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The Marigliano–Cacciafesta polypathological scale: A tool for assessing fragility

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Abstract

The aim of our studies was to establish a standard method of assessment that allows an early identification of frailty in the elderly, i.e., to predict who are at risk of developing disabilities, in order to be able to intervene with preventive global and individualized measures. A new multidimensional scale called Marigliano–Cacciafesta polypathological scale (MCPS) was used on 180 elderly people, together with the Barthel index (BI), the global evaluation functional index (GEFI), the geriatric depression scale (GDS), the mini mental state examination (MMSE), the mini nutritional assessment (MNA), and the Tinetti test. A strongly significant statistical correlation was found between the MCPS and the nutritional state, mood level, motor functionality, level of disability and global functionality. As the fragile patients are at a risk to develop disabilities, we think that our scale can be a significant contribution to the multidimensional geriatric assessment (MGA), aimed at identifying and quantifying the parameter of fragility of each patient, an information which should be known, if we intend to introduce preventive measures.

Keywords: MGA; Frailty of the elderly; Comorbidity in elderly; Prevention of disability in elderly

1. Introduction

Italy is one of the countries with the oldest population in the European Union (EU): in 2000, the proportion of those over 65 years of age reached 18%, as against an average of 16.2% in the member countries of the EU. Aging and an increase in life expectancy do not

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necessarily imply an improvement in quality of life (QoL); the facts show quite the contrary. Taken as a group, the over-65 subjects represent only 6.5% of the total world population, but make 80% of the number of persons with function and self-sufficiency deficits, and 28% of the health-care spending is devoted to them. It is not so much a single pathology that results in an elderly person's loss of being self-sufficient, but rather the disability is a result of comorbidities and the influence of socioeconomic factors.

Instead of being an unavoidable consequence of aging, frailty has been recognized as an independent geriatric syndrome; its clinical characteristics are anorexia, sarcopenia, osteoporosis, fatigue, risk of falls, poor physical health; frail elderly are highly vulnerable to adverse outcomes such as disability, dependency, need for long-term care and death (Fried et al., 2001, 2004; Morley et al., 2006). Frail elderly people show reduced stress tolerance because of decreased physiological reserves in the muscles, bones, circulation, and hormone and immune systems.

The presence of three or more of the following criteria is used for clinical diagnosis: unintentional weight loss, exhaustion, low energy expenditure, slowness, and weakness (Bandeen-Roche et al., 2006).

The course of frailty is progressive and leads to disability. The term primary frailty is used in absence of clinical disease or disability; secondary frailty is used when the syndrome is associated with clinical disease.

For effective prevention and treatment of frailty, the primary form must be recognized and interventions, such as exercise to preserve muscle mass and strength, appropriate nutrition, especially adequate protein intake, treatments for pain and depression, need to start early (Strandberg and Pitkälä, 2007).

Fragility must thus be seen as a condition at risk of rapid deterioration in an elder person's state of health, which does not presuppose, but nor does it exclude, the coexistence of disabilities in the activities of everyday life. In accordance with the conclusions of the Consensus Statement of the National Institute of Health and of the Comprehensive Geriatric Assessment Position Statement of the American Society, MGA is defined as a multidisciplinary assessment in which the multiple problems of an elderly person are identified, described and explained, his or her functional capacities are defined, the need for assistance services is established, a treatment and care plan is developed, and in which various interventions are matched to needs and problems. The international community has worked strenuously to define tools for collecting standardized data that not only ensure that all areas of interest are covered, but also can provide an objective assessment for patient follow-up and for comparisons between patients or groups of patients (Rubenstein, 1983; Rubenstein et al., 1984, 1988, 1989; Stuck et al., 1993).

2. Subjects and methods

The study is based on 180 persons, 65 males and 115 females (male/female ratio = 1/1.77), aged between 65 and 97 years (average age = 79.5). Of this sample, 71% fell into three age bands: 70–74, 75–79, 80–84, amounting to 18, 21 and 31% of the total, respectively. The over 90s were 9%. Patients were examined with a geriatric assessment including activities of daily living (ADL) (Katz et al., 1963, 1970), instrumental activities