Chapter 6

Integrative aspects of the ENS

Introduction
This session was co-chaired by Marcello Costa and Gervais Tougas and its aim was to examine the integration processes which link the enteric nervous system (ENS) with other body systems. In the first paper, John Furness describes a recently discovered neural phenomenon which may help explain the hypersensitivity and hyper-reflexia of the gut present in functional disorders such as irritable bowel syndrome (IBS).

The next paper by Lionel Bueno considers the interaction between the ENS and the immune system which can result in immediate and long term changes to receptor populations as well as phenotypic changes in the effector cells. These neuroimmune changes may trigger alterations in the ENS which are responsible for chronic dysfunction as in IBS, for example. Data concerning the involvement of prostaglandins and cyclooxygenase enzymes (COX-1 and COX-2) in pain emanating from the viscera is discussed by Denis McCarthy. He alludes to the possible involvement of prostaglandins in the modification of how visceral pain is perceived and acted upon.

Emeran Mayer examines processes related to the perception of visceral sensations. Such sensations usually occur only in situations which require a specific behavioural response, for example the sensation of fullness after eating or the need to empty the rectum, but in certain pathological conditions such as IBS there is an upregulation of visceral sensitivity. Recent findings from brain imaging studies are described which identify the supraspinal contributions to altered visceral sensation.

In the final paper of this chapter, Ingvard Wilhelmsen looks at the influence of psychosocial factors on gastrointestinal disorders and the role of psychotherapy in the central modulation of these disorders.