REFERENCES


Chronic fatigue syndrome

Enteroviruses in chronic fatigue syndrome: ‘now you see them, now you don’t’

M C Dalakas

Can enteroviruses infect human muscle and cause persistent infection that affects only the metabolic machinery of the cells without muscle destruction?

In the paper by Lane et al(see pp 1382–1386)1 an association was found between abnormal exercise lactate response and enterovirus sequences in the muscle of some patients with chronic fatigue syndrome (CFS). The paper rekindles the old saga of enteroviruses, muscle inflammation, and fatigue. CFS remains an elusive entity. When all known factors causing fatigue are excluded, a number of patients have organic disease. Because some CFS patients have impaired muscle energy metabolism,2 the cause of fatigue may not be “in their head” but “in their muscle”. Now, Lane et al propose that
such metabolic impairment is more common in patients with enteroviral sequences in the muscle. The paper raises a fundamental question: can enteroviruses infect human muscle and cause persistent infection that affects only the metabolic machinery of the cells without muscle destruction? If so, is this clinically relevant to CFS patients?

Although coxsackieviruses in mice cause acute myositis, there is no convincing evidence that they also infect human muscle. Cases of epidemic pleurodynia, myoglobinuria, or myocarditis attributed to coxsackieviruses, remain unsubstantiated. The evidence is even weaker for chronic diseases, such as CFS or inflammatory myopathies. Unfortunately, the application of modern molecular virology techniques have not cleared the field; instead, they keep the controversy alive. Furthermore, data on viral persistence emerging from the mouse model and tissue cultures, fuel the scientific interest. After an acute enteroviral infection, mice develop a chronic, T cell dependent, myositis; viral RNA is detectable in the muscle but persistence alters the metabolic machinery of the cell; and show that such abnormalities cause clinical symptomatology. This is a laborious, but worthwhile effort that may prove rewarding for the millions of CFS patients because anti-enteroviral agents are now available (pleconaril) or in the offing. The authors may be on the right target but there are no shortcuts in pursuing it.

REFERENCES

Essential tremor

Multicentre European study of thalamic stimulation in essential tremor

J P R Dick

Bilateral thalamic deep brain stimulation continues to show well maintained benefit in patients who have severe essential tremor after seven years with little increase in stimulation parameters.

In their paper, Sydow et al (see this issue pp 1387–1391) have shown sustained long term efficacy of high frequency deep brain stimulation of the thalamus (Vim) for the management of severe essential tremor. This observation is of interest as certain authors had commented that its benefit may wane with time.

A multicentre European trial had initially demonstrated the efficacy of thalamic deep brain stimulation (largely unilateral) in the management of essential tremor and a subsequent comparison of bilateral Vim stimulation with unilateral thalamotomy suggested that deep brain stimulation was more effective and certainly associated with fewer side effects. In the latter study the outcome was slightly better for essential tremor patients (using either procedure) than for patients with Parkinson’s disease or multiple sclerosis. At 6 months some tremor had recurred in 7 of 34 patients (3 Parkinson’s disease, 4 multiple sclerosis) undergoing unilateral thalamotomy and in 3 of 34 (1 Parkinson’s disease, 2 multiple sclerosis) undergoing bilateral deep brain stimulation; no tremor had returned in any of the 13 patients with essential tremor. The greater efficacy of bilateral thalamic deep brain stimulation for essential tremor is highlighted by Deuschl et al in their review. They comment that a bilateral procedure may have additional benefit for tremor of mid-line structures.

In this study, 37 essential tremor patients managed with bilateral thalamic deep brain stimulation were reviewed after one and six years. While there was a non-significant trend towards increased tremor after six years, an excellent functional improvement was still maintained when comparing both activities of daily living and tremor scores, ON and OFF stimulation. This trend would, of course, be consistent with the natural history of essential tremor. The observed increase in stimulator output during the six year period largely arose in the first year (2.0 to 2.3 V). The authors speculate that the subsequent increase (2.3 to 2.6 V) was a reflection of disease progression, although acknowledge that it may have reflected an element of tolerance.