SHORT REVIEW OF NEW PUBLICATIONS

BY PROFESSOR MALCOLM HOOPER

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Two new publications will be of paramount importance to both the ME and the Gulf War Veterans communities.

1. Robert Bradford, Senior Director of Communications at the Salk Institute,California, posted a news release on 18th March 2003.

Research from the Salk Institute for Biological Studies at La Jolla, California has published findings which are the first to demonstrate a clear genetic link between neurological disorders (including Gulf War syndrome) and exposure to organophosphate chemicals. Organophosphates include household chemicals as well as chemical weaponry. The gene is one that scientists had not studied in previous efforts to find connections between these chemicals and neurological disease. The researchers had originally been looking at how environmental factors immediately affect the nervous system. Some of the observed neurological problems echoed many of the symptoms seen in Gulf War syndrome. The work was led by Dr Carrolee Barlow, who stated that this study shows that there may indeed be a genetic connection that explains how exposure to pesticides can cause neurological disorders. It has now been shown that organophosphate exposure inhibits the activity of a gene called neuropathy target esterase (NTE). Different people may have different forms of the NTE enzyme, which explains why some people develop problems whilst others do not. The Salk team is working to detail how losing NTE function results in neurological changes.

The study was published in the 17th March 2003 online version of Nature Genetics.

2. These findings accord with the work of Professor Malcolm Hooper, whose most recent publication is entitled "Engaging with Myalgic Encephalomyelitis" but which also addresses the issues of Fibromyalgia, Gulf War syndrome, chemical sensitivities and autism (overlapping syndromes)

This is a fully referenced 85 page document which contains colour photographs. It is dedicated to Derek Peters of the Northern Ireland Campaign for ME/CFS Healthcare (who sponsored the publication), to the late Dr John Richardson (a compassionate clinician and champion of more than 4,000 ME sufferers for over 50 years) and to "all who suffer with and care for people with ME, who have taught me so much about courage, endurance and being fully human".

In his customary robust form, Hooper deals with facts, not beliefs or speculation and those facts are soundly based on biochemistry, which those who promote a primary psychiatric pathoaetiology will find difficult to refute with any degree of credibility.

Hooper is explicit: in addition to his scientific investigations of sufferers (which he details in the text), he writes that he has examined much of the ME literature and is "fully persuaded of the organic nature of this illness and the folly and cruelty of attempting to regard it otherwise".

He explains how he came to be involved with ME and overlapping conditions, and how he discovered "new and disturbing areas of suffering, abandonment by conventional medicine, and

heroic persistence in mutual support and the search for understanding, diagnosis, treatment and hope for the future".

There are 14 sections, with the Introduction covering not only prevalence and symptomatology, but also definitions of terminology, the deception which surrounds the terminology and classification of the disorder, psychiatrists who are committed to theories of somatisation, and various National Reports on the disorder. In discussing the UK CMO's Report of January 2002, Hooper points out that it offered only psychological techniques of cognitive behavioural therapy and graded exercise as the preferred "treatments" and he states "Much evidence was ignored in reaching these conclusions". He is similarly unenthusiastic about the draft document of 17th December 2002 from the MRC Research Advisory Group on CFS/ME and he quotes the searing comments of world experts who pointed out that the Royal Australasian College of Physicians' Guidelines (upon which the MRC relies heavily) were flawed, biased, inaccurate and based on personal belief as opposed to evidence-based medicine, inadequate and potentially damaging. Hooper notes that despite all the published research which demonstrates an organic basis for these overlapping disorders, the situation in the UK remains one of denial and refusal to face all the evidence.

The main thrust of the publication is a detailed explanation of the neuroendocrine – immune paradigm and the interactive web of biochemical / physiological deficits found in ME in both adults and children, and in related disorders. Hooper also identifies various investigations, including more specialised tests than basic screening, which are of major importance in diagnosis, together with treatment protocols that have a realistic prospect of success, including the removal of casomorphins (present in milk) and gliadomorphins (present in wheat).

Hooper explains how normally, the cells of important membrane barriers that line not only the gut and the lungs but which provide the all-important blood-brain barrier have tight cell junctions that prevent many compounds from crossing these membranes, but that some chemicals are known to open these tight cell junctions, allowing free transport into the previously protected areas of what ought to be excluded compounds. When the gut wall has increased permeability, the opioid peptides (casomorphin and gliadomorphin) which would normally be excluded are absorbed into the blood stream, giving rise to diffuse symptomatology and systemic dysfunction. Inflammation of the gut is common among ME patients, as are allergic reactions to foods including gluten. The compromised gut facilitates the development of a gut dysbiosis which in turn can give rise to autoimmune diseases, with very significant and chronic damage to health.

Hooper and his team have found that a test they were using in the Autism Unit at Sunderland (the IAG test, which stands for *trans*-indol-3-ylacroylglycine, a urinary metabolite of the essential amino acid tryptophan) was highly positive in Gulf War veterans. This led to the testing of those with ME and those with organophosphate poisoning, including other chemically poisoned people; in nearly every case, high levels of IAG appeared in their urine. For this to be happening means a dysfunctional gut and sufferers from these overlapping conditions show evidence of a "leaky gut", i.e. an increased permeability of the gut wall due to damaged membranes. Hooper explains very clearly how this happens in people who are described by certain psychiatrists as exhibiting "MUPS" ("multiple unexplained physical symptoms") and he shows that their multitude of symptoms are not "unexplained" at all and that they are entirely organic in origin.

Hooper explains that he has been deeply impressed by the dedication, expertise and humanity of the people who have cared for and supported those with ME, some of whom have worked in the field of medical research despite having ME themselves. He makes special mention of Dr Vance Spence who, with Professor Jill Belch and Drs Faisal Khan and Gwen Kennedy, is part of a major research group at the Vascular Diseases Research Unit at the University of Dundee. The Dundee group has carried out a large research study involving ME patients, organophosphate farmers and Gulf War Veterans. Together with Dr Neil Abbot, Director of Operations at the Perth-based national charity MERGE (ME Research Group, whose website can be found at www.meresearch.org.uk) they provide rigorous clinical and scientific research that addresses these overlapping conditions.

Spence has identified very extensive damage to the endothelium which lines all blood vessels: it was found to be swollen and stiffened as a result of severe damage: damage of this kind would compromise the blood supply to the deep capillary beds in all tissues, including nerve cells. This is an important and novel finding that provides new insights into the organic aetiology of ME. These findings are quite distinctive and very different from the damage found in either the Gulf War Veterans or the OP poisoned farmers. Hooper stresses it is important to note that for these overlapping syndromes, there are objective tests that can uniquely characterize the related but individual syndromes.

In summary, the IAG system involves the gut, brain, endocrine and immune systems: in ME, it is clear that the biochemical deficits are extensive. Detoxification is essential. Hooper sets out the basis for the neurological damage produced by a common mechanism but by different insults, biological or chemical, producing symptoms common to these overlapping syndromes, including ME.

This is a vital and compelling publication. Copies may be obtained (price £3.50 plus £1.05 postage) from ***Malcolm Hooper, Emeritus Professor of Medicinal Chemistry, School of Sciences, University of Sunderland, SUNDERLAND, SR2 3SD, UK***.