Preventive Geriatric Medicine: Reality or fiction?

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The primary aim of care for the elderly is "to help old people remain as independent as possible for as long as possible, and to offer them as much control over their lives as possible" [1]. To achieve this goal, preventive activities must relate to the pathological processes and the normal frailties of old age, as well as to the social and physical environment that enhances their effect.

Classical approaches to prevention must be modified for patients between the ages of 70 and 80. Opportunities for primary prevention are scarce, and the distinctions between secondary prevention (early diagnosis to stop the progress of disease) and tertiary prevention (adequate treatment of established disease to diminish disability) are obscure. Delay of death, limitation of disability, and maintenance of well being are among the desired results of early intervention. The WHO Scientific Group [1], in a search for a universal endpoint for epidemiological studies, proposed the *maintenance of autonomy* as the basic requirement of the elderly. It follows that preventing the loss of autonomy should be a major objective of intervention programs for this age group. More specific objectives have been described in the literature, ranging from the prevention of influenza to delay in admission to nursing homes. The vast majority of these objectives, however, can only be achieved by implementing multiple intervention strategies. Many of these require social support, a change in public attitudes, and manipulation of the environment, in addition to activities that target the individuals directly. This is the holistic approach to prevention that is embodied in the new "health promotion" ideology. For most elderly individuals, the objective is not prevention of a specific disease (it is often too late for that), but rather prevention of the progression of disease to disability, handicap, or death. Quality of life in the later years is becoming ever more important for individuals, their families, and society. Thus the question that must be addressed is: what strategy should be employed to maintain autonomy as long as possible in the presence of disease? [2].

This paper examines selected issues for which various preventive strategies have been advocated, and distinguishes the notion of high risk groups among the elderly in the community. These preventive strategies can be categorized into five general groups:

- *Problems that can be addressed using traditional prevention approaches*. These are definable diseases or conditions that can be managed successfully to prevent further damage, such as hypertension and glaucoma.
- *Behavioral patterns that could lead to beneficial or adverse effects on health status*. These health behaviors are risk factors rather than diseases or impairments. Evidence as to their importance, or the reversibility of their effects in the elderly, is sometimes sketchy or contradictory. These behavioral patterns include smoking, diet modification, exercise, weight control, participation in social activity, and stress reduction.
- *Problems necessitating attention from professional health care providers*. Physicians see most elderly persons regularly and have the opportunities to identify conditions that could cause disability. More active assessment and intervention on the part of physicians could potentially prevent dysfunction (a form of secondary prevention). Such conditions include vision and hearing impairment, dental problems, foot pathology, depression, alcohol abuse, and urinary incontinence.
- *Iatrogenic problems*. These are impairments, disabilities and handicaps that stem from healthcare itself. Paramount among these are adverse drug reactions or drug side effects.
- *Environmental hazards*. These include poor lighting, frayed carpets, lack of hand holds, and accidents. Abuse and neglect of elderly persons is also included in this category [3,4].

The clinical presentation of disease in the elderly is unique. Lack of awareness of these special characteristics can cause irreversible damage, so knowledge of these processes and their prevention should be germane to geriatric practice. An understanding of the clinical manifestations of disease in the elderly is

based on the interacting concepts of biological change, multiple pathology, and social factors [5–7].

The biological changes of aging affect every cell, organ and body system and their ability to function. Multiple pathologies in the elderly are characterized by the presence of several diseases in one person at the same time. Studies have shown that people above the age of 65 have three to six diseases, on the average [2]. In addition to the effect of biological and pathological conditions, social factors, such as loneliness, bereavement, retirement, and poverty, play a major role in determining the health status of the elderly. The clinical manifestations that result are often completely different from the symptomatology of similar diseases in younger patients. These multiple interacting processes can lead to the loss of ability to perform activities of daily living independently.

Not all diseases or disabilities of the elderly are identified by physicians. One study showed that older adults attribute their functional decrements to "old age" [8] and therefore do not report them to the physician at all. Conditions that are generally recognized are related mainly to the cardiovascular, respiratory and central nervous systems. In contrast, there is a group of disabilities of which doctors are less aware, especially those associated with disease of the joints, feet and urinary tract, and with mental illness (especially dementia). Yet, these largely unrecognized disabilities are of great significance for the affected individual. Locomotor disabilities are painful and progressive and tend to restrict mobility. Hence, they may readily lead to reduced social activity, difficulty in shopping, and the danger of social isolation and loneliness with eventual apathy, depression and the risk of malnutrition.

