

Common Morbidity in Elderly Population

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Abstract

Background: At advanced ages, people are at their highest multi-morbidity risks that also lead to growing medical expenditures. It is a complex process, influenced by many factors. Biologically, aging is associated with accumulation of molecular and cellular damages over prolonged periods of times which leads to a gradual decrease in physiological functions of an individual, and therefore, aggravate the risk of diseases, infirmity, and ultimately causing death.

Aim: In this review, we will look into the common morbidity in elderly population.

Methodology: The review is comprehensive research of PUBMED since the year 1995 to 2015.

Conclusion: Awareness of age-related physiological changes, such as reduced acuity of vision and hearing, slow reaction time, and impaired balance, will prepare patients and caregivers to manage risks, make informed decisions, and perhaps prevent falls and medication adverse effects. Elderly need help and support of the medical fraternity. Geriatric assessment should be done regularly. Among elderly oldest old, female elderly and widowed are the vulnerable group that need more attention.

Keywords: Elderly; Common Morbidity in Elderly

Introduction

Traditionally, man has three major periods of life: childhood, adulthood, and old age. Old age is now evolving into two segments, a third age (young old) and a fourth age (oldest old) [1]. Globally, more than 800 million people are over 60 years or more, which represent 12% of total population [2].

At advanced ages, people are at their highest multi-morbidity risks that also lead to growing medical expenditures. It is a complex process, influenced by many factors. Biologically, aging is associated with accumulation of molecular and cellular damages over prolonged periods of times which leads to a gradual decrease in physiological functions of an individual, and therefore, aggravate the risk of diseases, infirmity, and ultimately causing death [3]. The risks of different diseases may be not independent: disease that has occurred earlier can increase or decrease the probability of occurrence of the disease that will be diagnosed later [4]. Population aging generates many challenges and sparks concerns about the pace of future economic growth, the operation and financial integrity of healthcare and pension systems, and the well-being of the elderly [5].

The prevalence of diseases in the elderly population has generally increased over time. Most survey data are based on self-reported morbidity. Although self-reported data are often assumed to underestimate true prevalence, investigators report higher prevalence in a Dutch population of diabetes mellitus, cardiac disease, lower-back complaints, and asthma on the basis of self-reports than of medical records. However, increasing trends have generally been shown for both self-reports and medical records [6,7].

Multi-morbidity rapidly increases with age such that it is prevalent in over 70% of individuals 75 years or older. The accumulation of chronic conditions as a result of genetics, lifestyle choices, environmental factors, treatment of prior conditions (e.g. heart failure as an adverse consequence of chemotherapy regimens) and aging itself culminates in a vastly heterogenic older population of adults that require balancing the management of multiple medical problems [8].

Proper understanding of the morbidity pattern among elderly and the factors influencing the health-seeking behaviors of elderly is very essential so that the emerging situation in our country can be properly addressed with strengthening of geriatric health-care services and service delivery according to the needs with mitigation of the existing lacunae [9].

Clausen., *et al.* [10] found an average of 5.2 health problems per elderly person living in the Mmankodi village, Botswana. Other characteristics of the morbidity pattern amongst the elderly are the presence of co-morbidities, non-specific presentation of diseases, impaired drug metabolism and deranged social factors. Ogunniyi., *et al.* [11] found that amongst the Idikan community in Ibadan, 59.4% of the elderly population studied had poor or reduced health. The main health problems were hypertension (29.0%), visual impairment (12.1%), cataracts (8.1%), osteoarthritis (6.7%) and neurological problems (5.2%).

Assessment of the morbidity profile will help in the application of interventions, to improve the health status and the quality of life of the elderly. Yet there is little or no baseline information on the prevalence of chronic disease in this population.

Diseases

Indeed, aging is the strongest risk factor for many chronic diseases. Perhaps this is because aging brings with it the chronic dysregulation of multiple organ systems. When a threshold of impairment is reached, such breakdown in regulation among several organs and tissues becomes evident to clinicians [12].

