

REVIEWS

Palliative care for the older patients

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Abstract

The increase in life expectancy has led to an increase in the frequency and incidence of chronic diseases with irreversible progression and chronic debilitating diseases. The older population, a growing segment of the population, suffer from at least 3 concomitant chronic diseases with a negative effect on their quality of life.

This phenomenon leads to the need to integrate palliative medicine as a central element in the care of older adults so that this period is no longer burdened by suffering, pain and humiliation.

Thus, we conducted a literature review to identify when the palliative care team should be involved in the care of the older adult with chronic progressive diseases and what is the impact of palliative care on quality of life and in shortening the period of functional dependency at the end of life.

Palliative care should be integrated into standard practice earlier and more consistently in treating the chronically ill older adults. The course of chronic disease is longer and harder to predict than in oncologic disease, thus the impact on quality of life is major.

Keywords: older adult, palliative care, chronic diseases, quality of life

Rezumat

Creșterea speranței de viață a dus la creșterea frecvenței și incidenței bolilor cronice cu evoluție ireversibilă și a bolilor cronice invalidante. Vârșnicii, un segment al populației în creștere, suferă de cel puțin 3 boli cronice concomitente cu efect negativ asupra calității vieții acestuia.

Acest fenomen duce la necesitatea integrării medicinei paliative ca element central în îngrijirea vârstnicului astfel încât această perioadă să nu mai fie grevată de suferință, durere și umilință.

Astfel am efectuat o revizuire a literaturii pentru a identifica momentul oportun în care trebuie implicată echipa de îngrijiri paliative în îngrijirea vârstnicului cu boli cronice progresive și care este impactul acestor îngrijiri în calitatea vieții vârstnicului, în scurtarea perioadei de dependență funcțională a acestuia de la sfârșitul vieții.

Îngrijirile paliative ar trebui integrate în practica standard mai devreme și mai consecvent în tratarea vârstnicului cu boli cronice. Evoluția bolii cronice este mai lungă și mai greu de prezis decât în boala oncologică, astfel impactul asupra calității vieții este major.

Cuvinte cheie: vârstnic, paliativ, boli cronice, calitatea vieții

Introduction

Population ageing is an unprecedented process in human history, the age structure has not fluctuated much so far, but since the second half of the 20th century, ageing has become a clear social problem and has attracted the attention of the research community. [1] The main concerns are related to socio-economic and political issues, and gerontology has focused on increasing the quality of life and maintaining the social role of the seniors. [2]

The growth of this segment of the population has been observed globally and there are different anthropological theories that try to explain this phenomenon, but most of them are based on rising living standards, evolving health care, changing conceptions of gender and family that lead to a decline in birth rates, fertility and mortality.

Romania follows the demographic trend of developed countries and although we are in line with the European

average in terms of life expectancy growth, the WHO reports a period of approximately 11.2 years of life marked by disability in the Romanian population, compared to 9.9 years which is the European average.

Life expectancy is increasing, so the older adults will suffer longer and from more concurrent chronic diseases, which most commonly affect the cardiovascular, respiratory and central nervous systems and involve metabolic disorders. Several lines of evidence indicate that people aged ≥ 65 have at least 3 chronic diseases, while a substantial proportion of these patients suffer from at least 5 conditions. [3]

Increasing human longevity only makes sense in the context of successful ageing associated with a good quality of life (QoL), one of the main challenges of today's society. Quality of life and the pursuit of the patient's well-being is the credo guiding medical practice.

Increasing life expectancy has inevitably led to an increase in the frequency and incidence of chronic diseases with irreversible progression (heart failure, chronic respiratory failure, chronic renal failure, diabetes mellitus), of disabling chronic diseases (stroke, Parkinson's disease, cognitive impairment of varying degrees) and the incidence of geriatric syndromes, which have a profoundly negative effect on the degree of independence and quality of life of the elderly. This phenomenon leads to the need to make palliative medicine a central element in the care of the elderly so that this period is no longer burdened by suffering, pain and humiliation.

Chronic diseases have a heterogeneous, fluctuating course, with the patient losing functional status with exacerbation and hospitalization. Repeated hospitalizations and symptoms that are refractory to treatment negatively influence the quality of life of these patients.

Methodology

We conducted a literature review to identify when the palliative care team should be involved in the care of the patient 65 years old or older with chronic progressive diseases and what is the impact of palliative care on the quality of life of the older patient, in shortening the period of functional dependency at the end of life.

