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## Alzheimer's disease research group (ADRG)

### Introduction

In these last few years, there has been a growing consensus in Europe and beyond on the need of increasing research on neurodegenerative diseases including Alzheimer's disease and other related dementias. The societal impact and financial consequences of these diseases are already being felt and will continue to grow with the projected rise in the elderly population. Currently, there are over 35 million individuals with dementia worldwide, a figure that will treble by the year 2050. It has been estimated that formal and informal dementia care costs a total of €445 billion (2009 data),<sup>1</sup> equivalent to 1% of the global gross domestic product. It is therefore not surprising that the European Union supports various funding programmes in the hope of enhancing diagnosis, provide better treatment and improve care pathways and support for individuals with dementia, their caregivers and relatives.

### Alzheimer's disease

Approximately 50% to 70% of all dementia cases are of the Alzheimer type. Alzheimer's disease, first identified in 1907 by the German neurologist Alois Alzheimer, is a progressive neurodegenerative disorder characterised by the presence of plaques and tangles in areas of the brain controlling cognitive function. Symptoms include memory impairment, difficulties in spatial orientation, changes in mood and personality, communication deficiencies and functional losses in activities of daily living. As the disease progresses, cognitive function becomes more impaired and individuals will eventually become totally dependent on others. Life expectancy following diagnosis varies but usually ranges between 8 to 15 years. Risk factors include age, female gender, presence of Apo4 gene, repeated head trauma and cardiovascular and metabolic factors.

There is no single test to determine the presence of Alzheimer's disease and diagnosis relies on several features including the elimination of other co-morbidities, careful physical and mental examination, clinical investigation and disease progression.

### Dementia in Malta

Particular interest in the field of dementia in Malta kicked off with the launch of the Malta Dementia Society in September 2004. The main aim of the society is that of increasing awareness on dementia in the Maltese islands through the organisation of seminars and talks on various aspects of dementia care and management. The Malta Dementia Society is an active member of Alzheimer Europe and Alzheimer Disease International and is frequently invited to participate in various European and pan-European initiatives. The first study to determine the prevalence of dementia in the Maltese islands was published in 2007.<sup>2</sup>

The findings estimated that, in 2010, there would be approximately 4,500 individuals with dementia, accounting to 1.1% of the local population. This figure is expected to double in the next 30 years. Recent data on prevalence rates using new criteria suggests that the number of individuals with dementia is higher than previously reported and should exceed 14,000 cases by the year 2060.<sup>3</sup> This progressive increase in affected individuals will have important socio-economic consequences and will invariably put greater demands on government-supported health care services. Moreover, there will be a growing burden on family members who, in the majority of cases, provide informal care at home.<sup>4</sup> The importance of addressing this increasing phenomenon led to the setting-up of the Malta Dementia Strategy Group in 2009 with the aim of presenting a series of recommendations to the Ministry of Health that should enhance high-quality dementia care.<sup>5</sup> The final document laying down the backbone of the National Dementia Plan was presented in January of 2010. Although the final text have not been published to date, various recommendations included in the plan are being ratified such as the addition of dementia among the chronic conditions listed in the Schedule V of the Social Security Act.

### Dementia Research in Malta

Although financial resources have been limited, research on dementia

including Alzheimer's disease in Malta has increased considerably in these last five years. Most of this research is based at the University of Malta and focuses on cellular, molecular, pharmacological and social aspects of dementia with special emphasis on Alzheimer's disease. Following a grant funded by the Malta Council of Science and Technology (Research and Innovation Programme 2008-2012) to study how naturally occurring compounds can act as possible protective agents in Alzheimer's disease, a number of contributions were published in international peer-reviewed journals.<sup>6-8</sup> Publications in other areas of Alzheimer's disease and related dementias include those by Innes et al,<sup>4</sup> Scerri,<sup>5</sup> Scerri et al<sup>9</sup> and Scerri and Scerri.<sup>10</sup> A number of local and international undergraduate and graduate students have also been involved in the running of this research programme.

### Alzheimer's Disease Research Group (ADRG)

The number of students interested in furthering their research in dementia is progressively increasing. Furthermore, Alzheimer's disease is becoming a topic of national interest and the number of research projects in which Malta is expected to act as a partner is expected to grow in the future. Albeit its size and geography, Malta can have an important voice as demonstrated by the number of requests

to collaborate in various foreign-based projects. With this in mind, the Department of Pathology has launched the Alzheimer's Disease Research Group with the aims of:

1. Bringing together a number of multidisciplinary professionals in the field of Alzheimer's disease and related dementias;
2. Promoting and facilitating research and scientific collaboration in the diverse disciplines in Alzheimer's disease and related dementias with the ultimate goal of improving patient and caregiver care and quality of life;
3. Acting in unison with local dementia NGOs in the dissemination of scientific knowledge and advancement of research goals in Alzheimer's disease and related dementias;
4. Participating in and exploring local and international research funding proposals in the basic, social and clinical fields of Alzheimer's disease and related dementias.

A number of international research institutions have already shown interest in forming workable partnerships with this group both in national, European and pan-European funded projects. It is hoped that through such research cooperations, the University of Malta will continue on its endeavour of becoming an important contributor in the field of Alzheimer's disease research. **S**

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