A rise in prevalence of chronic diseases, including heart disease, arthritis, and diabetes, was recorded in elderly people between the 1980s and 1990s [13]. Increases in pain and psychological distress, general fatigue, dizziness, leg ulcers, heart problems, hypertension and musculoskeletal pain, and worsening lung function have been reported for the elderly population in Sweden between 1991 and 2002.

Reports suggest a general increase in multiple symptoms, have been noted for some diseases-e.g. prevalence of cardiac disease, asthma, osteoarthritis, depression based on family doctors' registers, and lower-back complaints [14,15].

Thyroid disorders: As age advances, the thyroid gland undergo progressive fibrosis and atrophy, leading to reduction in thyroid volume, making it difficult to palpate. Prevalence of autoantibodies increases with age, reaching up to 20% in women over the age of 60 years, and may be partly responsible for the anatomic changes in the thyroid gland [16,17]. A clear age-dependent decline in serum TSH and T3 occurs with age, whereas serum-free T4 remains unchanged. There is a decline in serum thyroid-binding globulins with age, making free thyroid hormone estimation necessary. While interpreting thyroid function tests, the effects of drugs like amiodarone and effects of nonthyroidal illness on thyroid function should be kept in mind. Aggressive management of hyperthyroidism and watchful management of hypothyroidism is desirable in the elderly [18].

Obesity: Obesity is a widely discussed risk factor that threatens improvements in health. It has been increasing in almost all populations, with an estimated 3-8% per year average rise in people aged 65 years or older during the 1990s [19,20]. Aging is accompanied by alterations in body composition. Fat free mass composed mostly of skeletal muscle declines by 40% between ages 20 and 70 years. Following age 70, both fat free mass and fat mass decrease together. With aging, there is also a redistribution of fat mass mainly in the visceral component, but fat deposits are also observed in skeletal muscle and liver. The balance between energy intake and energy expenditure determines body fat mass [21].

Obesity is related to various poor health outcomes, including raised risk of diabetes, arthritis, and stroke. The number of diabetes cases, even if prevalence of obesity remains stable until 2030, is estimated to more than double worldwide because of population ageing, with the largest rise in people aged 65 years and older [22].

Frailty: Frailty is a state of global deficiency of physiological reserves and functional dysregulation involving multiple organ systems, resulting in poor homeostasis and increased vulnerability when faced with stressors. With advancing age, the risk of frailty increases, but not all elderly people become frail [23]. Frailty is a state of increased vulnerability to poor resolution of homeostasis following a stress, which increases the risk of adverse outcomes including falls, delirium and disability [24]. Twenty-one community based cohort studies involving 61,500 older people were identified. The operational definitions for frailty and the inclusion/exclusion criteria varied between the studies, which largely explained the considerable variation in reported frailty prevalence rates of 4.0 to 59.1%. When the reported rates were restricted to the studies that used the phenotype model, the weighted average frailty prevalence rate was 9.9% [25].

Osteoporosis: The general definition of osteopenia established by the World Health Organization (WHO) is a bone mineral density (BMD) level that is 1.0 - 2.5 standard deviations (SD) below the mean, and osteoporosis is defined as a BMD level ≥ 2.5 SD below the mean [26]. Osteoporosis is asymptomatic until a fracture occurs and, therefore, may not receive the clinical attention that other chronic diseases are likely to command. Although some improvements have occurred in the quality of osteoporosis care, the disease remains largely underdiagnosed and undertreated. A recent US study reported that the proportion of individuals aged ≥ 65 years who had been assessed for BMD at any time over a 7-year period was just 31% for Caucasian women, 15% for African-American women and $< 5\%$ for men. The elderly population accounts for most of the burden, with 70% of all fractures sustained by those aged at least 65 years [27].

Urinary tract infection and incontinence: Urinary tract infection and asymptomatic bacteriuria are common in older adults. Unlike in younger adults, distinguishing symptomatic urinary tract infection from asymptomatic bacteriuria is problematic, as older adults, particularly those living in long-term care facilities, are less likely to present with localized genitourinary symptoms [28]. Estrogen deficiency may contribute to bacteriuria in postmenopausal women. Estrogen stimulates the proliferation of lactobacillus on the vaginal epithelium, reduces pH, and limits vaginal colonization with Enterobacteriaceae, which are the main pathogens of the urinary tract [29].