We performed a PubMed and Web of Science search on the keywords "early palliative care chronic disease" for articles from the last 5 years and obtained 71 results. After excluding reviews and meta-analyses and articles with animal model studies, 11 studies resulted and we performed a narrative review.

Palliative care for the older adults with heart failure

Functional and structural changes in the cardiovascular system occur with age, leading to an increased risk of cardiovascular disease. The number of senescent cardiac, muscle and endothelial cells increases which contributes to the progression of diseases such as hypertension, atherosclerosis, heart failure and stroke. [4] Physiological changes in the cardiovascular system include left ventricular hypertrophy, diastolic heart failure, increased arrhythmogenic risk and degenerative valvular changes, which decrease functional capacity and contribute to the development of heart failure. [5] Medical progress has greatly influenced the course and prognosis of heart failure, but the progression of the disease, although slowed, cannot be stopped. [6] European and American cardiology guidelines recommend palliative care, but the timing of when palliative care is initiated is not clearly determined. Palliative care in patients with heart failure is frequently recommended in the final stage of the disease, at the end of life, but the benefits on quality of life, symptom control and disease progression are greater, if interventions are made at an earlier stage of the disease or even at diagnosis.

Patients with heart failure frequently have total pain and the benefit of multidisciplinary palliative care team intervention is important, pain being often ignored and underestimated especially in the presence of dyspnoea and fatigability. [7] The course of the disease is fluctuating and the patient's ability to adapt to the psychological, physical and social changes within the disease is greatly improved with palliative care support. [8,9] Hospitalization rates, acute events and decompensations are also greatly reduced in patients receiving palliative care. One study comparing the outcome of patients with and without palliative care in the last 30 days of life showed that those

without palliative care had a higher rate of hospitalization, intensive care unit admission, supportive care and hospital death than those with palliative care specialist consultation. [10] The PAL-HF study investigated whether multidisciplinary palliative care team intervention improves quality of life, decreases the presence of depression and anxiety, maintains spiritual well-being, reduces hospitalizations and influences mortality. This study included 150 patients with advanced heart failure. Subjects were randomized into two groups, a usual care group and a usual care and palliative care group. Those receiving palliative care had increases in quality of life at 6 months, decreases in depression and anxiety, and improvements in spiritual state, with no differences between the two groups in hospitalization and mortality. Thus, the authors concluded that palliative care is necessary in these patients to improve quality of life and maintain psychological and spiritual well-being. [11] A previous study investigated the same end-points: impact on quality of life, presence of depression, symptoms as well as hospitalization, advanced care plan and mortality. This study included 332 patients also randomized into two groups, a control group and a palliative care group. And this study achieved a higher quality of life 10 months after inclusion, a decrease in the prevalence of depressive symptoms in these patients as well as better symptom control. [12]

Although guidelines recommend palliative care in patients with heart failure, and the benefits in patients' quality of life are demonstrated and the earlier the intervention the greater positive effect, access to palliative care services are frequently limited in most countries due to lack of trained personnel, lack of knowledge of patients about these services and distance, often being often deprived in rural areas. The ENABLE CHF-PC study included 415 subjects aged over 50 years with NYHA class III or IV heart failure. They were randomized into 2 groups, one group receiving usual care and one group receiving palliative care. Palliative care involved an initial consultation, then follow-up and telephone counselling of the patient 6 times a week for 48 weeks. In the intervention group, there was an improvement in symptom control and quality of life, although statistically insignificant. One of the explanations for this was the non-adherence of patients to the 6 telephone counselling sessions and the inability of 39% of patients to attend the initial consultation. [13]

Palliative care in the older patient with chronic obstructive pulmonary disease

Aging of the respiratory system consists of alveolar enlargement with stretching of the alveolar septal membranes, reduced gas exchange surface area, loss of peripheral alveolar connections, decreased elastic recoil. [14] These changes lead to a decrease in respiratory volumes in the absence of pathology. [15]

With increasing age, the incidence of two lung diseases increases: chronic obstructive pulmonary disease (COPD) and idiopathic pulmonary fibrosis (IPF), which has led to further investigation of the causal factors, with many processes being implicated in normal aging. [16,17] Changes in telomere length have also been identified in both COPD and IPF. This shortening is more pronounced in smokers. In IPF, telomere shortening has been identified in pulmonary epithelial cells, but also in peripheral blood cells. [18] Another mechanism of aging that predisposes to the development of these diseases is the accumulation of advanced glycation products, found in high amounts in alveolar macrophages in patients with IPF. [19]

