

Letter to the editor

Severe asthma and plasma serotonin

We read with great interest the review article by Stirling and Chung (1) which includes many pathophysiological and therapeutic factors dealing with severe asthma. With respect to this, we would like to point out the results we obtained on the role played by serotonin in both bronchial asthma and pulmonary vasoconstriction, as well as the therapeutic role exerted by a serotonin uptake enhancing drug in those respiratory syndromes.

In 1994 we presented results dealing with the increasing levels of catecholamines and free serotonin (f 5-HT) in plasma during asthma attacks (2). In 1995 Hervé et al. (3) demonstrated the role played by serotonin in pulmonary hypertension. In 1996 we demonstrated that increased levels of f 5-HT in plasma during asthma attacks were associated with clinical severity and pulmonary function (4). In 1998 we published two research papers showing that tianeptine (a serotonin uptake enhancing drug which reduces plasma f 5-HT) provoked a dramatic and sudden decrease of both clinical rating and f 5-HT plasma levels as well as an increase in pulmonary

function (5,6). Conversely, buspirone (a drug which increases plasma serotonin and displays 5-HT agonist effects) triggers asthma attacks (7,8) which are attenuated by atropine (9). In 1999, Dupont et al. (10) demonstrated that serotonin produced frequency- and concentration-dependent facilitation of cholinergic contractions of human airways. This facilitatory effect of 5-HT was mimicked by both selective 5-HT₃ and 5-HT₄ agonists. These findings demonstrate that 5-HT facilitates cholinergic contractions in human airways. In 2000 Cazzola & Matera published an article (11) dealing with the role played by 5-HT in asthma and other bronchial disorders. These findings were supported by our results (12).

In addition to the above we found that several types of pulmonary hypertension patients, vasculitis (1 case), primary pulmonary hypertension (1 case), chronic bronchitis (3 cases), chronic asthma (7 cases), and obesity (1 case), showing greatly raised 5-HT plasma levels, were much improved by tianeptine administration, and that clinical improvement paralleled normalization of plasma 5-HT

levels, supporting the etiopathogenic role played by f 5-HT plasma levels in both pulmonary vascular and bronchial physiologic disorders (13). Furthermore, we obtained dramatic and sustained improvement in some 16 000 asthmatic patients (children, adolescents and adults) after the first dose of tianeptine administered (14).

We think that the data reported here will afford additional comprehension to the readers of the review article by Stirling and Chung.

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