



EDITORIAL

Cardiology and Geriatrics in daily practice: a challenge for the future



Cardiología y Geriatría en la práctica diaria: un reto hacia el futuro

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“What a shame!” the prince exclaimed, “that human beings, drunk with the pride of youth, don’t see old age. Let us return home quickly! What good are games and joys if I am the dwelling of future old age.”

(Prince Siddhartha Buddha)¹

In mankind’s history, immortality and eternal youth have always been a myth. Stories such as those of Methuselah or Dorian Gray, or marvelous places such as Shangri-La where people didn’t die and lived for all eternity, will always be the topic of books and movies, sure to be successes. This phenomenon exists in all cultures and religions. We will always fear aging and death.

Aging is a universal, progressive and irreversible phenomenon. Medical and technological advances have led to a life expectancy of over 80 years, and have made centenarians a more common finding in our population.

The geriatric population may be divided into the old (75/84 years) and the very old (85 and over). In Colombia, as a developing country, a geriatric patient is considered to be one over the age of 60, a young adult up to 60 years of age, and an older adult after this age. However, the group of those over 80 is currently the fastest growing group,

proportionally. The American Geriatric Society (AGS) classification also takes into account the oldest and ancient (centenarians).

However, these important advances also have consequences, among which are greater social and economic costs. If the retirement age today is, on average, 62 years, it means we will spend almost 20% of the rest of our lives not being economically productive; and, if we don’t have a life project for the future, it is an “eternal”² time, during which, and due to changes related to aging, we will have a greater probability of suffering chronic and high cost diseases.

According to the 2016 National aging survey in Colombia, those over 60 years of age make up 11% of our population, and, of these, 60% work because they need the money, 58% do so through informal labor, and only 29% receive a pension.

The population pyramid is inverting, and in light of the lower birth rate and greater senescence, the proportion of older people will be ever greater. The first cause of morbidity and mortality today is cardiovascular disease.

Age as a risk factor beginning at 45 is explained because the changes related to it, such as loss of vascular elastin, endothelial dysfunction, and elastocalcinosis, (among many other normal aging phenomena which increase vascular resistance, afterload, and, thus, rigidity in vessels and vascular structures, heart valves and conduction pathways), explain the high prevalence of systolic arterial hypertension,

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AV blocks, arrhythmias, and arteriosclerotic disease, and are, in addition, the evidence of cardiovascular etiology as the first cause of mortality in this population today³.

Besides age as a risk factor, we accumulate unhealthy activities beginning in childhood, such as sedentarism, poor use of free time, and bad eating habits, which are very influenced by the media and a culture of easy consumption, fast foods, an excess of technology such as video games, the use of remote controls for everything, and the use of elevators for lower floors, among the many gadgets offered by modernity.

Furthermore, social variables and the role of women, which changed for their good, also have an impact on the home as the main nucleus of good habits. Children receive an "integral" education in schools, they eat (healthy?) and carry out recreational and sports activities (?) there; they learn to be comfortable, and for everything to be fast.

Obesity linked to poor habits beginning in childhood (negative epigenetics), which is certainly due to all these changes, already began a cascade of pathophysiological events which will be expressed in young adulthood.

It is well known that the persistent low-grade inflammation associated with obesity produces accelerated changes in systemic vasculature, but these changes are not measurable using routine tests (interleukins, TNF, hs-CRP, metalloproteinases). Everything is asymptomatic at an early age. Hypertension, dyslipidemia, or diabetes are not yet detected, and, even less, atherosclerosis. They are "healthy" children⁴.

In a young adult (under 40 and asymptomatic), the artery calcium score by doppler may possibly show subclinical arterial damage^{5,6}. Unfortunately, primary prevention evaluations are not performed in the earliest ages because the classical education given to the population consists in "going to the doctor when I am sick", and medical education is based on visible diseases and invasive interventions: secondary prevention.