In COPD and lung cancer there is an important similarity in symptoms, particularly the presence of dyspnoea and pain in both categories of patients. Despite having similar symptoms with a major impact on quality of life, referral of COPD patients to palliative care is sometimes delayed or non-existent, although the symptoms in these patients compared to lung cancer patients are more protracted. A systematic review published by Buttler *et al* in 2020 concluded that although the burden of symptoms between the two pathologies is the same, there are differences in the care received. Thus, those with COPD less frequently receive opioid medication to control dyspnoea, therapeutic refractoriness is more frequent and symptom control is poorer, negatively influencing quality of life. [20]

Patients with COPD have difficulty coping with the disease, and the uncertain prognosis and fluctuating disease course become a challenge. Early palliative care intervention can therefore make a difference to the quality of life of these patients. This is also emphasized by the Global Initiative for Chronic Obstructive Lung Disease (GOLD) in the present guidelines mentioning the role of palliative care.

The positive impact of palliative care initiated from the moment of diagnosis of oncologic disease has been demonstrated, with an increase in quality of life, a good death and even an increase in survival. However, in chronic diseases, palliative care is only addressed to the last months of life. It has been described a higher prevalence of anxiety and dyspnoea in patients with COPD than in those with lung cancer. [21] Thus, the need for palliative care is clear and it is necessary to start at a less advanced stage of COPD to ensure a high quality of life.

EPIC (Early palliative care in COPD) is a project that aims to improve the quality and quantity of palliative care for these patients. [22]

Palliative care for the older adults with dementia

The prevalence of dementia is increased in the older adults. The changes associated with the dementia syndrome are not only temporo-spatial disorientation. The interview with caregivers may reveal changes in mood, reasoning and concentration long before the onset of disorientation symptoms. As late diagnosis poses a problem, but overdiagnosis of dementia is also a cause for concern, impairment of neurocognitive status in the elderly may be due to systemic pathologies that are often treatable. [23]

Elderly people with dementia and their families undergo numerous treatments and interventions during the course of the disease, which have a major impact on quality of life. Lack of palliative care can lead to treatment overload, which proves futile and contributes to psycho-emotional and financial stress on the family. Although the benefit of palliative care is demonstrated in these patients, the timing of referral and initiation of these interventions is uncertain. There is a desire to create a screening tool that can predict the correct time in the disease course when they are needed, so that resources can also be allocated correctly. There have been scores that assess the survival of patients with dementia at 6 months or 1 year, but for care planning and communication by the patient of their wishes, expectations and values the palliative care team intervention is needed earlier in the course of the disease and not just at the stage of dependency. [24]

Although there is a consensus on the need for palliative care in the care of patients with dementia, there is debate about the

timing of its introduction, with early introduction considered inappropriate. [25]

Palliative care for the older adults with chronic kidney disease

Ageing is associated with structural and functional changes in the renal system. The glomerular filtration rate decreases by 0.4-1ml/min per year, due to a decrease in the number of functional glomeruli. Impairment of the renin-angiotensin-aldosterone system is of particular clinical importance because it predisposes the elderly to acute renal events and progression to chronic kidney disease. [28] Also due to changes in the renin-angiotensin-aldosterone system, with advancing age, the body's ability to respond to stressors such as hypotension, hypovolemia or hypokalaemia decreases. [29,30]

Progression to end-stage renal disease is difficult to predict. Many patients maintain stage I-V, only a few progress to end stage (GFR;15ml/min), and mortality is associated with cardiovascular disease. [31] The main symptoms are secondary to hyperhydration and uraemia, and in end stage chronic kidney disease, the aim is symptom management.

In patients over 75 years of age, entry into a chronic dialysis program may be limited by the presence of comorbidities or low life expectancy. The logistical support, transportation, and risks associated with dialysis should also be presented in detail to the patient when assessing the appropriateness of this treatment. In elderly patients, recovery after a dialysis session is more difficult, depressive symptoms are frequently present in this age group and the association of frailty syndrome increases the risk of mortality and morbidity one year after the initiation of renal supplementation. [32]

The presence of uraemia involves nausea, vomiting, delirium and malnutrition and in some cases, discomfort created by pruritus. Palliative care has a role in the management of these symptoms, pain management, maintenance of nutritional, psychoemotional, social, spiritual status and has a role in supporting the family during the bereavement period.