Diabetes mellitus: Diabetes rates have been increasing as populations age and become more overweight. The prevalence of diabetes among American older adults may increase more than 400% by 2050 [30]. Seniors suffering from diabetes are more prone to develop chronic micro- and macrovascular complications as well as hypoglycemia and frailty syndrome. Planning diagnosis and treatment in the elderly, not only satisfactory glycemic control must be taken into consideration, but also an overall evaluation of the patient's state [31]. Diabetes is also associated with peripheral arterial disease and peripheral neuropathy, contributing to diabetic foot ulcers and amputations. Diabetic foot ulcers occur in 6% of diabetic patients annually and amputations in about 0.5%. Management approaches in diabetes should be individualized. Sulfonylureas and insulin carry a substantial risk of hypoglycemia and use should be weighed carefully in vulnerable older adults [30].

Physical function: Walking speed declines with normal aging but will decline additionally due to disease. Walking speed measurements can be used to predict future community ambulation, falls, disability, and risk of mortality. Mobility disability is associated with social isolation, falls, and depression. One-third of people over age 85 with a disability live alone. Falls are a major cause of morbidity and disability among older adults. 30 - 40% of adults over age 70 fall each year and rates are particularly high for older adults in long-term care facilities. Falls account for more than half of injuries among older adults. Disability rates are relatively high among adults over age 85. Rates of disability in activities like dressing and bathing and disability in instrumental activities of daily living such as cooking, all rise with age over 80 [32-35].

Psychological and cognitive: Mild short-term memory loss, word-finding difficulty, and slower processing speed are normal parts of aging that are often noticeable by age 85. Not all brain functions decline with age. Wisdom and knowledge are known to increase with normal aging, contributing to the appropriate respect afforded to community elders. Empathy and altruism also may increase with age. Rates of dementia increase with age [36].

Death rates from Alzheimer's disease have been rising while death rates for cardiovascular disease have been falling. Worldwide dementia prevalence may rise from 47 million in 2015 to 131 million in 2050. Many older adults with dementia have unmet needs and may be living or driving unsafely. People with dementia need opportunities for cognitive stimulation, caregiver support and possibly assistive technologies to improve safety and independence [37].

Depression is not a normal consequence of aging. Major depression is common throughout adulthood but incidence rates drop after age 60 and then rise again after age 80. Depression prevalence for adults over age 85 is double the rate seen at age 70 - 74 [38].

Consequences of mortality, disease, and disability

Population ageing poses severe challenges for the traditional social welfare state. An often-used indicator is the old-age dependency ratio, which divides the number of people at retirement ages (> 65 years) by the number of people at working ages (15 - 64 years) [39]. Trends in disability might also show underlying trends in other domains. The rising use of assistive technology and improvements in housing standards, public transport, accessibility of buildings, changes in social policies, shifting gender roles, and the social perception of disability also might have contributed to loosening of the link between disease and functional limitation or disability [40].

For people aged older than 85 years, the situation is less clear. Data are sparse and widespread concern exists that exceptional longevity has grim results both for individuals and for societies [41].

Although patients with multiple chronic conditions are becoming more and more the "norm" in general and geriatric medicine, most studies in this field are theoretical and speculative. Not surprisingly, research on effective management strategies and interventions to improve outcomes in older patients affected by complex multi-morbidity also remains limited [42].

Finally, increasing levels of educational attainment and income in elderly people, improved living and workplace conditions, reduced poverty, changes in marital status towards a rising proportion of couples in elderly people and improvements in early childhood conditions might have contributed to the fall in disability [43].

Conclusion

Awareness of age-related physiological changes, such as reduced acuity of vision and hearing, slow reaction time, and impaired balance, will prepare patients and caregivers to manage risks, make informed decisions, and perhaps prevent falls and medication adverse effects. Elderly need help and support of the medical fraternity. Geriatric assessment should be done regularly. Among elderly oldest old, female elderly and widowed are the vulnerable group that need more attention.

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