

**MEDICAL RESEARCH COUNCIL
(CFS/ME RESEARCH ADVISORY GROUP)
DRAFT DOCUMENT FOR PUBLIC CONSULTATION
DECEMBER 17th 2002**

This interesting forty page paper is divided into nine sections and includes thirteen references, with Annex (1) relating to the composition and CVs of the research group and Annex (2) a summary of the previous public consultation questionnaire (November 2002) unrelated to the present paper. As much of the material overlaps between sections, I have chosen to concentrate on the very explicit “mission statement” (page 5 para 18). This focuses on seven strategic themes reflecting the headings used in the remainder of the document and the research recommendations of the CMO’s Working Party (1999 – 2002):-

1. RESEARCH AND REFINEMENT OF CASE DEFINITION

- a) Inevitably, this has to start with TERMINOLOGY (see page 7 para 34). “CFS/ME, the name chosen throughout the document is a contradiction in terms, for it binds together two conflicting (1992) WHO classifications: (1) “CFS” (ICD 10 F48.0) comprising a variety of mental illness and (2) “ME” (ICD 10 G 93.3) which defines a single neurological illness. I comment only on the second classification.

- b) The earliest definition of ME (WALLIS 1957) ⁽¹⁾ was the first to provide clear epidemiological detail, to describe the classical disturbance of the autonomic nervous system found in all patients and to define the disease and its variations in children. In 1990, DOWSETT, RAMSAY, BELL et al ⁽²⁾ published a detailed clinical and laboratory study of 420 patients followed up for 12 years. This may be what is sometimes described as “the RAMSAY (London) definition” though the study was based in Essex. WALLIS’s description has never been improved upon and three further classifications (HOLMES 1988, THE OXFORD 1990 AND FUKADA 1994) have caused sufficient confusion between research workers to demand yet another revision in the USA!

2. EPIDEMIOLOGICAL FRAMEWORK

This is indeed the rationale for any scientific study. A determined and well-planned attempt to find out the who, what, where and when, will often disclose the bonus of why! This has definitely not been neglected in the UK, beginning with the seminal epidemiological study by ACHESON in 1959 ⁽³⁾. This work has been continued without a break by RAMSAY ⁽⁴⁾. (35 years), RICHARDSON ⁽⁵⁾ (40 years), and DOWSETT ⁽⁶⁾ (39 years, ongoing), enabling DOWSETT AND RICHARDSON to present “The epidemiology of Myalgic Encephalomyelitis (ME) in the UK 1919 – 1999” to the Department of Health, the Chief Medical Officer’s working party on ME and to the all-party Parliamentary Group of MPs interested in ME at Westminster, in the autumn of 1999. Our studies show that ME is endemic in the UK but with epidemic and pandemic potential and describes in detail the epidemic in the mid 1960s and the pandemic between 1980 and 1989 when there was a seven-fold increase in incidence both here and abroad.

3. DEVELOPING AND TESTING HYPOTHESES ABOUT PATHOPHYSIOLOGY

A Latin aphorism well known to the medical profession states that it is only by discovering the cause of an illness that the effect can be removed. With the advance of modern technology in the early 1980s and the availability of brain-imaging and molecular biology, much has been discovered about this illness:-

MICROBIOLOGY: The introduction of the POLYMERASE CHAIN REACTION (PC.R) ⁽⁷⁾ has linked this disease with some thirteen species of polio and non-polio viruses. Isolation of these from the brain, heart muscle and other internal organs (eg, at post mortem ⁽⁸⁾ or by transplantation ⁽⁹⁾) has already revolutionised the management of enteroviral heart disease, especially in young people and children.

BRAIN IMAGING: The use of SPECT and PET scans ⁽¹⁰⁾ indicates metabolic disturbance of the brain, leading to an explanation of the central fatigue suffered by all patients together with the prolonged recovery after exercise and the specific cognitive disturbances described over the years. M R I Scans are less useful in the UK but, with the different techniques used in the USA, they reveal areas of inflammation and other damage adjacent to blood vessels ⁽¹¹⁾ in the brain. This technology indicates the encephalitic nature of the illness.

HORMOMAL ASSAYS ⁽¹²⁾, now routinely available, indicate damage to the HYPOTHALMUS and its dependent functions, which clearly explain the abnormal response to stress and the generalised autonomic disturbance.

