

Letters to the editor

Capsaicin at the workplace

We would like to draw attention to the possible role of capsaicin as an occupational hazard in reactive persons.

A 52-year-old woman consulted us for recurrent episodes of chest tightness and dyspnea occurring mostly at night. The medical history was otherwise negative. The patient had been working for 13 years in a perfume factory, but had recently changed her workplace, now handling and conditioning perfumed powders. The appearance of the symptoms was consistent with the change in workplace. There was a symptom-free interval of one to several weeks between each episode. The family history revealed an allergy to flour in her son, who had, for this reason, changed his profession (he was a baker). Clinical examination was entirely normal, including blood pressure, cardiopulmonary auscultation, and peak flow (440 l/min). On only one occasion, at the same time that the patient complained of chest tightness, the self-recorded peak flow was 350. Extensive cardiologic and pulmonary work-up were normal, including pulmonary function tests. Anterior passive rhinomanometry was then performed as described (7), before, during, and after "realistic" provocation tests. The patient brought the perfumed powders she was working with to the clinic, and simulated manipulation at the workplace. Three different powders were tested. Nasal resistance remained normal throughout the tests, but during testing with what was called "chemical pepper", the symptom score became positive, with sneezing and rhinorrhea (2 ml). These results suggest that a capsaicin-induced release of tachykinins caused our patient's symptoms.

The tested "chemical pepper" actually contained capsaicin. Capsaicin (8-methyl-*N*-vanillyl-6-nonenamide) is the major ingredient of the peppers of the genus *Capsicum* (1), of which the characterization as a pharmacologic agent was begun in the 1940s by the Hungarian pharmacologist Nicholas Jancso. Capsaicin alters the neurophysiology of sensory neurons and induces the release of tachykinins such as the neuromodulator, substance P, and it is a unique pharmacologic tool for probing the biologic func-

tions of C-fibers (1, 4). Because the topical application of capsaicin to the skin or nose results in neuromediator depletion, we have used it with some success to treat chronic rhinitis (3, 6). In this patient, the reported symptom-free intervals may also relate to mediator depletion.

Although capsaicin, when inhaled or applied topically to the nasal mucosa, induces symptoms related to tachykinin secretion even in normal persons, substance P induces nasal hyperreactivity only in patients suffering from allergic rhinitis (2). Because no other person working at the same workplace complained of symptoms while handling the powder, we suggest that this patient presented a unique sensitivity to the neuromediators released by capsaicin, a sensitivity which could be mediated by a decrease in endogenous peptidases (1).

References

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