Falls among the elderly are a good example of these interacting processes [9]: biological changes due to aging that affect the autonomic system include postural hypotension, disordered regulation of body temperature, dysfunction of gastrointestinal motility, and dysfunction of bladder contraction. Other common medical conditions such as diabetes, Parkinson's disease and osteoarthritis easily lead to falls and fractures. Drugs commonly used that can add to the risk of falling include diuretics or laxatives, beta-blockers, anti-depressants and sedatives. Other causes of falls are eye pathology (cataracts, glaucoma), and common social and environmental problems such as excessive or inadequate furniture, frayed carpets and inadequate lighting.

In proper geriatric practice, the assessment of functional loss and the aim of maintaining health – not just the treatment of disease – are emphasized. Identifying people in the community who are at high risk of losing their ability to perform activities of daily living (loss of independence and autonomy) should be a top priority. In this context the high risk elderly that should be targeted are [10]:

- Those who live alone: they are prone to loneliness, apathy and self-neglect.
- Those who were recently bereaved: they are prone to depression, a first step in the process of functional deterioration.
- Those with significant locomotor difficulties: they are in continuous danger of falling, being injured and suffering subsequent additional physical deterioration.
- Those with evidence of mental impairment: early mental impairment is not easily diagnosed and can only be identified by appropriate screening.
- Those who were recently discharged from the hospital.

Other high risk groups could be included in this list, such as the elderly living below the poverty level, those above the age of 80, and the homebound and bedridden. The identification and treatment of these groups requires different strategies, particularly screening and case-finding [10,11].

With a holistic approach to the care of the elderly, preventive activities cannot be distinguished from the traditional practice of medicine. Thus, preventive and curative care are intertwined in this age group. To achieve this goal efficiently, different models of geriatric services have been developed [12,13]. These models are based on the principles of a multidisciplinary team approach (doctors, nurses, physiotherapists, occupational therapists, social workers, psychologists, podiatrists, dentists, dietitians, and others), continuous care including acute care and rehabilitation, community services and long-term care. The coordination of well-trained professionals in these different service frameworks, both medical and social, should be implemented on a broad scale. In Israel, generally, geriatric physicians work in hospitals and do not take an active part in community medicine, neither in direct care nor as consultants.

Recommended medical activities for which direct intervention and follow-up are warranted in the elderly include [14–17]:

- Assessment of nutrition, physical activity and drug use (including over-the-counter medications)
- Avoidance and discontinuation of any unnecessary drugs
- Assessment of ability to perform activities of daily living
- Active check for sight and hearing accuracy, appropriate teeth and dentures
- Measurement of height, weight and body mass index
- Annual measurement of blood pressure (in non-hypertensive patients)
- Active search for signs of depression, mental deterioration, physical and emotional abuse and neglect
- Search for a history of falls, and advise specifically about fall prevention and exercise, driving, alcohol and cigarettes
- Advise about heating in the winter
- Search for urinary incontinence
- Mammography and colonoscopy are indicated for high risk persons, with annual check-up of occult blood in stool until age 80
- Vaccines: influenza vaccine yearly, diphtheria-tetanus vaccine every 10 years, and pneumovax every 6 years.

Other conditions for which periodic assessment may be warranted [17] but still need further research include: anemia, glaucoma, hyperglycemia, prostatic and gynecological neoplasms, renal im-

pairment and tuberculosis. Conditions that do not presently warrant periodic assessment in the asymptomatic elderly include dementia, hyperlipidemia, hypothyroidism, lung cancer and osteoporosis.

In summary, classical approaches to prevention in the elderly aged 70–80 must be modified. Opportunities for primary prevention are scarce and the distinction between secondary and tertiary prevention obscured. The WHO has proposed the maintenance of autonomy as the basic requirement of the elderly, and the prevention of its loss as the major objective of intervention programs. Preventive strategies and recommended preventive tasks can be learned by primary care medical teams, including primary care physicians and nurses. Special attention should be paid to the elderly in the community who are at high risk of losing their functional independence. The identification and treatment of these groups should be based on models using the multidisciplinary team approach, and continuous care. Coordinating the efforts of well-trained professionals to provide adequate and relevant services will help in preventing the deterioration that threatens the elderly, and in restoring their well being and self-confidence.

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