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The Elderly in the Emergency Department

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Abstract

The evaluation, treatment, and prognosis of the elderly hospitalized in an emergency service are different from the adult patient, and it is necessary to know their particularities to provide optimal care.

Keywords: emergency service, geriatric patient, biological aging, fragility

1. Introduction

Aging can be defined as a decline in functional properties at cellular, tissue, and organic levels, with the consequent loss of homeostasis and adaptability to internal and external noxas, increasing vulnerability to disease and death [1].

As a result of the increase in the number of elderly people, their health problems have increased significantly. Parallel to the demographic change that conditioned population aging, the “epidemiological transition” appeared that modified the profile of prevalent diseases, chronic noncommunicable diseases being the core of attention. All these conditions present frequent exacerbations and relapses, making the elderly require repeatedly assessment in an emergency service. However, it is clear that the care models in the emergency services are not adapted to the geriatric patient [2].

The demand in the attention to the emergency services has been growing progressively in the last years, and this increase is more noticeable in the population of older adults. Older people have differential features, in relation to younger age groups, starting from the biological point of view with not only physiological changes related to aging but also functional, psychological, and social changes, all of which lead to a decrease or narrowing of the homeostatic

responses to the different noxas, placing them in a state of greater vulnerability, which has an effect of greater comorbidity, loss of autonomy, disability, sensory alterations, cognitive deterioration, and a social-familiar problematic that can occur simultaneously, determining a special difficulty for their evaluation and treatment and, many times, altering its prognosis adversely [3].

In this way, the concept of biological aging is important, understood as the state of an individual resulting from the wear and tear associated with age plus its conditions of illness, functionality, mental well-being, and social support. This biological aging is very different among the elderly, regardless of their chronological age and condition differences in the functional capacity [4].

In a recent Spanish study, it was established that older patients had a higher priority in the care by severity, had more complementary tests taken, had a longer average stay, had a higher probability of hospital admission and of being exitus, and needed assessment by the social services. In addition, it requires more complex evaluations, more consultations with other specialists, and a higher percentage of readmissions [5]; however, they attend in a justified manner and with a significantly used pattern different from young adults. Therefore, the progressive aging of the population may seriously affect the dynamics and functioning of the hospital emergency services.

In young patients admitted to an emergency department, it has been determined that there are undoubtedly clinical factors related to the acute disease, which decisively influence the outcome. However, this is not so clear in the elderly, and the characteristics that go beyond the severity of the acute disease modify the prognosis. More specifically, these conditions refer to the functional, emotional, and cognitive states, the level of comorbidity, the degree of polypharmacy, and the social support networks. Due to their condition of high vulnerability or fragility, in the elderly patients, the health problems are explained in the multi-causality model, and the resolution of these does not derive from the attention of a single cause, but from a comprehensive identification and treatment of all related factors that affect the prognosis [6].

Hospitalization alone is already a negative factor in the outcome of elderly patients. Survival decreases by the mere fact of being reduced to a hospital bed, immobilized, both in men and women, but above all in the older groups (>80 years) [7]. Even if you take into account that the emergency services are noisy, in constant movement and lack of privacy, which can be disconcerting for the elderly and enhance their deterioration in relation to hearing, vision, attention, and understanding.

In general, the elderly patients have a longer stay in the emergency department, requiring more time for medical assessment and nursing care, and alarmingly they have a higher frequency of readmissions, generating a great assistance pressure on the professionals that attend these services [8].

The lack of knowledge of the elements that affect the prognosis of the elderly patients in the emergency services is still notorious, which results in diagnostic errors and what is more

serious therapeutic errors, affecting adversely the outcome; the aim of this paper is to provide knowledge that leads to the identification of these factors and may lead to earlier and more successful intervention lines.

2. Epidemiology

Recent studies have shown a progressive increase in emergency visits, which is much more noticeable in the elderly population. In fact, some studies mention that up to 25% of all emergency visits correspond to elderly patients. In general, they represent more than 15% of all consultations and almost 50% of all admissions to intensive care units. Therefore, some authors mention that “the emergency units are aging” [9].

In the United States, the Centers for Disease Control and Prevention (CDC) report that between 1993 and 2003, there was an increase in the absolute number of visits to the emergency department, with the group of people over 65 years of age, who had the highest frequency of visits (an increase of 26%). If this trend is maintained, it is expected that the frequency of emergency consultations in the elderly will double from 6.4 million to 11.7 million by 2013 [10]. Elderly patients are four to six times more likely to be admitted to an emergency unit than a non-elderly patient.

