

"In Medicine one must pay attention not to plausible theorizing but to experience and reason together. . . . I agree that theorizing is to be approved, provided that it is based on facts, and systematically makes its deductions from what is observed. . . . But conclusions drawn from unaided reason can hardly be serviceable; only those drawn from observed fact." Hippocrates: *Precepts*. (*Short communications of factual material are published here. Comments and criticisms appear as letters to the Editor.*)

## Chronic Fatigue Syndrome Should Not Be Diagnosed in Children

ABBREVIATIONS. CFS, chronic fatigue syndrome; CNS, central nervous system.

The diagnosis of chronic fatigue syndrome (CFS) is based on inclusionary and exclusionary criteria.<sup>1</sup> There are no known diagnostic markers for this condition. Different diagnostic criteria were developed in the US,<sup>2</sup> Great Britain,<sup>3</sup> and Australia.<sup>4</sup> More recently an international panel has suggested a revised set of criteria<sup>5</sup> (Table). In all these cases, the diagnosis of CFS is limited to adults.

Recently, the issue of diagnosing CFS in children has been raised.<sup>6</sup> During the October 1996 meeting of the American Association for Chronic Fatigue Syndrome in San Francisco, two separate panels were convened to discuss this issue. If CFS were a distinct disease process, there is no a priori reason why it should not occur in younger individuals. Diagnosing CFS in adolescents may not be difficult. The same criteria used in adults may be applied, or simply modified. It is an entirely different problem defining CFS in children less than 13 years of age.

The clinical manifestations of CFS in younger individuals are impossible to predict. In young children fatigue-producing diseases often manifest paradoxical symptoms. Sleep deprivation and the sedative effect of phenobarbital, when used for epilepsy, frequently do not produce the fatigue that is seen in adults. Rather, they produce inattention, hyperactivity, and behavioral disorders.

In addition to the uncertain clinical presentation of CFS in children, there is the additional difficulty of obtaining an accurate history of clinical symptoms from a young person. A clinician is often limited to obtaining a history from the parents. In the case of subjective CFS-related symptoms, that history may be inaccurate or incomplete.

Fatigue is a nonspecific symptom that can arise from many medical conditions. In younger children, as contrasted to adults, the number of potential diseases that could produce fatigue is much larger. Cat-

egories of additional illnesses that need to be considered include: central nervous system (CNS) infections (acute or chronic), degenerative CNS disorders, genetic-metabolic disorders, CNS space-occupying lesions, convulsive disorders, myopathies, neuropathies, and mitochondrial disorders, among others. It would be impossible to arrive at an exclusionary list of possibilities. It would also be impossible to define a recommended minimal list of diagnostic procedures that should be performed to rule out fatigue-causing diseases, as has been done in adults.<sup>5</sup> In addition, psychiatric processes may produce chronic fatigue. In addition to depression, anxiety disorders, and somatization disorder, which occur in adults, in children one must consider school phobia, parental pressure and dysfunctional family dynamics, among other possibilities.

In childhood neurologic diseases, it is paramount not to miss diagnoses because there are many treatable conditions. Also, among those that are incurable, there are many inherited diseases that may recur in subsequent pregnancies, or in other family members. In these cases knowledge of the disease is important for family genetic counseling.

Besides my work in CFS, for the past 6 years I have provided all of the child neurology consultation services to a managed care program serving approximately 250 000 members in the Chicago area. Although I have seen referred children and adolescents with fatigue symptomatology, in all cases a medical or psychologic explanation for the fatigue was found.

Over the past 3 years, in the CFS Center we have seen and evaluated over 300 referred patients. There were no referred children and only 6 adolescents. In each of the adolescent cases, the patients showed a tremendous degree of belligerence to the medical history and physical examination process and did not comply with recommended diagnostic tests or with suggested treatment programs. The impression of these adolescents was that their basic problem lay in a psychologic disturbance, probably in relation to familial dynamics.

There is no urgency in diagnosing CFS in younger individuals because there is no known effective treatment for this condition. However, diagnosing CFS in children may lead to: 1) a delay in the diagnosis of a treatable medical disease; 2) termination of investigations for rare or novel conditions that may respond to novel therapies (such as the treatment of lethargy in children with chronic neurologic handicaps and Rett syndrome<sup>7,8</sup>); 3) avoiding the detection of psychologic or familial difficulties that may lead to

Received for publication Nov 19, 1996; accepted Jan 13, 1997.

