

Chronic Fatigue Syndrome and the Role of Sensitivity Processes

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• ASEM International Scientific Meeting • Clear Mountain, Queensland • 9/11/95 •*

The principal emerging view is that Chronic Fatigue Syndrome is a group of illnesses sharing the common factor of severe, unexplained pathological fatigue. All seem to be multifactorial in origin, with toxic, allergic, nutritional and infective factors reported as causative or contributory. The illnesses affect multiple organ systems, including the nervous system, immune system, endocrine system, and the gastro-intestinal tract, including the liver. A number of biochemical changes are now being identified in sufferers.

The research focus was initially on the altered immunology, later shifting to the neurological changes. The focus is now increasingly on the subtle but significant changes in biochemistry and the function of many organ systems. A recent paper by the author, as part of a research effort by the University of Newcastle, has shown an association between Chronic Fatigue Syndrome and raised levels of organochlorine pesticides. This is discussed, as are findings yet to be published, drawn from this research program.

The diagnosis of Chronic Fatigue Syndrome depends upon a typical history, a certain number of positive responses on formal questionnaire, and the exclusion of other known illness through history, clinical examination and pathology testing. New diagnostic criteria have recently been put forward by the Centre for Disease control in the USA, replacing those of 1988. These broaden the definition of CFS, while introducing the additional category of Idiopathic Chronic Fatigue (ICF). A simple checklist to ensure correct categorisation is provided for attendees. Proposed additional criteria, drawn from the Complementary Medicine in CFS National Consensus Conference held in Sydney earlier this year, are presented, along with other consensus outcomes from the conference.

There are a number of important positive clinical examination findings and assessment tools which practitioners should be aware of. The standard assessment tools must be used if practitioners are to contribute to the research effort into Chronic Fatigue Syndrome. These are discussed briefly, and copies of these assessment tools are available from ACMA.

There is a significant cross-over between the diagnoses of Chronic Fatigue Syndrome and Multiple Chemical Sensitivities (MCS). In the former, the predominant factor is chronic pathological fatigue, whereas in MCS the predominant factor is heightened olfactory sensitivity to common volatile chemical agents. This is termed *cacosmia*, and occurs at levels of exposure which the majority of the population would either not perceive, or would find subtle and inoffensive. The two clinical conditions will be dealt with in parallel throughout the presentation.

Questions which remains unanswered about MCS relate to the extraordinarily low exposure levels at which symptoms may develop. Some authors assert that the condition relates to neurotic “chemophobia”, and that damage is impossible at such low dosages, often orders of magnitude below known toxic levels There is no evidence to support either assertion. Investigators using SPECT scanning, NMR scanning, CNS evoked response testing, profiles of oxidative damage, urinary amino acid profiles, metabolic profiles, and assessment of immunological parameters have demonstrated clear differences between controls and those affected. Further, differences have been demonstrated between cases and those with psychological illness. Finally, there is some emerging evidence that the neurological damage may in some sufferers be permanent. This may be related to NMDA/GABA receptor alterations, leading to CNS damage via oxidative mechanisms.

Many possible mechanisms for Chronic Fatigue Syndrome and Multiple Chemical Sensitivities have been put forward, each with varying degrees of evidence. A number of these will be discussed, along with brief management proposals, including:

- Failure of olfactory inhibition, leading to limbic and hypothalamic alteration
- Post-antibiotic GIT disorders, with secondary sleep disorders
- Alterations of CNS receptor function, especially NMDA and GABA receptors
- Stimulation of (auto-inhibitory) Histamine (H3) receptors
- Increased xenobiotic exposure, or failure of effective detoxification processes
- Mitochondrial damage, with disturbance of membranes and ATP production
- Increased oxidative damage generally, leading to damage to the CNS
- Novel infective agents, including “stealth” viruses and abnormal HHV-6 strains

It should be remembered that Chronic Fatigue Syndrome and Multiple Chemical Sensitivities are stable illnesses which are difficult to treat successfully, but generally do not lead to death. This could indicate that these are adaptive responses to particular environmental threats, not dissimilar to hibernation. Attempting to directly manipulate the biology of an individual may have associated risks, and constant objective reassessment of patients under treatment is needed to minimise iatrogenic risk, and to assess improvement.

Correct identification of subgroups within the general diagnosis of Chronic Fatigue Syndrome and Multiple Chemical Sensitivities may lead to improved understanding of the processes involved, and the diagnostic assessment tools will be critical in defining such categories. Accurate categorisation may also lead to improved management of both diseases, by allowing for accurate reversal of at least some of the biological processes implicated. All practitioners are encouraged to join in this research effort, and can do so by contacting ACMA at PO Box 328, Mosman, 2088 Australia (Fax: +61 2 9968-3378 or +61 2 9968-4778).