3. Conditions that can alter the evolution and prognosis of the elderly in the emergency department

3.1. Physiological response to stress

The organic response to different acutely unbalanced pathologies is altered in some elderly, especially in the fragile ones [11]. Among the most relevant physiological changes associated with age are mentioned:

- Alteration in the homeostasis of intercellular junctions and the production of the second messengers, which causes some adrenergic receptors to be internalized, decreasing the effectiveness of catecholaminergic responses.
- Presbycardia or cardiac aging conditioned by the increase in cardiac stiffness with a decreased diastole capacity and greater dependence on atrial contraction, which results in less tolerance to increased extravascular volume and lower tolerance to tachyarrhythmias.
- The physiological changes of lung aging make it more difficult to adapt to situations that generate hypoxemia. Among them are an increase of the rib cage rigidity, decrease in the forces of elastic retraction of the lung parenchyma, and decline in the strength of the respiratory muscles. All this generates changes in pulmonary dynamics with an increase in residual volume, decrease in tidal volume, and decrease in FEV1 associated with age. The

effectiveness of protective airway reflexes is also altered. The alveoli flatten and the gaseous exchange surface decreases. In general, all these changes produce a decrease in the PO_2 , for which one must be cautious when interpreting the arterial gases in an older adult and apply a formula to correct them by age.

- The most important changes that affect the aged kidney are a reduction in size, decreased renal blood flow, and a drop in the glomerular filtration rate. Therefore, older adults have difficulty managing water loads, either in hypervolemia or in dehydration states, as well as regulating plasma osmolarity.
- Deregulation of the immune system, low-grade inflammation, and alteration of acquired immunity make the responses to infections less effective.
- There is desensitization of the vascular mechanoreceptors with alteration of the vasoconstrictive responses upon hypotension states.
- Endocrine changes with pancreatic aging, islets decrease, and insulin resistance increases, causing an increase in fasting plasma glucose. There is also an alteration in the production of counter-regulatory hormones.

3.2. Characteristics of the disease as it ages

The disease presentation in the elderly makes it difficult to approach it, due to situations such as:

- Multipathology
- Complex medication regime
- Atypical presentation
- Frequent Iatrogenic
- Multiple consultations

3.3. Laboratory tests

Although laboratory tests are an invaluable aid, in the elderly they cannot get altered in the presence of disease or have higher rates of false positives, related to physiological changes [12]. The following are worthy of mention:

- In the elderly the erythrocyte sedimentation rate is not a reliable indicator of the presence of inflammation. C-reactive protein (CRP) is more sensitive, with the disadvantage that it can take up to 12–24 h to rise after a bacterial aggression and maintain its levels even days after healing. Recently, it has been published in a systematic review that PCR accuracy decreases as the patient's age increases. Procalcitonin maintains a good diagnostic capacity in this patient profile, and a value of >0.5 ng/ml is significantly associated with greater mortality at 30 days [13].

- Serum creatinine does not reflect renal function, if one considers that it is a protein of muscular origin and the sarcopenia associated to age.
- It is common to find in the elderly of the community (20%) and institutionalized patients (50%) the presence of asymptomatic bacteriuria, which should not be misinterpreted as a urinary infection and even less should be given an antibiotic treatment.
- The readings of hemoglobin and hematocrit in the elderly are the same as for the adult population. The myth of the so-called anemia of aging is false.
- The same applies for the serum sodium values, being these from 135 to 145 mosm/Lt and being an error to believe that the elderly tolerate hyponatremia better; in fact, studies have shown an increase in cognitive alterations, falls, and acute coronary mortality, with values less than 135 mosm/Lt.

3.4. Pharmacological response

When using drugs in the elderly, it is necessary to know some changes that can alter the responses to medications [14]:

- In general terms, there is no alteration in the absorption of oral medications, and this remains one of the choices.
- There is a decrease in liver size, hepatic blood flow, and liver microsomal enzymes, which alter the metabolism of some drugs.
- The free fraction of drugs that travel bound to albumin or alpha-2-microglobulin, which are variably decreased with age, increase and so does toxicity.
- With aging, there is a greater proportion of body fat and less water and lean mass, which changes the bioavailability of drugs.
- Greater toxicity of some molecules associated with decreased renal function.
- Specific pharmacodynamic alterations for some molecules due to changes in the quantity or sensitivity of receptors at the cellular level.