4. DESIGN AND EVALUATION OF INTERVENTIONS

Further scientific discoveries recently reported, indicate that embryonic stem cells ⁽¹³⁾ left over from foetal development, remain in the brain tissue during adult life and are capable of “running repairs” (thus patients are able to recover after head injury, stroke and relapse in ME). However, overuse of these repairs, as in ME (when the patients are overstressed physically or mentally) will cause unnecessary deterioration which may then become irreparable. Intervention in the form of financial, rehabilitation and nutritional support can do much to prevent the physical, occupational and other deterioration in the quality of life for a large group of patients now between 40 and 60 years of age, to say nothing of educational loss in children.

5. HEALTH SERVICE INTERVENTIONS

It is sad to read that these are said to be of dubious priority in the present state of the NHS (page 169 para 170, see also above paragraph) when it is known that the correct type of rehabilitation can stabilise the illness ⁽¹⁴⁾. This requires access to local facilities without discrimination against patients with a diagnosis of ME, together with a domiciliary nursing service for the bed-bound who are unable to travel.

6. RESEARCH CAPACITY AND INTERFACE WITH SERVICES

CURRENT TECHNOLOGICAL ADVANCES include:-

- a) **DIAGNOSIS:** using rapid PCR ⁽¹⁵⁾ methods (readable within five hours) to detect acute enterovirus infection in schools, paediatric and maternity units, infant and primary schools can assure the correct treatment and prevent unnecessary hospital admission and antibiotic administration. Between 6% and 10% of school children exposed to enteroviral infection may later develop ME ⁽¹⁶⁾.
- b) **TREATMENT:** improved antiviral drugs now being developed for childhood infections in the USA ⁽¹⁷⁾.

The discovery of interfering RNA (DS RNA i) ⁽¹⁸⁾ discloses a natural method of limiting infection.

Knowledge about embryonic stem cells (including those naturally occurring in the brain) ⁽¹⁹⁾ provides a means of repair in many neurological conditions.

The discovery of defects and imbalance in the production of active and inactive genetic strands of viral RNA ⁽²⁰⁾ provides further diagnostic and therapeutic possibilities.

Direction of this research into schools, using modern technology, would provide the most favourable and the most economical opportunity for epidemiology, diagnosis and prevention of outbreaks by immunological means (eg, vaccination).

- c) **MODERN TECHNOLOGY** will enable mobility, possible independence and means of communication for severely affected patients especially those still able to study or train.

7. THE VALUE OF LAY PARTICIPATION

It has to be remembered that the cognitive disturbances described in this illness, rarely involve the intellect. Some of the finest researchers in the past and the present have been sufferers from ME and two of them currently work in the UK. Many patients, who pace themselves carefully, enter further education later in life (eg, the Open University) and by this and other means become PhD students. Others, affected in childhood, go on later to enter the medical, legal and other professions to say nothing of success in the Arts and many domestic or financial occupations. The “expert patient” training schemes are currently in operation. All of these are to be commended.

The excellent Annex (No 2) added to this document indicates the range of common sense in relation to research on the part of lay carers, patients and the doctors and scientists who help them although it needs (as elsewhere) suitable prioritisation!