A synthesis of qualitative studies included 532 patients with end-stage chronic kidney disease, most over 65 years of age. The authors highlighted 5 elements that marked the experience of patients with end-stage CKD: preparation for end-stage, overcoming dialysis limitations, disease progression and physical deterioration, suffering from the disease, and maintaining emotional status. This study focused on the patient experience and revealed key elements where palliative care plays its role with benefits for the quality of life of these patients. [33]

Conclusions

The older patient with chronic diseases should receive palliative care as early as possible in order to ensure a high quality of life through symptom control as well as a holistic approach. The social, spiritual and psycho-emotional levels have a major impact on the older adults.

Several studies indicate that palliative care should be integrated into standard practice earlier and more consistently, not only in cancer patients, especially since in patients with chronic diseases the course of the disease is longer and harder to predict than in oncologic disease, thus the impact on quality of life is major.

References

- Macia E, Chevé D, Montepare JM. Demographic aging and biopower. *J Aging Stud.* 2019;51(November):100820.
- Reichstadt J, Depp CA, Palinkas LA, Folsom DP, Jeste D V. Building blocks of successful aging: A focus group study of older adults perceived contributors to successful aging. *Am J Geriatr Psychiatry.* 2007;15(3):194-201.
- Boyd CM, Darer J, Boulton C, Fried LP, Boulton L, Wu AW. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: Implications for pay for performance. Vol. 294, *Journal of the American Medical Association.* 2005. p. 716-24.
- Chiao YA, Rabinovitch PS. The Aging Heart. *Cold Spring Harb Perspect Med.* 2015 Sep 1;5(9):a025148-a025148.
- Paneni F, Diaz Cañestro C, Libby P, Lüscher TF, Camici GG. The Aging Cardiovascular System: Understanding It at the Cellular and Clinical Levels. *J Am Coll Cardiol.* 2017;69(15):1952-67.
- Yancy CW, Jessup M, Bozkurt B, Butler J, Casey DE, Colvin MM, et al. 2016 ACC/AHA/HFSA Focused Update on New Pharmacologic Therapy for Heart Failure: An Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America. *J Am Coll Cardiol.* 2016;68(13):1476-88.
- Alemzadeh-Ansari MJ, Ansari-Ramandi MM, Naderi N. Chronic Pain in Chronic Heart Failure: A Review Article. *J Tehran Heart Cent.* 2017 Apr;12(2):49-56.
- Okumura T, Sawamura A, Murohara T. Palliative and end-of-life care for heart failure patients in an aging society. *Korean J Intern Med.* 2018 Nov;33(6):1039-49.
- Bekelman DB, Havranek EP, Becker DM, Kutner JS, Peterson PN, Wittstein IS, et al. Symptoms, Depression, and Quality of Life in Patients With Heart Failure. *J Card Fail.* 2007;13(8):643-8.
- Earp M, Cai P, Fong A, Blacklaws K, Pham T-M, Shack L, et al. Hospital-based acute care in the last 30 days of life among patients with chronic disease that received early, late or no specialist palliative care: a retrospective cohort study of eight chronic disease groups. *BMJ Open.* 2021 Mar;11(3):e044196.
- Rogers JG, Patel CB, Mentz RJ, Granger BB, Steinhauser KE, Fiuzat M, et al. Palliative Care in Heart Failure: The PAL-HF Randomized, Controlled Clinical Trial. *J Am Coll Cardiol.* 2017 Jul;70(3):331-41.
- Sidebottom AC, Jorgenson A, Richards H, Kirven J, Sillah A. Inpatient palliative care for patients with acute heart failure: outcomes from a randomized trial. *J Palliat Med.* 2015 Feb;18(2):134-42.
- Bakitas MA, Dionne-Odom JN, Ejem DB, Wells R, Azuero A, Stockdill ML, et al. Effect of an Early Palliative Care Telehealth Intervention vs Usual Care on Patients With Heart Failure: The ENABLE CHF-PC Randomized Clinical Trial. *JAMA Intern Med.* 2020 Sep;180(9):1203-13.