Thus, the situation leads to us finding older people today with undiagnosed chronic vascular inflammation, and who, although they have not suffered final cardiovascular events (acute myocardial infarction, cerebrovascular disease, occlusive peripheral arterial disease, chronic kidney disease), currently make up a significant percentage of our society: the "big bellies"; in other words sarcopenic obesity due to aging, sedentarism, and poor nutritional habits.

This chubby and "asymptomatic" character is a leading candidate for all the final cardiovascular events and all the pharmacologic and invasive interventions we have today in our management guidelines.

It is important to keep in mind that persistent low-grade vascular inflammation due to sarcopenic obesity also produces changes in cerebral subcortical vessels which explain medium-term mild cognitive deterioration, impaired walking and depression, which in turn express the greater vulnerability of the elderly. One of the greatest fears in aging is memory loss and being dependent.

When all the foregoing is utopic, and neither optimal primary prevention nor adequate control of risk factors for a healthy and successful aging were achieved, we are faced, as we are today, with a vulnerable elderly patient in the emergency room, intensive care unit, hospital room, or outpatient department.

The clinical challenges when assessing an elderly patient are great, and an important recommendation is to perform a comprehensive geriatric assessment, which is a way of evaluating the social and economic support, functional capacity and independence in activities of daily living, emotional and cognitive state, as well as diagnosed or undiagnosed co-morbidities, which will influence the short-term prognosis. A patient with subclinical dementia, atypical elderly depression, who is dependent on others for basic activities, and who has impaired kidney function, even with creatinine within normal limits (age-related nephrosclerosis), should be detected previously, and prior to invasive procedures, in order to determine appropriate therapeutic proposal and goals.

It is important to know the pharmacokinetics when beginning or modifying pharmacologic treatment. Absorption, bioavailability, and protein binding, as well as the volume of distribution, vary throughout the aging process. Polypharmacy is very prevalent in this group. An elderly patient with coronary disease and heart failure already faces receiving a minimum of up to five medications, which increases the risk of bleeding, arterial hypotension, urinary incontinence, fluid-electrolyte disorders, and the risk of falls. When using anticoagulants, it is imperative to keep drug interactions in mind. In general, in addition to medications for other chronic pathologies, (COPD, rheumatoid arthritis, diabetes), which should be treated individually, we need to take into account over-the-counter medications and self-medication, which increase the risk of delirium.

Adverse drug events in elderly individuals receiving more than five medications are greater than 50%, and represent a significant cause of hospital admission and stays.

Fragility is one of the great geriatric syndromes, and essentially increases the risk of morbidity and mortality due to all causes in patients over the age of 65. It is characterized by a loss of cellular, tissue and physiological reserves, which increases the risk of complications in the presence of any stressor.

The criteria of fragility are easily detected and difficult to interpret. It is basically an alert to the most vulnerable patient⁷.

Fried's criteria make a diagnosis of fragility with three out of five of these:

- Unintentional weight loss.
- A feeling of generalized fatigue.
- Weakness (measured by grip strength).
- Slowed walking (based on a distance of 4.6 m).
- Low level of physical activity (less than 400 kcal/week).

A fragile elderly person who has not been previously diagnosed, and who is hospitalized for any reason, has a greater risk of complications and death due to this fragile genotype, than that due to the inherent risks of the baseline pathologies of any etiology.

Recently, consensus articles have been published regarding the fragile elderly person in different pathologies^{7,8}.

The guidelines for the diagnosis and treatment of arterial hypertension in the very old are conflicting⁹, and recent studies now at least involve the criterion of fragility.

Likewise, there is no consensus for the treatment of acute coronary syndrome in the fragile elderly; the accepted argument is to individualize.

In the future, it is expected that encountering active, vital, and independent nonagenarians and centenarians will be more and more frequent. In this group, without a doubt, it is necessary to offer all the medical, pharmaceutical and interventionist advances, obviously trying to avoid injury and optimizing therapeutic strategies.

An adequate assessment of the elderly patient which includes all these recommendations will avoid complications, shorten hospital stays, and improve the quality of life of these patients and their families. The social value of the elderly individual in today's society, and in his or her nuclear family, is very high.

“A beautiful old age is generally the reward of a beautiful life.” (Pythagoras)

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