4.8 Dementia in Later Life: Research and Action

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Introduction

Dementia is the acquired global impairment of higher cortical function including memory, the capacity to solve the problems of day-to-day living, the performance of learned perceptuo-motor skills, the correct use of social skills, all aspects of language and communication and control of emotional reactions, in the absence of gross clouding of consciousness. The condition is often progressive though not necessarily irreversible (College Committee on Geriatrics 1981).

The Dementias of Old Age

The most common causes of failure of brain function in elderly people are senile dementia of Alzheimer type (SDAT) and multi-infarct dementia (MID), disorders which currently are classified in the International Classification of Diseases, Ninth Revision (ICD 9) within code 290. The histological features characterizing the former include neurofibrillary tangles, plaques and loss of neurons in the cortex, in the basal nucleus of Meynert and in the basal forebrain. The two last-mentioned cell losses result in diminished cholinergic activity, particularly in regard to reduction in levels of choline acetyltransferase and acetylcholine. The causes of these histopathological and neurochemical changes have not yet been elucidated.

Public Health Consequences of Dementia

The importance of dementia as a public health problem is no longer in dispute. It is a principal cause of disability and dependence in old age. Epidemiological studies consistently show a high prevalence of this group of disorders: some 5% — 8% of persons aged 65 and above are estimated to manifest dementia of severe degree. [The generic term dementia includes dementia attributed to neuropathological Alzheimer change (SDAT), cerebral infarction (MID), dementia secondary to known disease plus others of unknown origin.]

Despite the recent huge increase in the number of mentally infirm old people admitted to long-term stay facilities, there is ample evidence that institutionalized old people represent only the tip of the iceberg. Epidemiological studies indicate, at least in Europe, that only one-fifth of elders with severe forms of mental disorder are placed in institutional care.

The yearly cost of caring for 2 million sufferers in the United States of America is estimated at 26 billion (10^9) dollars. Research expenditure on the condition amounts to US$ 22 millions.
In most countries, the upsurge of public concern on dementia is not reflected by a reordering of priorities, either in medical service provision or in scientific research. This delay in responding to a problem of increasing urgency has implications for the rate of progress in scientific knowledge. A claim to high priority in terms of public effort, financial investment and scientific endeavour can be justified with respect to the five outstanding tasks specified below. An international strategy is required to correlate the different areas of research, to finance the more promising endeavours and to work co-operatively towards reducing the risk of senile dementia as populations age, especially in developing countries (WHO 1984). The present report presents such a strategy.

**Elements of Proposed Research Programme**

**Problems of Diagnosis and Classification**

In view of the need for rigorous assessment of present and future drug treatment, an immediate task is to develop screening procedures and instruments for early diagnosis together with an agreed staging of the dementia process. Also required are measures that differentiate SDAT from other types of dementia, and that differentiate between dementia and the pseudodementia associated with treatable mental disorders.

An urgent recommendation to WHO is to convene a group that would develop agreed "core" clinical criteria and nomenclature for the diagnosis of dementia in older persons and to incorporate operational criteria for grading severity. Such a group would be charged with developing an internationally reliable and valid mental state examination instrument together with a structured clinical interview — both being linked with the Tenth Revision of the International Classification of Diseases (ICD 10). The group would also help to field test instruments for differential diagnosis at the primary health care level.

A promising area for research in administering and developing instruments is the use of portable microcomputers.

Introduction of non-invasive methods for investigating the brain, such as computerized axial tomography, positron emission tomography and nuclear magnetic resonance, may help in the development of more precise clinical differentiation, although such studies must be limited to centres with sophisticated technology.

**Epidemiological Research**

Clinical epidemiological studies of the natural evolution of the dementias in different cultures should be supported by WHO in advance of developments in pharmacological intervention. One way of doing this inexpensively would be to develop methods of analysing diaries kept by family members of SDAT victims.

For aetiological purposes estimates of incidence are considerably more valuable than prevalence. Such studies of incidence require longitudinal investigations and long-term funding of teams of investigators.

It would be prudent for WHO to support the few teams of investigators involved in longitudinal studies to help them co-ordinate their methodology and