Address correspondence to: Audrius V. Plioplys, MD, Chronic Fatigue Syndrome Research Center, Mercy Hospital and Medical Center, Stevenson Expressway at King Drive, Chicago, IL 60616.

PEDIATRICS (ISSN 0031 4005). Copyright © 1997 by the American Academy of Pediatrics.

Major Criteria

1. Unexplained, persistent or relapsing chronic fatigue that is of new or definite onset (not lifelong)
2. Fatigue is not due to ongoing exertion
3. Fatigue is not substantially alleviated by rest
4. Fatigue results in substantial reduction in previous levels of occupational, education, social or personal activities

Minor Criteria

1. Self-reported impairment in short-term memory or concentration severe enough to cause substantial reduction in previous levels of occupational, educational, social, or personal activities
2. Sore throat
3. Tender cervical or axillary lymph nodes
4. Muscle pain
5. Multijoint pain without joint swelling or redness
6. Headaches of a new type, pattern, or severity
7. Unrefreshing sleep
8. Postexertional malaise lasting more than 24 hours

A case of CFS must fulfill all the major criteria, plus 4 or more of the minor criteria. Each minor criteria must have persisted or recurred during 6 or more consecutive months of illness and must not have predated the fatigue. A patient who does not fully meet the CFS criteria may be diagnosed as having idiopathic chronic fatigue.

fatigue; and 4) condoning, fostering, and encouraging the development of a lifelong disability lifestyle in the patient and family.

Concerning the diagnosis of CFS in adolescents, cautionary words must be raised. A disease that has recently received much publicity is neurally mediated hypotension. This condition of autonomic dysregulation has been associated with fatigue<sup>9</sup> and claims have been made that up to 95% of CFS patients suffer from it. The majority of CFS patients who respond to treatment of neurally mediated hypotension, which includes the use of fludrocortisone, are adolescents.<sup>9</sup> Many CFS treatment centers, including this one in Chicago, have been unable to replicate these findings. We have studied 10 adults with CFS using an identical tilt table protocol<sup>9</sup> and in all cases we obtained normal results. The most likely reason is that adolescents, who are simply fluid- and electrolyte-depleted, develop fatigue as a secondary problem and are being diagnosed as having CFS. This is not an inconsequential problem because these adolescents are being subjected to all of the potential complications of long-term mineralocorticoid use.

Given all the uncertainties and difficulties associated with trying to diagnose CFS in children and adolescents, it is preferable to simply not use this diagnosis at all.

AUDRIUS V. PLIOPLYS, MD, FRCPC, FAAP, CMD  
 Chronic Fatigue Syndrome Research Center  
 Mercy Hospital and Medical Center and  
 Department of Neurology  
 University of Illinois  
 Chicago, IL 60616

REFERENCES

1. Plioplys S, Plioplys AV. Chronic fatigue syndrome (myalgic encephalopathy): a review. *South Med J*. 1995;88:993-1000
2. Holmes GP, Kaplan JE, Gantz NM, et al. Chronic fatigue syndrome: a working case definition. *Ann Intern Med*. 1988;108:387-389
3. Sharpe MC, Archard LC, Banatvala JE, et al. A report-chronic fatigue syndrome: guidelines for research. *J R Soc Med*. 1991;84:118-121
4. Lloyd AR, Hickie I, Boughton CR, et al. Prevalence of chronic fatigue syndrome in an Australian population. *Med J Aust*. 1990;153:522-528
5. Fukuda K, Strauss SE, Hickie I, et al. The chronic fatigue syndrome: a comprehensive approach to its definition and study. *Ann Intern Med*. 1994;121:953-959
6. Bell DS. Diagnosis of chronic fatigue syndrome in children and adolescents: special considerations. *J Chr Fatigue Synd*. 1995;1:29-36
7. Plioplys AV, Kasnicka I. L-carnitine as a treatment for Rett syndrome. *South Med Jour*. 1993;86:1411-1413
8. Plioplys AV, Bagherpour S, Kasnicka I. L-carnitine as a treatment of lethargy in children with chronic neurologic handicaps. *Brain Dev*. 1994;16:146-149
9. Bou-Holaigah I, Rowe PC, Kan J, Calkins H. The relationship between neurally mediated hypotension and the chronic fatigue syndrome. *JAMA*. 1995;274:961-967