REFERENCES

- (1) **WALLIS, A L.** AN INVESTIGATION INTO AN UNUSUAL DISEASE IN EPIDEMIC AND SPORADIC FORM IN GENERAL PRACTISE IN CUMBERLAND IN 1955 AND SUBSEQUENT YEARS.
UNIVERSITY OF EDINBURGH DOCTORAL 1957
- (2) **DOWSETT E G, RAMSAY A M et al.** MYALGIC ENCEPHALOMYELITIS – A PERSISTENT ENTEROVIRAL INFECTION?
POST GRADUATE MEDICAL JOURNAL 1990; 66: 526-530
- (3) **ACHESON E D,** THE CLINICAL STNDROME VARIOUSLY CALLED BENIGN MYALGIC ENCEPHALOMYELITIS, ICELAND DISEASE AND EPIDEMIC NEUROMYASTHENIA
AMERICAN JOURNAL OF MEDICINE 1959; 26: 569-595
- (4) **RAMSAY A M,** MYALGIC ENCEPHALOMYELITIS AND POST VIRAL FATIGUE STATES – THE SAGA OF THE ROYAL FREE DISEASE.
LONDON: GOWER MEDICAL PUBLISHING. 1988
- (5) **RICHARDSON J.** MYALGIC ENCEPHALOMYELITIS/CHRONIC FATIGUE SYNDROME AND ENTEROVIRAL MEDITATED ORGAN PATHOLOGY.
HAWORTH PRESS INC. 2000. 10 ALICE STREET, BINGHAMTON, NY 13904. (ISBN: 0-7890-1127-1)
- (6) **DOWSETT E G, RICHARDSON J. et al.** THE EPIDEMIOLOGY OF MYALGIC ENCEPHALOMYELITIS(ME) IN THE UK –1919-1999.
PRESENTED TO THE CMS’S WORKING PARTY ON CFS/ME, THE DEPARTMENT OF HEALTH AND THE ALL PARLIAMENTARY GROUP PF MPs INTERESTED IN ME IN WESTMINISTER 1999.
- (7) **MARKHAM A F.** THE POLYMERASE CHAIN REACTION: A TOOL FOR MOLECULAR MEDICINE.
BRITISH MEDICAL JOURNAL 1993; 206: 441-445
- (8) **RICHARDSON J.** VIRAL ISOLATION FROM BRAIN IN ENCEPHALOMYELITIS.
JOURNAL OF CHRONIC FATIGUE SYNDROME 2001; 9 (3/4): 15-19.
- (9) **McGARREY F. et al.** ENTEROVIRAL IN CHRONIC FATIGUE SYNDROME.
ANNUALS OF INTERNAL MEDICINE 1994 ; 120: 972-973
- (10) **BOWLES. M E, et al.** DETENTION OF COXSACKIE “B” VIRUS SPECIFIC RNA SEQUENCES IN MYOCARDIAL BIOPSY SAMPLES FROM PATIENTS WITH MYOCARDITIS AND DILATED CARDIOMYOPATHY.
LANCET. 1986; 1: 1120-1122
- (11) **RICHARDSON. J, COSTA D C.** RELATIONSHIP BETWEEN SPECT SCANS AND BUSPIRONE TESTS IN PATIENTS WITH ME/CFS.
JOURNAL OF CHRONIC FATIGUE SYNDROME. 1998; 4 (3): 23-38
- (12) **BRUNO R L.** “THE POLIO PARADOX” CHAPTER 11: 164-166. WARNER BOOKS INC 2002, 1271 AVENUE OF THE AMERICAS, NY 10020. (ISBN: 0-466-52907 9)
- (13) **RICHARDSON J.** DISTURBANCE OF HYPOTHALMIC FUNCTION AND EVIDENCE FOR PERSISTENT ENTEROVIRUS INFECTION IN PATIENTS WITH CHRONIC FATIGUE SYNDROME
JOURNAL OF CHRONIC FATIGUE SYNDROME 1995; 1 (2): 623-624.
- (14) **STEINDLER D A, PINCUS D W.** STEM CELLS AND NEUROPOESIS IN THE ADULT HUMAN BRAIN
LANCET 2002; 329: 1047-1054
- (15) **GREENWOOD R.** THE FUTURE OF REHABILITATION LIES IN RETRAINING, PLACEMENT AND REGROWTH

EDITORIAL, BRITISH MEDICAL JOURNAL 2001; 325: 1082-1083

- (16) **ROBINSON C C. et al.** IMPACT OF RAPID POLYMERASE CHAIN REACTION. RESULTS ON THE MANAGEMENT OF PAEDIATRIC PATIENTS WITH ENTEROVIRAL MENINGITIS
PAEDIATRIC INFECTIONS DISEASES JOURNAL 2002; 21 (4): 283-286
- (17) **DOWSETT E G, COLBY J.** LONG TERM SICKNESS ABSENCE DUE TO ME/CFS IN UK SCHOOLS. AN EPIDEMIOLOGICAL STUDY WITH MEDICAL AND EDUCATIONAL IMPLICATIONS
JOURNAL OF CHRONIC FATIGUE SYNDROME 1997; 3 (2): 29-42.
- (18) **ROTBART H A.** ANTIVIRAL EFFECT OF COMBINATION OF ENVIROXIME AND DISOXARTIL ON COXSACKIE VIRUS B1 INFECTION.
ACTA VIROLOGICA. 2000;44 (2): 73-78.
- (19) **GITTLIN L, KARELSKY S. et al.** SHORT INTERFERING RNA CONFERS INTRACELLULAR ANTIVIRAL IMMUNITY IN HUMAN CELLS.
NATURE. 2002; 218: 430-434.
- (20) **STEINDLER D A, PINCUS D W.** STEM CELLS AND NEUROPOESIS IN THE HUMAN BRAIN.
LANCET. 2002; 359: 1047-1054.
- (21) **REETOO K N. et al.** QUANTATIVE ANALYSIS OF VIRAL RNA KINETICS IN COXSACKIE VIRUS B3-INDUCED MURINE MYOCARDITIS.
JOURNAL OF GENERAL VIROLOGY. 2000; 81: 2755-2762.

DR E. G. DOWSETT
JANUARY 2003