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The geriatric management of frailty as paradigm of "The end of the disease era"

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ABSTRACT

The sustainability of healthcare systems worldwide is threatened by the absolute and relative increase in the number of older persons. The traditional models of care (largely based on a disease-centered approach) are inadequate for a clinical world dominated by older individuals with multiple (chronic) comorbidities and mutually interacting syndromes. There is the need to shift the center of the medical intervention from the disease to the biological age of the individual. Thus, multiple medical specialties have started looking with some interest at concepts of geriatric medicine in order to better face the increased complexity (due to age-related conditions) of their average patient. In this scenario, special interest has been given to frailty, a condition characterized by the reduction of the individual's homeostatic reserves and increased vulnerability to stressors. Frailty may indeed represent the fulcrum to lever for reshaping the healthcare systems in order to make them more responsive to new clinical needs. However, the dissemination of the frailty concept across medical specialties requires a parallel and careful consideration around the currently undervalued role of geriatricians in our daily practice.

1. Inadequacy of traditional healthcare models

The absolute and relative number of older persons is increasing worldwide [1]. This phenomenon implies the urgent need to revise the structures and the methodologies of current healthcare systems, which were originally designed for younger patients with single acute diseases. The traditional paradigm of stand-alone disease medicine has become out-of-date in a clinical world dominated by older individuals characterized by multi-morbidity and mutually interacting syndromes.

Already in 2004, Tinetti and Fried [2] published a landmark though controversial article presenting "The end of the disease era". In that paper, authors stated:

> "…The time has come to abandon disease as the primary focus of medical care. […] The changed spectrum of health conditions, the complex interplay of biological and non-biological factors, the aging population, and the inter-individual variability in health priorities render medical care that is centered primarily on the diagnosis and treatment of individual diseases at best out-of-date and at worst harmful…"

These statements directly imply the necessity of a different approach to the older person's needs and resources. The article was fiercely criticized in the belief it could pave the way to a risky adventure in a landscape with no rules where subjectivity might dangerously become predominant. In fact, it was argued that medicine could not be emptied of the disease concept without substantially affecting our capacity of understanding pathophysiological mechanisms and developing innovative interventions [3]. These concerns were and still are as legitimate as valid. Nevertheless, moving the center of the medical intervention from the individual's disease to his/her overall functioning represents the only possibility we have for correctly weighting the clinically complex cases of advanced age. In other words, it is the only practical and effective solution for escaping from the long lasting evidence-based medicine issue.

Our belief is especially motivated by the fact that a disease-centered model of care frequently leads to two opposite scenarios when applied to the older patient:

1) The risk of polypharmacy and over-medicalization (because multiple subclinical and clinical abnormalities are simultaneously detected and treated), or

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2) The under- or inappropriate treatment of clinical conditions (due to ageism, poor knowledge of the patient, or lack of evidence-based algorithms applicable to the heterogeneous geriatric population) [4–7].

In either case, the quality of life of the individual as well as his/her clinical outcomes might be substantially and negatively affected. In this scenario, geriatrics might indeed be considered the medical discipline in which the highest degree of common sense is required for coping with the biological and clinical complexity of the aged organism and the (consequent) lack of well-established medical standards. After all, the impact of multi-morbidity on the health status of older persons is significantly greater than the sum of the individual effects expected from the single conditions, as also explained in the recent *World Report on Ageing and Health* released by the World Health Organization [8].

2. Geriatric practice in different medical specialties

Nowadays, the assessment and treatment of age-related conditions is no longer a unique challenge for geriatricians. A wide spectrum of medical specialties is facing the consequences of global aging in the routine clinical practice. The older age of their patients has forced many specialties at reconsidering their traditional models of care because unable to satisfy the emerging clinical needs. In this context, the success of care models involving the geriatrician in the co-management of older patients in different medical specialties (e.g., orthopedics [9], oncology [10], emergency care [11,12]) should be acknowledged. The spreading diffusion of some geriatric concepts in other disciplines is therefore not surprising.