4. Most frequent pathologies in the elderly at the emergency department

Next, emphasis will be placed on the most frequent pathologies in an emergency department and their differential characteristics in the elderly.

4.1. Hypertension in the emergency room in the geriatric patient

In the past, it was controversial to define the readings for normal blood pressure in the elderly and when to administer pharmacological treatment. Today, it is clear that the normal readings

correspond to those of the adult population and that the benefit of administering pharmacological management is evident, even at very advanced ages. However, the latest studies (SPRINT, PURE) have put confusion regarding the goals. In the emergency department, it is important to differentiate between emergency and hypertensive emergencies, due to the implications in defining the speed and route of treatment.

Key points

- Rule out pseudo-hypertension at very advanced ages.
- During the measurements, the patient must be in a controlled environment and in an appropriate position, with an adequate technique and the minimum possible stress.
- Always evaluate the underlying comorbidities that alter the prognosis of the current decompensation.
- In a hypertensive emergency, the blood pressure readings should not be lowered abruptly, as it generates more morbidity and mortality.
- As an adequate physiological goal in elderly hypertensive patients, a pulse pressure between 50 and 60 mm Hg is recommended.
- In hypertensive emergencies use medication orally. It is a mistake to use the sublingual route because of its unpredictable effects and because the drugs were not designed for this route. In emergencies, use the intravenous way, and transfer the patient to an intermediate or intensive care room.
- In the elderly, no drugs with adrenergic blocking effect such as clonidine or prazosin are the first choice, because of their excessive hypotensive effects and, in the case of clonidine, its sedative and anticholinergic effects.

4.2. Acute coronary syndromes in the elderly

It is estimated that 60–65% of all heart attacks occur in people older than 65 years and 80% of the deaths due to this cause affect this population. They are one of the most frequent causes of emergency consultation, where more mistakes are committed, both in diagnosis and in the therapeutic decision-making.

Key points

- Only 57% of those over 80 have chest pain. In octogenarians, the main presenting symptom is dyspnea. Syncope, dizziness, delirium, and falls are also frequent. This leads to frequent delays in diagnosis and treatment.
- In relation to age, there are more incidences of tachyarrhythmias.
- An elderly person is more likely to show a non-ST-segment elevation myocardial infarct (STEMI) than with an ST-segment elevation myocardial infarct (STEMI), given the phenomenon of ischemic preconditioning.

- NT-proBNP levels are associated with short-term mortality in the elderly population treated in emergency services.
- Long-term mortality and morbidity are increased compared to younger patients, either with medical or intervention management. Heart failure, bleeding, and reinfarction rates are more frequent. However, the benefit of the treatment remains.
- In part, the poor results in the elderly are explained by the decrease in the use of treatments because of toxicity fear. The protocols must be applied strictly and not to discriminate the age. Consider the general state of health, life expectancy, functional status, and cognitive status.
- The intervention strategy has shown greater benefits in the elderly compared with thrombolysis.
- Always provide the patient with cardiac and functional rehabilitation.

4.3. Pulmonary thromboembolism in the elderly

Although it is not clear whether advanced age is an independent risk factor for thromboembolism, elderly patients have a high incidence of risk factors for clot formation. Venous stasis, commonly caused by immobility, has been found to be the most common risk factor.

Key points

- The diagnosis is notoriously difficult at all ages. In 70% of the cases in which the patient dies of a pulmonary embolism, there was no antemortem suspicion of the diagnosis.
- The rule in the elderly is that the pulmonary embolism occurs in a subtle and atypical way. Acute dyspnea, pleuritic chest pain, tachypnea, tachycardia, and hemoptysis are less frequent. Syncope and hemodynamic instability increase in frequency.
- D-dimer decreases its utility with advancing age because the values rarely fall below the negative predictive threshold.
- As aging is related to a decrease of the oxygen partial pressure and an increase in the alveolar-arterial gradient, gasometrical changes can be difficult to be interpreted in the elderly.

