

Clinical Pharmacology and the Risks of Polypharmacy in the Geriatric Patient



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KEYWORDS

• Clinical pharmacology • Polypharmacy risk • Geriatric patient

KEY POINTS

- The elderly population is increasing globally in proportion as well as lifespan.
- Despite the fact that normal aging leads to physiologic changes, these patients encounter different threats, most of which are susceptible to medical interventions.
- Widespread use of prescription drugs in this frail group of patients is a hazard for the individual and collective life.
- Many of these threats are preventable.
- The judicious use of early management strategies and interventions is recommended.

INTRODUCTION

Impact of Aging Population

The World Health Organization estimates that worldwide, the proportion of older people in the total population is increasing at more than 3 times the overall population growth rate, and before 2020, the population of people age 65 and older will outnumber children under age 5. Americans are living longer and healthier lives. According to the Centers for Disease Control and Prevention (CDC) for the United States the Healthy Life Expectancy (HALE) at birth on 2015 was 69.1 years for both sexes, with an increase of about 2 years since 2000 (67.2 years). Using maximum-reported age-at-death data, the Albert Einstein School of Medicine researchers put the average maximum human life span at 115 years.¹

The normal aging process

The normal aging process is characterized by a progression of physiologic changes affecting the body throughout the life cycle, and is more evident in the later years.

Disclosure Statement: The author has nothing to disclose.

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Phys Med Rehabil Clin N Am 28 (2017) 739–746

<http://dx.doi.org/10.1016/j.pmr.2017.06.007>

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Every older person ages at his or her own physiologic or organic pace, in his or her unique circumstance based on his or her changing history.

During this period throughout the life cycle, the older adult encounters different threats, most of them susceptible to medical interventions, either prevention or management. One example of this is related with smoking. A study published in 2012 by the CDC about mortality drivers of trends in the older population found that the reduction of smoking at a younger age is expected to improve survivorship for these cohorts when they reach the older ages (population aged 64–83 years in 2050).²

Geriatric Syndromes

Despite those projections and preventive interventions, many older adults develop what is known as geriatric syndromes, which are problems that usually have more than 1 cause and involve many parts of the body, resulting in reduced quality of life and quantitative reduction in age.

In the older adult, geriatrics syndrome is a poorly defined concept that comprises clinical conditions and problems in different organs and parts of the body that cannot be classified as specific diseases. Many of these problems include elder frailty, falls, urinary incontinence, dizziness, syncope, and cognitive impairment.

Frailty syndrome

Frailty syndrome require as least 3 of the following 5 characteristics:

- Unintentional weight loss, as evidenced by a loss of at least 10 pounds or greater than 5% of body weight in the prior year; this occurs in 15% to 20% of older adults and is associated with increased morbidity and mortality
- Muscle weakness, as measured by reduced grip strength in the lowest 20% at baseline, adjusted for gender and body mass index (BMI)
- Physical slowness, based on measured time to walk a distance of 15 feet, at usual pace
- Poor endurance, as indicated by self-reported exhaustion
- Low physical activity, as scored using a standardized assessment questionnaire

Sleep problems

Sleep problems have different expression and high prevalence in the older adult. In the Well-being Singapore Elderly Study, a cross-sectional, epidemiologic survey conducted among Singapore residents aged 60 years and above ($n = 2565$), the older adults reported at least 1 sleep problem, with the overall prevalence of 13.7% ($n = 341$).³

In this study, the sleep problems reported consisted of sleep interruption at night, having difficulty falling asleep, and early awakening. The patient conditions were characterized by chronic physical conditions, depression, and low physical activity.

Sleep problems can affect quality of life and can contribute to falls, injuries, and other health problems. Having trouble sleeping at night or feeling sleepy during the day may be indicative of sleep problems.

Bladder control problems

Bladder control problems, or urinary incontinence, in older persons, is highly prevalent, increasing in older patients as they progress in years, and is reported more by woman. Bladder incontinence may be caused by conditions such as age-related changes in the lower urinary tract, urinary tract infection, and conditions not directly related to the genitourinary system, such as diabetes, cancer, stroke, cognitive impairment, and mobility impairment. Urinary incontinence also can lead to problems such as falls, depression, and isolation.

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