- Verbeke EK, Cauberghs M, Lauweryns JM, van de Woestijne KP. Anatomy of membranous bronchioles in normal, senile and emphysematous human lungs. *J Appl Physiol.* 1994 Oct;77(4):1875-84.
- Quanjer PH, Stanojevic S, Cole TJ, Baur X, Hall GL, Culver BH, et al. Multi-ethnic reference values for spirometry for the 3-95-year age range: the global lung function 2012 equations. *Eur Respir J.* 2012 Dec;40(6):1324-43.
- Sueblinvong V, Neujahr DC, Mills ST, Roser-Page S, Ritzenthaler JD, Guidot D, et al. Predisposition for dysrepair in the aged lung. *Am J Med Sci.* 2012 Jul;344(1):41-51.
- Budinger GRS, Kohanski RA, Gan W, Kobor MS, Amaral LA, Armanios M, et al. The Intersection of Aging Biology and the Pathobiology of Lung Diseases: A Joint NHLBI/NIA Workshop. *J Gerontol A Biol Biol Sci Med Sci.* 2017 Oct 12;72(11):1492-500.
- Stanley SE, Chen JLL, Podlevsky JD, Alder JK, Hansel NN, Mathias RA, et al. Telomerase mutations in smokers with severe emphysema. *J Clin Invest.* 2015 Feb;125(2):563-70.
- Rojas M, Mora AL, Kapetanaki M, Weathington N, Gladwin M, Eickelberg O. Aging and Lung Disease. *Clinical Impact and Cellular and Molecular Pathways.* *Ann Am Thorac Soc.* 2015 Dec;12(12):S222-7.
- Butler SJ, Ellerton L, Gershon AS, Goldstein RS, Brooks D. Comparison of end-of-life care in people with chronic obstructive pulmonary disease or lung cancer: A systematic review. *Palliat Med.* 2020 Sep;34(8):1030-43.
- Kelley AS, Morrison RS. Palliative Care for the Seriously Ill. *N Engl J Med.* 2015 Aug;373(8):747-55.
- Iyer AS, Wells RD, Dionne-Odom JN, Dionne-Odom JN, Bechthold AC, Armstrong M, Byun JY, et al. Project EPIC (Early Palliative Care In COPD): A Formative and Summative Evaluation of the EPIC Telehealth Intervention. *J Pain Symptom Manage.* 2023 Apr;65(4):335-347.e3.
- Wang S, Zhang J, Liang J, Song H, Ji X. Treatable causes of adult-onset rapid cognitive impairment. *Clin Neurol Neurosurg.* 2019 Dec;187:105575-1055575.
- Wang L, Sha L, Lakin JR, Bynum J, Bates DW, Hong P, et al. Development and Validation of a Deep Learning Algorithm for Mortality Prediction in Selecting Patients With Dementia for Earlier Palliative Care Interventions. *JAMA Netw open.* 2019 Jul;2(7):e196972.
- van der Steen JT, Radbruch L, de Boer ME, Jünger S, Hughes JC, Larkin P, et al. Achieving consensus and controversy around applicability of palliative care to dementia. *Int psychogeriatrics.* 2016 Jan;28(1):133-45.
- Weinstein JR, Anderson S. The aging kidney: physiological changes. *Adv Chronic Kidney Dis.* 2010 Jul;17(4):302-7.
- Li M, Nicholls KM, Becker GJ. Glomerular size and global glomerulosclerosis in normal Caucasian donor kidneys: effects of aging and gender. *J Nephrol.* 2002;15(6):614-9.
- Jung FF, Kennefick TM, Ingelfinger JR, Vora JP, Anderson S. Down-regulation of the intrarenal renin-angiotensin system in the aging rat. *J Am Soc Nephrol.* 1995 Feb;5(8):1573-80.
- Yoon HE, Choi BS. The renin-angiotensin system and aging in the kidney. *Korean J Intern Med.* 2014;29(3):291-5.
- Zhou XJ, Saxena R, Liu Z, Vaziri ND, Silva FG. Renal senescence in 2008: Progress and challenges. *Int Urol Nephrol.* 2008;40(3):823-39.
- Snyder JJ, Collins AJ. Association of preventive health care with atherosclerotic heart disease and mortality in CKD. *J Am Soc Nephrol.* 2009 Jul;20(7):1614-22.
- Moss AH. Revised dialysis clinical practice guideline promotes more informed decision-making. *Clin J Am Soc Nephrol.* 2010 Dec;5(12):2380-3.
- Imamah NF, Lin H-R. Palliative Care in Patients with End-Stage Renal Disease: A Meta Synthesis. *Int J Environ Res Public Health.* 2021 Oct;18(20).