4.4. Geriatric patient with cerebrovascular disease in the emergency department

Neurovascular disease is the major cause of disability and death in the elderly. The aging brain is less resistant to physiological stress: the cerebral blood flow gradually decreases with age, the collateral circulation is diminished, the cerebrovascular barrier is less efficient, the cerebral self-regulation is altered, and the neuronal oxidative metabolism decreases. All this makes an ischemic event more pronounced, and the time threshold for effective interventions lowers.

Key points

- Twenty-one percent (21%) of elderly patients with cerebral ischemia have a normal physical examination.
- Always look for common risk factors: atrial fibrillation, carotid atherosclerosis, myocardial infarction, valvular disease, and dyslipidemia.
- The approach by an interdisciplinary group is important to improve the functional prognosis.
- Thrombolysis in cerebrovascular disease has shown full benefits up to the 75 years. In older patients there is evidence of benefit, coming from clinical trials with a small number of patients or case reports. Therefore, there is no contraindication for age. The key is to choose the patient properly, based on parameters of functionality, comorbidity, and strict application of the protocols.
- The use of ASA plus clopidogrel has not improved the final results, but it does increase the risk of intracranial bleeding.
- Start the integral rehabilitation therapy early once the patient stabilizes.
- Avoid all cost prostration or immobility.

4.5. Infections in the elderly at the emergency department

The incidence of infectious processes in patients older than 75 years who attend the emergency services has increased significantly in the last 10 years (from 24.8% to 31.7%), as well as the severity of their clinical presentation and short-term mortality (30 days). This is explained by the summing effect of immunosenescence plus fragility [15].

Key points

- The criteria of systemic response syndrome are not always present in the infected elderly and decrease its usefulness to stratify the risk in this age group.
- The most accepted criterion for fever in the elderly is an increase of 1.2°C based on the basal temperature or higher than 37.2 (sensitivity 83%).
- Several studies have documented the absence of fever, as traditionally defined, in the presence of serious infections. The cut point of 38.2° centigrade loses sensitivity (40%).
- It is common that there is no leukocytosis in the elderly, as part of the infectious response. The cutoff point of the greatest sensitivity for infection is an absolute count of 14,000.
- Tachycardia may not occur.
- The respiratory rate greater than 24 is conserved as part of the inflammatory response.
- In cases of bacteremia, it is more difficult to identify the source.

- The only independent predictors of bacteremia in the elderly are the altered mental state (odds ratio [OR] 2.88; 95% CI 1.52–5.50), vomiting (OR 2.63; 95% CI 1.16–6.15), and the presence of bands in the leucogram greater than 6% (OR 3.50; 95% CI 1.58–5.27).
- The etiology is multimicrobial in 5–17% of patients.
- The presence of a Barthel index less than 60, systolic blood pressure less than 90 mm Hg, and serum lactate >4 mmol/l are significantly associated with short-term mortality.

4.6. Urinary tract infection in the elderly in the context of emergencies

Key points

- Tendency to overdiagnosis due to high prevalence of asymptomatic bacteriuria. 52.2% of urinary tract infections are misdiagnosed.
- Do not attribute a septic picture in an elderly person to a urinary infection first, until carefully ruling out other causes.
- Treating asymptomatic bacteriuria does not improve mortality but increases the side effects of antibiotics and the rates of infection by resistant germs.
- The presence of symptoms is less clear in the elderly with cognitive impairment or the use of probes to stay in those who prevail atypical presentations (delirium, falls, functional decline, etc.).
- If in doubt, focus on the blood picture or PCR.

4.7. Pneumonia in the elderly

The incidence of community-acquired pneumonia (CAP) increases with age and is associated with high morbidity and mortality due to physiological changes associated with aging and a greater presence of chronic diseases. Pneumonia is the fifth cause of death in the United States among those over 65 years. It results in 600,000 hospitalizations and almost 60,000 deaths [16].

Key points

- There is an increased risk of pneumonia due to deglutition disorder, neurological disease, functional decline, malnutrition, use of sedatives, comorbidity, chronic neuropathies, smoking, heart failure, and institutionalization.
- *Streptococcus pneumoniae* remains, as in other ages, as the most frequent etiological agent. However, with aging the microorganisms colonize the oropharynx change, with an increase in Gram-negative and anaerobic germs; consequently, these increase as causal agents. The state of the denture also influences.
- The diagnosis is complicated by the absence of classic symptoms, there is fever in only 26% of cases when compared with young people, and 44% have cough, fever, and dyspnea

due to clinical history. In institutionalized patients, alterations of the mental state are more frequent.

