Chronic fatigue syndrome: a hypothesis focusing on the autonomic nervous system.

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Source

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Abstract

Chronic fatigue syndrome is a debilitating illness of unknown aetiology, with estimated levels of prevalence of up to about 8.7/100 000 in the U.S.A. Like pain fatigue it is a personal, emotionally rich experience, which may originate from peripheral or central sites (or both). The nature of the symptoms is complex and reflects the interaction of the patient with the environment and cultural milieu. Accordingly the common use of the same terminology for different types of fatigue may be misleading. Autonomic activation is a key component of both real and simulated physical exercise. Alterations in autonomic nervous system activity are a key component of several physiopathological conditions. In chronic fatigue syndrome disturbances in autonomic activity, and in other homoeostatic mechanisms, such as the hormonal and immune systems, have been reported recently. In this review we followed the hypothesis that in chronic fatigue syndrome the paradoxical condition of disturbing somatic symptoms in the absence of organic evidence of disease might be addressed by focusing on attending functional correlates. In particular we addressed possible alterations in cardiovascular autonomic control, as can be assessed by spectral analysis of R-R interval and systolic arterial pressure variability. With this approach, in subjects complaining of unexplained fatigue, we obtained data suggesting a condition of prevailing sympathetic modulation of the sino-atrial node at rest, and reduced responsiveness to excitatory stimuli. Far from considering the issue resolved, we propose that in the context of the multiple physiological and psychological interactions involved in the perception and self-reporting of symptoms, attendant changes in physiological equivalents might furnish a convenient assessment independent from subjective components. Indices of sympathetic modulation could, accordingly, provide quantifiable signs of the interaction between subject's efforts and environmental demands, independently of self descriptions, which could provide convenient measurable outcomes, both for diagnosis and treatment titration in chronic fatigue syndrome.

Comment in


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