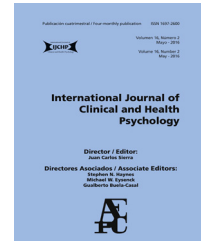




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ORIGINAL ARTICLE

Cognitive impairment, symptoms of depression, and health-related quality of life in patients with severe stable heart failure

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KEYWORDS

Cognitive impairment;
Quality of life;
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Abstract *Background/Objective:* Diseases of the cardiovascular system and depression are common, and they often coexist, significantly deteriorating the quality of life. Another factor influencing vital functions is impairment of cognitive functions occurring in patients with heart failure (HF). Deficits of different degrees of severity have been observed within a variety of cognitive domains. Cognitive deficits, which may impair daily functioning, hinder adaptation to the disease and worsen prognosis, are also observed in depression. The aim of this study was to assess the relationship between the quality of life, the severity of depressive disorders and disorders of certain executive functions, and memory in patients with severe, stable heart failure. *Method:* The study group consisted of 50 patients with stable, severe heart failure and 50 appropriately selected patients with coronary heart disease, without heart failure. *Results:* The results of cognitive tests are significantly lower in the HF group than in the control group. In the HF group, a significantly lower quality of life, as well as a higher result in the BDI-II test, was observed. No influence of cognitive disorders on the reduction in the quality of life was demonstrated. The factor that significantly affects the quality of life is the intensification of depression symptoms. *Conclusions:* The factor that significantly affects the quality of life is the intensification of depression symptoms.

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PALABRAS CLAVE

Deterioro cognitivo;
calidad de vida;
insuficiencia
cardíaca;
estudio descriptivo
observacional

Deterioro cognitivo, síntomas depresivos y calidad de vida relacionada con la salud en pacientes con insuficiencia cardíaca estable severa

Resumen *Antecedentes/Objetivo:* Las enfermedades cardiovasculares y la depresión son comunes, y muchas veces coexistentes, empeorando la calidad de vida. Además, existen trastornos de funciones cognitivas omnipresentes en pacientes con insuficiencia cardíaca. Se observan deficiencias de distinto nivel de severidad en varios dominios cognitivos. Asimismo, en la depresión existen problemas cognitivos que podrían perjudicar el funcionamiento cotidiano, obstaculizar la adaptación a la enfermedad y empeorar los pronósticos. El objetivo del trabajo fue evaluar la relación entre calidad de vida, intensificación de trastornos depresivos y trastornos de ciertos aspectos de las funciones ejecutivas y memoria en pacientes con insuficiencia cardíaca grave y estable. *Método:* Los estudios se realizaron en un grupo de 50 pacientes con insuficiencia cardíaca grave y estable y otro de 50 pacientes con enfermedad coronaria, pero sin insuficiencia cardíaca. *Resultados:* Los resultados de las pruebas cognitivas son notablemente peores en el grupo con insuficiencia cardíaca en comparación con el grupo de control. Se observó una calidad de vida considerablemente peor y puntuaciones significativamente más altas en el BDI-II. No se demostró que los trastornos cognitivos influyeran en el empeoramiento de la calidad de vida. Sin embargo, se observó que los síntomas de depresión influían en la calidad de vida. *Conclusiones:* El factor que afecta significativamente a la calidad de vida es la intensificación de los síntomas depresivos.

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Together with the development of medicine and its diagnostic and therapeutic possibilities, life expectancy has been considerably extended. Nowadays, effective medical intervention enables patients to survive situations that once inevitably ended in death. One consequence of this success in medicine is, however, an increase in the proportion of people suffering from various chronic diseases that significantly affect their quality of life. Currently, prevalent lifestyle diseases, such as coronary heart disease (CHD), hypertension, diabetes and depression, considerably limit the functioning of humans and hinder their adaptation to the requirements related to the situation of the disease and everyday life (Arrebola-Moreno et al., 2014; Granados-Gómez, Roales-Nieto, Gil-Luciano, Moreno-San Pedro, & Márquez-Hernández, 2015). The diseases interfere with functioning on many levels: physical, social and emotional.

Cognitive impairment is prevalent in heart failure (HF), with ranges from 30-89%, depending on the type of measurements used and characteristics of the studied sample (Stetkiewicz-Lewandowicz & Borkowska, 2013). Cognitive deficits in patients with HF are often subtle and difficult to detect with standard screening instruments (Pressler, 2008). Studies using neuropsychological instruments indicate that deficits of varying severity are observed in several cognitive domains, including memory, attention, executive function and psychomotor speed. These deficits have been found to be independent of age, sex, comorbidities, alcohol consumption and education level (Pressler et al., 2010a). People with HF have a more than four-fold risk of cognitive deficits compared to people without HF, after other factors such as age, gender and comorbidities have been taken into account (Sauve, Lewis, Blankenbiller, Rickabaugh, & Pressler, 2009). Quite often, the decline does not cause any significant functional impairment, and thus it does not meet the criteria

for diagnosing dementia. It is defined as mild cognitive impairment (MCI), but approx. 25% of patients may have moderate-to-severe cognitive impairment (CI) (Kim, Hwang, Shim, & Jeong, 2015).

The mechanisms that contribute to cognitive deficits in HF still remain unclear. Studies have provided evidence that the clinically detected impairments in patients with HF may be the outcome of structural or neurodegenerative changes which cannot be reversed, and/or functional neuronal dysfunctions which may progress to neuronal cell death or improve in response to treatment (Dardiotis et al., 2012). Cerebral and systemic haemodynamics seem to influence the development of CI in patients with HF. Cerebral blood flow (CBF), estimated with single-photon emission computed tomography (SPECT), was reduced by about 30% in patients with severe HF (NYHA class III/IV) (Gruhn et al., 2001), and may suggest that cognitive performance in patients with HF is related to cerebral perfusion. Cerebral perfusion is mediated by a number of factors, including cardiac output and cerebrovascular reactivity (Dardiotis et al., 2012). Another aspect of the pathophysiology of cognitive impairment in HF is the development of cerebral abnormalities as a result of chronic hypoperfusion or stroke (Ampadu & Morley, 2015). MRI studies revealed (Woo et al., 2015) that HF patients have an increased frequency of focal brain abnormality, ranging from multiple cortical or subcortical infarcts to small vessel disease with white-matter lesions and lacunar infarcts, with cerebral embolism and hypoperfusion being the most plausible mechanisms.

Depression and heart disease are common, and they frequently coexist, often worsening both the quality of life and prognosis of the patient due to poorer adherence to treatment (Muller, Hess, & Hager, 2012). The relationship between depression and heart disease is multidimensional.

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