Depression and Adjustment in Friedreich's Ataxia

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Nicholas Friedreich first described the disorder that today bears his name in 1863. Friedreich's ataxia (FA) is a relentlessly progressive, degenerative neuromuscular disorder that is primarily characterized by ataxia and eventually, cardiomyopathy. The disorder, which is inherited as an autosomal recessive trait, typically presents with appendicular ataxia in middle to late childhood. As the disease progresses, axial ataxia, cerebellar dysarthria, and peripheral neuropathy become apparent. In the later stages of the disease, examination usually reveals normal intellect, dysarthric speech, ocular dysmetria, neurosensory hearing loss, normal motor strength, hypotonia, distal atrophy, pancerebellar signs, prominent posterior column dysfunction, distal diminution to pin sensation, areflexia, and extensor plantar responses. Pes cavus and scoliosis are also commonly seen. Congestive heart failure due to hypertrophic cardiomyopathy is frequently the eventual cause of death and can occur at any age. Glucose and pyruvate intolerance have consistently been observed and resulted in the recent hypotheses that enzymes involved in pyruvate metabolism (i.e., pyruvate dehydrogenase, malic enzyme) are deficient. Currently, the etiology of FA remains unknown.

Several years ago we made the observation that FA patients had an unusually frequent occurrence of severe depression requiring psychiatric intervention. From 1985 to 1987, 32 patients were evaluated for inclusion in a study we conducted regarding the efficacy of amantadine hydrochlo-

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ride in the symptomatic treatment of the cerebellar dysfunction seen in FA (Peterson, Saad, and Nigro 1988).

In order to pursue the earlier observation regarding an increased incidence of serious depression, the FA patients were also evaluated for the existence of significant depression requiring psychiatric intervention.

Of these 32 patients, four were symptomatic for acute depression and required immediate psychiatric intervention. The patients were either acutely depressed when they came to muscular dystrophy clinic or were hospitalized for medical problems when the depression became apparent. Two patients were suicidal. Long-term antidepressant therapy was required for three patients and all required ongoing psychiatric care. In all patients, the depression manifested with hostility, anorexia, loss of self-worth, guilt, sleep disturbances, and withdrawal. The psychiatric consultant felt all patients suffered an endogenous depression. Superimposed on the endogenous depression were the problems typical of patients with a progressive debilitating disease. Dexamethasone suppression tests were negative. We were unable to identify any factors that distinguished the four depressed patients from the other FA patients. They did not have family histories of depression or bipolar disease, nor were their social situations or physical disabilities significantly different from the other patients. In no patient was a concomitant drug therapy, such as cardiac drugs, deemed responsible for the depression. Computed tomography of the brain, electroencephalography, and evoked potentials did not reveal significant differences between those patients who were depressed and those who were not.

Is endogenous depression more likely to occur in FA patients than in those with other neuromuscular diseases? Is the association of depression and FA real? Four patients out of 32 does not seem a highly significant number; however, in our experience it is disproportionately high. We see over 750 patients a year in our muscular dystrophy clinic. Although our FA population represents 5 percent of this total, it constitutes 40 percent of our patients who suffer severe depression requiring psychiatric intervention. Most patients with neuromuscular disorders other than FA do express difficulty in coping with their disease but do not exhibit signs and symptoms of endogenous depression. Why does the incidence of significant depression appear to be higher in FA? FA differs from the other neuromuscular diseases. FA patients are not weak; despite adequate strength they may be unable to ambulate or perform a simple task such as reaching for a glass of water. The frustration inherent in this type of neurological disability becomes apparent very early on. Does FA involve an

inherent organic affective disorder as part of its spectrum of central nervous system involvement? Could it be that depression, in at least some individuals, manifests in this disease because depression is a biochemical disorder, and a putative dysfunctional gene in endogenous depression may be linked to the gene that is abnormal in FA? These questions remain to be answered.

In conclusion, whether or not our observation is correct and if so, what underlies the association, remains to be clarified. Until such time, physicians should be aware of our experience and be ready to provide the necessary psychiatric intervention should one of their FA patients present with signs and symptoms of acute depression. Physicians must also be aware that tricyclic antidepressants have the potential to aggravate preexisting cardiomyopathy and must, therefore, be used with care. We intend to pursue our studies of these patients in an attempt to identify other affected FA patients, to try to determine what distinguishes depressed FA patients from the others, and to better understand the etiology of the depression.

REFERENCE

Peterson, P. L., J. Saad, and M. A. Nigro. 1988. "The Treatment of Friedreich's Ataxia with Amantadine Hydrochloride." *Neurology* 38(9):1478-1480.