- The CURB-65 is an index that has been validated adequately in the elderly and allows to decide the appropriate level of care to administer the treatment.
- To stratify the risk and possible complications in elderly patients with pneumonia who enter the emergency department, it is useful to classify them as fragile and non-fragile.
- Lack of fever, absence of hypoxia, and altered mental state are associated with therapeutic delay.
- Studies have shown a decrease in mortality in the elderly, related to the rapid administration of the appropriate antibiotic treatment.
- Pneumonia in institutionalized patients and pneumonia associated with health care are related with higher comorbidity, poor functional status, and higher mortality.
- Patients with risk factors such as institutionalization in nursing homes, hospitalization for more than 2 days in the last 90 days, wound care in the last 30 days, high frequency of resistance to antibiotics in the community, infusion of home medications, dialysis, a member of the family with resistant germs and diseases, or immunosuppressive therapy should be covered for resistant germs (*Pseudomonas*, *Klebsiella*, *Acinetobacter*, and *Staphylococcus* resistant to methicillin).
- Remember the importance of vaccination against influenza and pneumococcus to the impact on mortality and hospitalizations in the ICU, respectively.

4.8. Approach of abdominal pain in the elderly patient at the emergency department

If in the young man, the acute abdomen becomes a diagnostic challenge, in the elderly it is a real mystery. It is frequent that a nonspecific pain and a soft abdomen without many signs conceal a true abdominal catastrophe. Total mortality for an elderly man who enters with abdominal pain complaint exceeds 10% [17].

Key points

- In the “surgical abdomen of the old man,” the atypical presentation of the different entities is usual.
- There is difficulty in the interrogation (dementia, basic pathology, loss of senses).
- Fever and leukocytosis are not constant.
- The decrease of the myenteric receptors in the viscera modifies the perception of pain, making it diffuse and badly defined, with the absence of the so-called signs of peritoneal irritation, which increases the false-negative rate.
- The use of NSAIDs masks peritonitis and increases the risk of peptic ulcer.

- Normotensions are synonymous with hypotension in patients with abdominal infection and who are chronically hypertensive.
- Prolonged presentation time, normothermia or hypothermia, and leukopenia are synonyms of severe intra-abdominal infections.

4.9. Psychiatric emergencies in the elderly

Emergency physicians frequently fail to identify and focus on psychiatric disorders, either as a primary reason for consultation or concomitant to the index disease, although they adversely and independently affect the prognosis [18].

Key points

- It is essential, upon the appearance of new psychiatric symptoms in the elderly, to rule out organicity: infections, metabolic disorders, tumors of the central nervous system, reactions to drugs, etc.
- Discard substance abuse.
- Investigate mistreatment of the elderly.
- Depression is the most frequent psychiatric disorder in the elderly, with subsyndromal depression being the most common. It must be clarified that depression is not a natural consequence of aging and must always be treated.
- The most common entities within the “late-onset psychosis” (older than 60 years) are as follows in order: dementias, delirium, affective disorders, schizophrenia, and schizophreniform disorders.
- Delirium: acute alteration of the state of consciousness, fluctuating, with difficulty to maintain the attention, alteration of the sleep-wake pattern, alteration of the perception. Always look for the triggering factor.
- Dementia: cognitive disorder of long duration without alteration of the conscience. It contributes to 16–23% of psychotic symptoms in aging.
- The elderly has the highest rate of death by suicide compared to all age groups.
- Fundamental: good clinical history and functional and neurological examination.
- In the agitated elderly patient, the use of mechanical restrictions produces greater complications.

5. Forecast of the elderly in the emergency service

The early detection of the high-risk adult patient is essential to avoid new admissions and visits in the emergency room and to improve the level of physical and cognitive function. In

adults, prognostic assessment methods are based on the clinical characteristics of severity of the index event. But the older adult cannot be seen under the traditional biomedical gaze that the unifactorial analysis of patients tends to. The complexity of the disease in the elderly is preferable to approach it from a biopsychosocial approach through multidimensional analysis, which identifies how the demographic, clinical, psychological, functional, and social factors influence the acute disease in the elderly and alter its forecast [19]. At the emergency environment, we need brief, simple, and validated tools that help us detect problems in different areas. However, currently there are few prognostic indices used in clinical practice that include these variables typical of the elderly baseline condition.