Frailty (i.e., a geriatric condition characterized by the reduction of the individual's homeostatic reserves, determining an increased vulnerability to endogenous and exogenous stressors [13]) represents a paradigmatic example of the geriatric contamination of other medical disciplines. Today, the term “frailty” is no longer confined within the borders of the geriatrics and gerontology world. From cardiology [14] to infectious disease medicine [15], from oncology [16] to anesthesiology [17], frailty has become a condition of wide interest both in clinical and research settings. Some healthcare systems have even implemented special economical bonuses to award those clinical services that follow the principles of the comprehensive geriatric assessment for the management of frail elders. The spreading recognition of frailty in different fields makes it a promising candidate for potentially serving as fulcrum on which to reshape our healthcare systems. That is, the geriatric condition of frailty may represent the turning point for modifying clinical decisional algorithms surpassing the obsolete and unreliable age criterion.

The diffusion of such sparks of geriatric culture in other medical specialties is undoubtedly a major accomplishment for geriatricians, but there is the consistent risk that it might turn out to be a victory with no winners. Geriatricians should surely be proud that other specialties are finally recognizing the benefits of the adapted and multidimensional approach when targeting frail older persons. It is gratifying to see other disciplines modifying their practices to better take into account the needs and characteristics of the geriatric patient. It is not a mere matter of *ego*, but the evidence-based awareness that the care of older patients requires a more systematic and individual-tailored approach [18–20].

3. The underestimated value of the geriatrician

In spite of the recent achievements of geriatric medicine, it is evident that its major concepts are too often misinterpreted and misused outside of its field [21]. In the literature, there is a worrying tendency to consider the geriatrician a specialist in scales and questionnaires. The assessment instruments are repeatedly confused with/considered equivalent to the practice of the geriatric specialty. There is the alarming idea that the comprehensive geriatric assessment may exist independent of a geriatric clinical competence/sense driving its interpretation. It often seems as everyone capable of filling a checklist or completing a standardized set of questions automatically becomes able to manage a complex older patient like a geriatrician! Or that the numeric result of a test may be sufficient to improve the clinical care offered to the older person or his/her outcomes.

The comprehensive geriatric assessment means nothing if (1) the right instruments are not used, and (2) its outputs are not combined with the geriatrician's capacity to design a patient-tailored intervention. Most of the instruments usually applied in a standard comprehensive geriatric assessment are screening and not diagnostic tools. They often present large margins of error and are characterized by being focused on single specific aspects of the health status (e.g., cognition, nutrition, physical function). Moreover, two instruments measuring the same domain may provide completely different results depending on the patient's characteristics and setting, and the scope of the evaluation. The real meaning of these assessment tools exclusively resides in the sensibility of the geriatrician at considering them small pieces of the overall, complex picture. Taken separately, they might even be misleading.

Administering and scoring the Activities of Daily Living scale, the Instrumental Activities of Daily Living Scale, the Mini Mental State Examination, etc. do not make us (and anyone else) experts in geriatric care. And this, without taking into account that geriatricians have been playing a major role in developing more advanced and user-friendly clinical tools after having directly experienced the limitations of these old-fashioned, first-generation instruments [22]. The geriatrician is called at more properly using available and state-of-the-art devices in order to support and standardize the clinical approach to frail older patients [23–25]. The internist background of geriatricians combined with their function-oriented approach and knowledge about age-related phenomena will then allow the interpretation of results and their translation into a beneficial intervention for the older patient.

Furthermore, the geriatrician's clinical activities find their major effectiveness when nested into a specifically designed healthcare system. In fact, key to the provision of health services for older people is the partnership across the whole healthcare professionals and social care workers in a territory [26]. Geriatricians have a vital role and duty to provide care for older people in collaboration with medical professionals (in particular, primary care physicians) as well as non-medical healthcare professionals [27]. Multidisciplinary working also necessitates close liaison with many complementary services such as other branches of internal medicine, surgery, physical medicine and rehabilitation, or psychiatry of old age. Respect for patient's autonomy is at the center of practice, particularly when dealing with interventions such as cardiopulmonary resuscitation, assisted ventilation, or artificial feeding. Geriatricians recognize the importance of involving informal carers in decisions about complex treatments and consider a patient's quality of life and disability-free life expectancy to be pivotal goals of treatment rather than absolute life expectancy.

4. Frailty as paradigmatic target of geriatric care

As mentioned, frailty may represent the fulcrum on which reshaping our healthcare systems as repeatedly requested by public health agencies. At the same time, it might become the tombstone for our specialty if geriatricians will not enforce respect for their background and capacities.

