CORRESPONDENCE

Non-infectious fever: inhalation fever or toxic alveolitis?

Sir,—In a recent note, Rask-Andersen and Pratt (1992;49:40) have proposed that we return to the term "inhalation fever" first introduced in 1978,¹ replacing current terms like organic dust toxic syndrome and metal fume fever.

Does this represent an advance or are we back to square one?

The syndrome as such is well known and has for a number of years been related to the specific environment in which it occurs—mill fever, humidifier fever, welder fever and so on. The advantage was that each author describing the symptom in a new environment obtained a publication. The drawback was the ever increasing number of publications describing the same disease.

Experimental work on animals and human subjects has shown that the fever is probably caused by activation of macrophages and secretion of cytokines, particularly tumour necrosis factor. This cytokine has also been found in the blood of volunteers exposed to purified endotoxin. There is also evidence for a reduced blood gas transfer and an accumulation of neutrophils in the lung tissue and the

airways. Fibronectin can be detected in bronchoalveolar lavage.

These changes, taken together, reflect an acute inflammation at the alveolar level (and probably also in the parenchyma of the lung). The inflammatory response is non-specific, apart from endotoxin; it could also be induced by other agents destabilising the macrophage membrane, such as welding fumes and gases from polystyrene.

An important fact is that the inflammatory changes and decreased physiological function may be present without fever and without changes in spirometry. By restricting ourselves to the term "inhalation fever", we may exclude patients with objective and subjective symptoms of exposure but no fever. In that sense, we would be back to square one.

Furthermore, it has been recognised for some time that there is a need to distinguish between toxic and immune mediated reactions to inhaled dusts and fumes. Organic dusts can elicit both types of reactions, which have similar symptoms, including fever. Thus subjects with allergic alveolitis caused by the inhalation of fungal spores typically react with fever after exposure. Non-sensitised subjects exposed to large quantities of some types of organic dusts also react with a febrile inflammatory condition, however. The term organic dust toxic syndrome (ODTS) was proposed at the second Skokloster meeting² to

designate such non-hypersensitivity reactions.

Returning to the term "inhalation fever" brings us back to the time before the distinction between toxic and immune reactions was made, unless the expression is appended with a term which indicates that it refers to toxic and not allergic reactions.

It is desirable to move from terms describing environments and symptoms to terms indicating pathophysiology. The term toxic alveolitis represents a step in this direction. It excludes immune or infectious reactions, points to the inflammatory process, is not limited to one symptom and is not restricted to organic dusts. In Europe, the term alveolitis seems to be more commonly used even though the American expression pneumonitis may be a more correct description of the location of the inflammation. The term can be useful by focusing on the inflammatory process and can be used as a starting line to perform the much needed studies on how this event relates to the chronic changes induced by long term exposure.

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1 Anonymous. Inhalation fevers. *Lancet* 1978;4:249–50.

2 Rylander R, Peterson Y. Organic dusts and lung disease. *Am J Ind Med* 1990;1:1–149.