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Letter to the Editor

A link between atopic and behavioral disorders: indirect evidence from stimulant drug effects

Dear Sir,

A growing number of clinical observations demonstrate that hyperactive children often display allergies and atopic symptoms. In a subgroup of these children, the avoidance of antigens also improves behavior. In a first controlled study we examined whether atopic children show more signs of motor hyperactivity and inattentiveness than controls: a fourfold frequency of hyperactive behavior in the atopic group showed this coincidence to be significant (2).

In hyperactives responding to stimulant drugs, a deficient control of brain noradrenaline (NA) probably causes "underarousal" with (secondary) excess motor activity and inattentiveness. Alternatively, NA is also involved in the control of immune responses: a NA-mediated feedback is suggested to prevent overshoot activity of immune cells (1, 3).

If in these children NA were involved in the development of behavioral as well as atopic disorders, a stimulant drug would affect not only hyperactivity but also atopic signs and thus provide indirect evidence of this pathophysiological link.

In a first, uncontrolled pilot study the central stimulant amphetaminil (10 mg/day) was administered to 4 males and 1 female (9–13 years old) who suffered from hay fever *and* were hyperactive. Their parents assessed hyperactivity as well as the severity of overt hay fever symptoms (conjunctivitis, rhinitis).

The drug reduced hyperactivity and inattentiveness in 3 and hay fever in all 5 children. Mean effects upon hay fever symptoms are shown in Fig. 1. In the absence of other medication, it as obviously amphetaminil which reduced symptom severity for more than 7 h. A planned placebo trial was abandoned for rapidly developing hay fever signs (see Fig. 1).

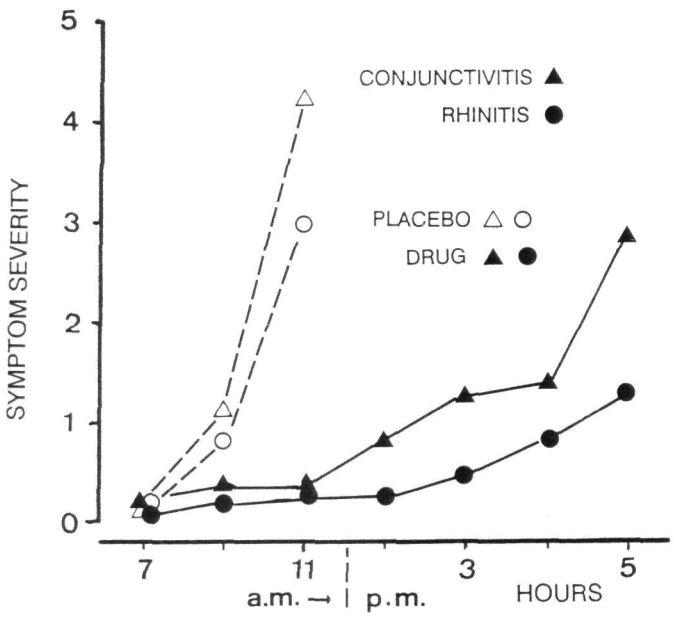

Fig. 1. Intensity of hay fever symptoms rated by the childrens' parents from 0: "not at all"to 5: "extremely strong". Mean values for 5 children on 5 consecutive days (drug) and 1 placebo day, resp. The stimulant drug was given at 7:00 a.m. in a single dose.

This pilot study indirectly confirms the suggested link between both classes of disorders and encourages research employing more sophisticated methods. Although stimulant drugs *are not* an alternative treatment of atopy and these first observations should by no means lead to their premature use in clinical practice, this approach may contribute to the understanding of the relations between immune and nervous functions.

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