Having clear prognostic variables to help the quick detection of the patient at high risk of this outcome helps to decide which patients should be considered for aggressive interventions, treatments with curative purposes, support treatments, or treatments only for palliative purposes.

Currently, there are models of structured triage in the emergency services, being the most prominent: the Australian model (Australasian Triage Scale (ATS)), the Canadian scale of triage and gravity for emergency services (Canadian Emergency Department Triage and Acuity Scale (CTAS)), the Manchester Triage System (MTS), the Emergency Severity Index (ESI), and the Andorran model of triage (Model Andorra of Triage (MAT)); however, these are not suitable for use in elderly patients.

When referring to the young and adult population, there are known instruments that try to predict the short-term prognosis of critical hospitalized patients, such as the APACHE III used in the intensive care units (ICU); the SUPPORT, to establish the 6-month prognosis of hospitalized patients both inside and outside the ICU; and more recently the short version of the EORTC QLQ-30 for use in palliative care. The drawback of these evaluations is that they overestimate age a priori as an element of risk, without considering that there are also “robust” elderly or with successful aging, in which the chronological age alone does not weigh as a negative factor.

The scales “Identification of Seniors at Risk” (ISAR) and the “Triage Risk Screening Tool” (TRST) have been published for use in the elderly, which allow assessing the risk of complications at release of the service and classifying the degree of fragility [20].

The prognosis of the diseases in geriatric patients is frequently influenced by the basal health condition of the elderly, which is determined by the nutritional status, the mental state, and the functional capacity (level of independence for the activities of daily life), variables that are not contemplated in the scales of habitual use in adults. In this sense, it has been shown that the deterioration of each of these areas can be an independent factor of mortality in the elderly.

The multidimensional geriatric assessment is an evaluation carried out by an interdisciplinary team to identify the problems and establish a care plan to improve the functionality and quality of life of the geriatric patient. It offers an integral and holistic view of the elderly adult patient, in which the clinical condition is evaluated, but psychological, functional, and social evaluation is also included. In fact, having knowledge of the instruments used in daily practice in geriatric care is extremely useful. Different scales and protocols are used and duly

validated. Several authors have proposed to stratify the risk of the geriatric patient in the emergency department based on a model of comprehensive geriatric assessment, adapted to this service [21].

6. The frail senior in the emergency room

The frail senior is the one who has his homeostatic reserves to the limit, with a high probability of suffering a deleterious outcome. The detection of this patient is fundamental in the emergency services, since in this scenario it is where there is more risk of entering the cascade of functional decline and dependence. It is interesting how the acute disease acts as a trigger, unmasking the frailty picture. Studies have shown how frail senior people in the emergency room have higher rates of hospitalization, functional deterioration, readmissions, and short-term mortality, when compared with non-frail elderly. For the screening of frail elderly people in the emergency department, the ISAR, TRST, deficit accumulation index (DAI), and comprehensive geriatric assessment are recommended in selected patients defined as high risk. Identifying frail elderly allows designing a special care plan, which has shown a decrease in the number of admissions in residence at 30 days, an increase in patient satisfaction, less functional deterioration, fewer readmissions, and without increasing costs. No impact on mortality or institutionalization has been demonstrated [22].

7. Decision-making

It is common to observe how some interventions are systematically denied to the elderly, arguing as the only reason age. This produces gross errors, since chronological age alone does not provide enough information to make the best decision. They are the multidimensional parameters that include basal functionality, comorbidities, and emotional-cognitive and social support, which together reflect biological aging and support the relevance or not of the proposed treatment [23].

8. Conclusion

The diagnostic approach and the therapeutic approach of the elderly, in the emergency department, should be framed in a deep knowledge of their physiological alterations, a careful anamnesis, and therapeutic prudence. Because of the diminished homeostatic reserve of the elderly, the time to establish adequate treatment is shorter.

Conflict of interest

I declare not having any conflict of interest in the elaboration of this paper.

