a reduction in blood coagulability. In order to test the assumed physiological identity of the three shocks, we have endeavored to determine the topographical distribution of the dominant reacting tissues in each shock.

1. *Canine anaphylactic shock.* Anaphylactic shock (fall in arterial blood pressure) does not take place in dehepatized (Eck-fistula) dogs. This is not only true for the mildly sensitized dogs previously reported,¹ but is equally true for highly sensitized dogs giving the fatal type of the reaction. Practically no change in arterial blood pressure is produced in these highly sensitized animals, even on the intravenous injection of as large a dose as 30 c.c. of specific foreign (horse) serum. The liver

¹ Manwaring, W. H., *Der physiologische Mechanismus des anaphylaktischen Shocks*, *Zeitschr. f. Immunitätsf.*, 1910, viii, 1.

is therefore not only the dominant but the essential reacting organ in canine anaphylactic shock.

2. *Canine peptone shock.* The severity of the peptone reaction is reduced in dehepatized dogs, and is further reduced in completely eviscerated dogs. There are therefore important though not dominant hepatic and intestinal factors in this shock. In dehepatized dogs, recovery from the shock does not take place, the animals dying in about 60 minutes. The liver, therefore is the essential or dominant organ in peptone recovery.

3. *Canine histamine shock.* The severity of the histamine reaction is not reduced in dehepatized dogs nor in eviscerated dogs. The dominant reacting tissues in this shock, therefore, are either confined to the extra-hepatic and extra-intestinal parts, or are fairly evenly distributed throughout the body as a whole. Recovery from histamine shock takes place as promptly and completely in dehepatized and eviscerated dogs as in intact animals.

Canine anaphylactic, peptone and histamine shock, therefore, are not physiologically identical reactions, at least in so far as their initial or fundamental physiologic mechanisms are concerned. The secondary reactions due to low systematic blood pressure are presumably identical in the three shocks. In the later stages of each shock, the secondary reactions conceivably dominate the clinical picture.

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Histamine reactions in isolated canine tissues.

By W. H. MANWARING, R. E. MONACO, and H. D. MARINO.

[From the Laboratory of Experimental Pathology, Stanford University, California.]

Marked histamine reactions may be demonstrated by perfusion methods in isolated canine organs. The following are the reactions thus far studied:

1. *Isolated hind-quarters.* Distinct decrease in perfusion resistance (vaso-dilation), increasing the rate of perfusion flow from 15 per cent. to 200 per cent, depending upon the initial