Guest Editorial

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Memory Disturbance in Gulf War Veterans: I Forgot the Question

In this issue of *Federal Practitioner*, Dr. Daniel Orme, a retired U.S. Air Force officer and practicing academic clinical neuropsychologist, takes onus with the findings of the 2008 Research Advisory Committee on Gulf War Veterans' Illnesses ("Is Gulf War Illness 'Real'? The Jury Is Still Out" on page 13). The information the committee used to make their recommendations is explored and challenged, especially in regard to the data on Gulf War illness (GWI) and memory disturbances, a major psychologic consequence in GWI noted by the panel.

One of the good things about our society is that opposing opinions can still be brought to public scrutiny, and we encourage the public to listen to the opinions presented and make their own assessment of the validity. The article is articulate and focused on the data used for the committee's recommendations on GWI. The author finds problems with the medical literature chosen—specifically the testing used in this literature concerning memory disturbances in this population—and he raises concerns about the reliability of the data used. We would dare say the author's findings and opinions will be inflammatory to many involved in GWI advocacy.

On November 17, 2008, the Research Advisory Committee on Gulf War Veterans' Illnesses, which was congressionally appointed and staffed with independent scientists and veterans chosen by the VA, announced that GWI is a distinct physical condition. Dr. Orme's article challenges 2 premises advocated by the committee. The first premise is that in order for GWI to exist, there must be objective evidence linking the syndrome with memory impairment. The second premise is that there should be no plausible alternative explanations for GWI symptoms. The author provides a thorough evaluation of the data and concludes there is no consistent or reliable evidence of objective memory deficits associated with GWI. Furthermore, the author implies that much of the data to support GWI is based on nonspecific physical and psychological symptom reports that lack rigorous scientific reliability and validity. The author states that the self-reported data to support GWI are influenced by reduced effort, possible malingering, or simply are lost in the background findings of normal symptoms reported by a large percentage of the general population. He then proposes an alternate psychiatric diagnosis termed "functional somatic syndrome." This diagnosis is described as a mixed mood and somatoform disorder that is influenced by psychological, societal, and environmental stressors with minimal or no objective physical findings to support a unifying diagnosis.

A DIFFICULT ILLNESS TO GET A HANDLE ON

A major difficulty with understanding GWI is identifying the potential etiologies and diverse clinical manifestations. The presumed primary etiology is chemical exposure. For many veterans, an accurate exposure history is difficult to characterize. Gulf War veterans were potentially exposed to U.S. Military–issued pyridostigmine bromide tablets used to protect service personnel against nerve gas agents. Additionally, environmental organophosphate pesticides, insect repellents, low levels of nerve or mustard gas, oil fires, and depleted uranium have been alleged as potential exposures. Besides the chaotic environment and combat stress factors that make maintaining an accurate chemical exposure history difficult, some veterans presenting with GWI may have served only after the Gulf War was prosecuted. In addition, many Gulf War veterans report multiple physical and psychological symptoms; conversely, there are just as many who report isolated symptoms. To complicate matters, a major limitation of much of the GWI research is that very limited data are included on veterans' predeployment and immediate postdeployment physical and psychological functioning. Because of these inherent difficulties with GWI, there is a tendency to characterize unexplained syndromes as primary psychological disorders, as the author has postulated.

If the etiology of GWI is presumed to be multiple toxin exposures, then it's plausible that the clinical manifestations would involve many brain functions, such as mood, sleep, processing speed, attention, concentration, and executive functioning. The absence of strong evidence for memory deficits does not explain the other cognitive deficits associated with GWI. Furthermore, it is difficult to study 1 cognitive function independent of the influence of other brain functions. An example is studying impairments

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in attention and concentration independent of the effects of disturbed sleep or depressed mood. Subclinical cognitive deficits may also be difficult to identify on formal psychological testing. Service member cohorts are typically compared as normative samples with similar age and education and not based on their individual prior level of functioning.

If the data to support memory impairment are minimal at most, there remain many studies describing impairments in global brain functions, such as executive function, attention, concentration, and processing speed. Thus, the diagnosis of GWI as defined by the committee has multiple symptoms. Challenging 1 aspect of the neuropsychological findings may not totally dismiss the diagnosis. Many times, in retrospect, the "truth" lies somewhere in between polarized opinions, and the complexities of the human physical/psychological interactions remain somewhat mysterious. So, if GWI is to be truly explored, we need to heed all experts in the field and design the right studies and get the best data we can to make the right decisions for our veteran population.

THE SOLDIER'S WELL-BEING IS THE ULTIMATE CONCERN

In summary, Dr. Orme's article raises some valid concerns about GWI and memory, and challenges us to re-examine more closely this elusive entity, to explore better ways to study the syndrome, and to carefully consider plausible alternative explanations. In the meantime, the U.S. Armed Forces has made a concerted effort to better evaluate service members' predeployment and postdeployment cognitive functioning.

Deployments remain extremely stressful events for our service members and their families, even as commands continue to provide as much support as possible. At the same time, it is very important when communicating with our Gulf War veterans to listen and understand their physical and psychological symptoms and to provide the best health care available. Should GWI eventually be characterized as a functional somatic syndrome, it still deserves our attention, empathy, and understanding. ●

Author disclosures

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