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References

- [1] Fedarko NS. The biology of aging and frailty. *Clinics in Geriatric Medicine*. 2011;**27**:27-37
- [2] Hwang U, Morrison S. The geriatric emergency department. *Journal of the American Geriatrics Society*. 2007;**55**(11):1873-1876
- [3] Baztán J, Rangel O, Gomez J. Deterioro funcional, discapacidad y dependencia en el anciano. En: *Fundamentos de la atención sanitaria a los mayores*. 1a ed. Madrid: Elsevier; 2015. pp. 372-382
- [4] Morales A, Ocampo J. Valoración geriátrica integral. En: *Texto de medicina Interna: aprendizaje basado en problemas*. 1a ed. Distribuna; 2013. pp. 2019-25
- [5] Sanz N, Martel J, Sanchis-Bayarri V, Castellano E. Factores pronósticos en pacientes pluri-patológicos de edad avanzada en un hospital de asistencia a crónicos de media y larga estancia (HACMLE). *Anales de Medicina Interna*. 2006;**23**(11):529-532
- [6] Bermudez M, Guzman G, Fernandez M. Impacto del paciente anciano en los servicios de urgencias hospitalarios. *Revista Española de Geriatria y Gerontología*. 20180101, Issue: Preprints. (ISSN: 0211139X. Número de acceso: ejs42992624)
- [7] Strange GR, Chen EH. Use of emergency departments by elder patients: A five-year follow up study. *Academic Emergency Medicine*. 1998;**5**(12):1157-1162
- [8] Martín-Sánchez FJ, Merino C, Fernández Alonso C. El paciente geriátrico en urgencias. *Anales Sis San Navarra*. 2010;**33**(1):163-172
- [9] Moya Mir MS. Epidemiología de las urgencias del anciano. *Monografías Emergencias*. 2008;**2**:6-8
- [10] McKay RD. Increasing rates of emergency department visits for elderly patients in the United States. *Annals of Emergency Medicine*. 2008;**51**:769-774

- [11] Duaso E, Lopez-Soto A. Valoración del paciente frágil en urgencias. *Emergencias*. 2009; **21**:362-369
- [12] Llorente S, Arcos PI, Alonso FM. Factores que influyen en la demora del enfermo en un servicio de urgencias hospitalarias. *Emergencias [Internet]*; **12**(3) Disponible en: http://www.semes.org/revista_EMERGENCIAS/
- [13] Gómez-Cerquera JM, Daroca-Pérez R, Baeza-Trinidad R, Casañas-Martínez M. Validity of procalcitonin for the diagnosis of bacterial infection in elderly patients. *Enfermedades Infecciosas y Microbiología Clínica*. 2015; **33**:521-524
- [14] Mattu A. Geriatric emergency medicine. *Emergency Medicine Clinics of North America*. 2006; **24**:13-14
- [15] Julian-Jimenez A, Gonzales J, Martinez M. Short-term prognostic factors in the elderly patients seen in emergency departments due to infections. *Enfermedades Infecciosas y Microbiología Clínica*. 2017; **35**(4):215-219
- [16] Gonzales J, Linares P, Menedez R. Guidelines for the management of community acquired pneumonia in the elderly patient. *Revista Española de Quimioterapia*. 2014; **27**(1):69-86
- [17] Cardenas A. Criterio de los estudiantes de Medicina y de expertos sobre el diagnóstico del abdomen agudo quirúrgico en el anciano. *Educación Médica Superior*. 2014; **28**(4): 643-651
- [18] Valencia C, Heredia R, Moreno A. Envejecimiento y delirium: un viejo conocido en el Departamento de Urgencias. *Meduis*. 2014; **27**(2):85-92
- [19] Morales A, Cardona D. Factores pronósticos de mortalidad temprana en ancianos ingresados en un servicio de urgencias. *Revista Española de Geriátría y Gerontología*. 2017; **52**(5): 257-260
- [20] Aranguren E, Capel JA. Estudio de la validez pronóstica de la recepción, acogida y clasificación de pacientes en el área de urgencias en un hospital terciario. *Anales Sis San Navarra*. 2005; **28**(2):177-188
- [21] Calle A, Marquez MA. Valoración geriátrica y factores pronósticos de mortalidad en pacientes muy ancianos con neumonía extrahospitalaria. *Archivos de Bronconeumología*. 2014; **50**(10):429-434
- [22] Martín-Sánchez J, Fernández C, Gil P. Puntos clave en la asistencia al anciano frágil en Urgencias. *Medicina Clínica*. 2013; **140**(1):24-29
- [23] Gomez JF, Curcio CL. *Salud del anciano: Valoración*. 1st ed. Blanecolor; 2014. 870 p

