

# LETTER TO THE EDITOR

## Sensitizing properties of *Haemophilus pertussis* vaccine

SIR,—We have recently reported that injections of *Haemophilus pertussis* vaccine potentiate the production of anaphylactic shock in the albino rat. Such treatment also renders the animal hypersensitive to exogenous histamine and 5-hydroxytryptamine<sup>1</sup>. It has now been found that rats treated with *H. pertussis* vaccine are not hypersensitive to adrenaline, carbachol, reserpine, or potassium chloride, and similar results have been reported in mice<sup>2,3</sup>. Thus the decrease in the resistance produced in animals by *H. pertussis* vaccine is confined so far to histamine, 5-hydroxytryptamine and the products of the antigen-antibody reaction. It is not certain whether the mechanism of the sensitizing property of *H. pertussis* vaccine is similar to that of its immunizing property, as detected by the mouse protection test. Both the histamine-sensitizing factor and the immunizing factor lose potency on storage at 37° for 30 days, though the loss in potency of the former factor is more marked<sup>4</sup>.

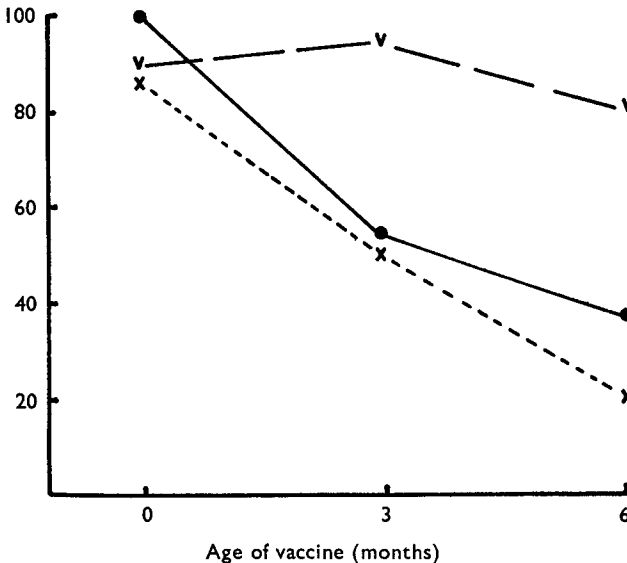


FIG. 1. The influence of age on three sensitizing properties of *H. pertussis* vaccine in rats. The responses recorded are the antigen-antibody reaction (●—●) expressed as the percentage mortality rate, and the sensitivity to histamine (x---x) and to 5-hydroxytryptamine (v---v), both expressed in the form of the reduction in the LD50 value as a percentage of the control value for untreated rats. Note that the sensitizing properties of *H. pertussis* vaccine to histamine and to anaphylaxis are greatly reduced by storing the vaccine for 6 months.

We have now studied the effect of storage at 4° on the sensitizing property of *H. pertussis* vaccine. Control studies using a fresh supply of *H. pertussis* vaccine to test the sensitivity of the animals were carried out at each time period. It was found that such injections always produced the same degree of hypersensitivity to histamine, 5-hydroxytryptamine and the products of the antigen-antibody reaction. But vaccines stored for 3 or 6 months showed a

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decline in their power to produce hypersensitivity to histamine and to anaphylaxis but not to 5-hydroxytryptamine (Fig. 1). Since the immunizing factor does not appear to deteriorate on prolonged storage at 4°<sup>s</sup>, the factors in *H. pertussis* vaccine which render rats hypersensitive to histamine and anaphylaxis probably differ from those producing immunization or rendering the animals hypersensitive to 5-hydroxytryptamine.

The *H. pertussis* vaccine used in all experiments was kindly supplied by Burroughs Wellcome and Co., Beckenham.

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