Although every one of us agrees on the theoretical definition of frailty [13], more than 40 different instruments have been developed and validated over the past years to determine the frailty status [28]. The most popular operational definition of frailty (i.e., the frailty phenotype proposed by Fried et al. [29]) is seldom reproduced as originally developed, and most studies use adaptations of it (with consequent

inconsistent findings) [30]. Geriatricians often find themselves sterilely discussing the instruments for measuring a condition of risk (as frailty is) rather than looking at its proper implementation in clinical care. By doing so, it seems we forget that frailty existed in the clinical setting even before the first formal defining algorithms of it were published [31,32]. For sure, rendering objective and measurable a certain condition is crucial for its subsequent implementation in the clinical setting. However, we put too much emphasis on the label without considering that after having flagged a person as frail (even worse pre-frail!), quite nothing is accomplished. If we measure the older person's gait speed or simply ask him/her about self-perceived health, we might get similar risk estimations for negative outcomes [33,34]. Again, the crucial step in the frailty domain is what happens next, probably more than the risk score we may get from one of the multiple tools. Differently from other disciplines, geriatricians already know from their background what to do next. For example, a recent Cochrane systematic review has documented how strongly the beneficial effects of comprehensive geriatric assessment (versus general medical care) are related to the presence of an attending geriatrician in the management of older patients [35]. Moreover, geriatricians seem to provide care to complex frail elders more efficiently, i.e. at lower cost [36].

Several specialties are increasingly using geriatric instruments (for example, physical performance measures like gait speed) for the risk stratification of older persons. However, screening for frailty without having the knowledge necessary for disentangling the complex syndrome is fundamentally useless. If frailty remains a number on paper, it is pointless to measure it. Indeed, studies have shown that adding some frailty markers to the results of the clinical assessment provides only a modest increase in the predictive capacity of negative health-related outcomes [37]. Furthermore, there is the tendency in non-geriatric settings at looking at frailty as a condition for ruling out, for providing a “do not do” message, or (at best) for justifying a lower-than-standard-intensity care. Differently, the detection of frailty becomes of major relevance if it nurtures a clinical process in which the geriatrician is called to interpret the results of a multidimensional assessment, looking for the underlying causes of the risk profile and estimating the available resources in order to develop a person-tailored multidisciplinary plan of intervention [19,38,39].

5. Conclusions

We believe there is an increasing risk of a geriatric medicine done by non-geriatricians. Unfortunately, it is not true that simply seeing older patients means being experts in geriatric practice. Probably, such an ambiguity is closely related to the lack of a formal geriatric training in many countries. Despite the global aging phenomenon, medicine for older persons is too often delegated to specialists lent to geriatrics. Sometimes, this choice is forced by the absence of geriatricians, who are still too few for our aging societies. However, such major weakness of the system often becomes the justification for delegating geriatric medicine to non-geriatricians, leading to an evident distortion/misrepresentation of our specialty. In fact, instead of training more geriatricians (as it should be reasonable given the worldwide aging phenomenon), it is accepted to drag geriatric medicine in different directions according to specific or personal conveniences/opportunities. Paradoxically, the risk of our discipline is to disappear in favor of low-quality hybrids recycling our historical backgrounds into misleading and detrimental mechanisms. As geriatricians, we should be better aware of our background, take advantage of our experiences, and enforce respect for our role.

Geriatric science should play a pivotal role in the reshaping of traditional models of care thanks to its history and tradition going well beyond the recent birth of the term “frailty”. Geriatricians have always devoted their clinical activities to frail older persons, even when this label had not yet been coined. With their background and expertise, geriatricians are the primary resource for facing the present and future challenges of our aging societies.

Learning points

- The sustainability of healthcare systems is threatened by the absolute and relative increase in the number of older persons
- The traditional paradigm of stand-alone disease medicine has become out-of-date in a clinical world dominated by older individuals presenting multiple chronic comorbidities and mutually interacting syndromes
- Several medical specialties have started looking with interest at some geriatric concepts (and frailty is a paradigmatic example) in order to better face the increased complexity of their patients
- The diffusion of geriatric concepts is frequently accompanied by misinterpretations and underestimation of the geriatrician's role
- The comprehensive geriatric assessment is meaningless if conducted in the absence of an integrated care model and without the geriatrician's expertise at managing the complexity of frail elders
- There is an increasing risk of a geriatric medicine done by non-geriatricians, exposing the discipline to the risk of disappearing in favor of low-quality hybrids
- Geriatricians should be better aware of their background, take advantage of their experiences, and enforce respect for their role

Conflict of interest

All authors are geriatricians. The authors state that they have no conflicts of interest.

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