

THE ESSENCE OF NURSING A PATIENT WITH CHRONIC HEART FAILURE – CASE STUDY

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A. Study design/planning • B. Data collection/entry • C. Data analysis/statistics • D. Data interpretation • E. Preparation of manuscript • F. Literature analysis/search • G. Funds collection

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ABSTRACT

Chronic heart failure is associated with the disturbance of the physiological activity of the heart muscle, and it directly contributes to the occurrence of specific clinical symptoms such as shortness of breath, oedema, and deterioration of physical exercise tolerance.

The aim of this work is to present the essence of nursing a patient with chronic heart failure, hospitalized due to exacerbation of the symptoms of the disease.

A 77-year-old patient was admitted to the Cardiology Department in an emergency due to the progression of decompensated heart failure. On admission, the patient was diagnosed with circulatory and respiratory disorders. After 10 days of hospitalization, the patient's general condition improved, and the patient was qualified for ICD implantation.

Heart failure manifests numerous clinical symptoms. An important task of interdisciplinary teams is health education, focused on self-control and self-care.

Key words: nursing care, cardiology, chronic heart failure.

INTRODUCTION

Heart failure (HF) is a pathological condition in which the heart as a pump is not able to transfuse the appropriate volume of blood to organs and tissues, which disturbs the process of maintaining homeostasis of the body. According to the current definition, as a result of disorders of the physiology of the circulatory system, there is a rapid reduction in the cardiac output (CO) in relation to the body's metabolic demand [1].

The diverse course of the disease generates different forms of heart failure, dividing them as follows:

- chronic heart failure (CHF) – applies to patients in whom heart failure was diagnosed earlier or symptoms developed gradually,
- acute heart failure (AHF),
- decompensated heart failure – occurs when chronic heart failure worsens, suddenly or slowly [2].

The prevalence of heart failure in Europe and South America has been estimated at 1-2%. In the world, this problem affects about 3% of the population and is referred to as the epidemic of the 21st century [3]. The increase in the incidence of patients with heart failure is related to age. The aging of the popu-

lation doubles the number of patients over the age of 60 years, reaching a level of 10-20% [4].

The aetiopathogenesis of heart failure is associated with diseases of the cardiovascular system that cause disturbances in the physiological filling or ejection of blood from the heart cavities. Heart failure can also occur on a genetic basis or as a factor outside the circulatory system, which can include the following:

- hyperthyroidism,
- kidney diseases,
- obesity,
- diabetes,
- anaemia,
- avitaminosis [5].

Myocardial damage may result from an incorrect lifestyle or abuse of cardiotoxic substances (alcohol, drugs) [6]. In many cases, it can be related to the region of the world, the degree of economic development, and the sex and race of the patient [7].

Symptoms of heart failure build up gradually. The type and nature of the occurring symptoms depends on the form of insufficiency and individual predispositions. Symptoms can be classified into subjective and objective, including the following:

- fatigue, cachexia, weight loss,
- cyanosis, jaundice, pasty oedema of the lower limbs,
- shortness of breath, hyperventilation, presence of fluid in the pleural cavity,
- nocturia, oliguria,
- abdominal pain, constipation, ascites, diarrhoea,
- anxiety, fear, depressive symptoms,
- chest pain, palpitations, lowering blood pressure [8].

Triggers for the progression of heart failure:

- discontinuation of medication,
- frequent modification of therapy,
- infections,
- arrhythmias,
- hypertension [9].

Diagnosis of chronic heart failure is based on performing tests aimed at objective assessment of the body's condition. The basic tests performed in patients with suspected heart failure include the following: echocardiography, electrocardiography, chest X-ray, laboratory diagnostics, coronary angiography, computed tomography of the heart, and endomyocardial biopsy [10].

The therapy of chronic heart failure is focused on reducing the occurrence of somatic symptoms, preventing disease progression, reducing mortality, and improving the quality of life of patients and their families [11]. Treatment of heart failure uses many methods and techniques, including lifestyle modification, health education, pharmacological treatment, electrotherapy, laser therapy, cell therapy, or heart transplantation [12].

The aim of the study was to present the essence of nursing a patient with chronic heart failure, hospitalized in the cardiology department due to exacerbation of the symptoms of the disease.

METHODS, TECHNIQUES, AND RESEARCH TOOLS

The research method used in the work is the individual case method based on the nursing process. The following research techniques were used:

- a nursing interview,
- observation,
- analysis of medical records and information obtained from other specialists caring for the patient,
- measurement of basic vital signs.

During the study, the following tools were used to collect the research material:

- medical history,
- results of diagnostic tests,
- nursing interview questionnaire,
- patient observation sheet,
- fluid balance sheet,
- body mass index (BMI),
- Numerical Rating Scale (NRS) scale,
- Barthel scale,

- non-contact thermometer,
- blood pressure monitor,
- pulse oximeter.

CASE STUDY

The patient was aged 77 years, a widower, retired. His living conditions and financial situation were average. He maintained good relations with his family. He did not have any addictions. Burdened with chronic heart failure for 10 years, he was urgently admitted to the cardiology department due to exacerbation of somatic symptoms of heart failure – NYHA IV. Admission of the patient was preceded by laboratory tests of venous blood, monitoring of vital signs, and chest X-ray examination in the conditions of the Hospital Emergency Department.

At the time of admission to the cardiology ward, the patient's general condition was assessed as average, the occurrence of circulatory and respiratory system disorders, which did not directly pose a threat to life, was found. Undertaking physical activity by the patient contributed to the appearance of a number of unpleasant ailments, and the symptoms appeared even at rest. The nursing staff qualified the patient to the second category of nursing care and placed him in the intensive cardiological supervision room.

After the initial diagnosis of the patient's general condition, the ward doctor intensified the diuretic therapy – dyspnoea was reduced. On the second day of hospitalization, an infusion of pressor amines was introduced to maintain normal blood pressure and diuresis. Due to persistent shortness of breath, passive oxygen therapy was introduced using an oxygen mask with a reservoir – 3 litres per minute. The diagnostics carried out in the department revealed an enlarged left ventricular systolic dimension, significant aortic stenosis, and cardiac arrhythmias in the form of atrial fibrillation and ventricular extrasystole. Antiarrhythmic treatment was introduced. The patient was qualified for implantation of a cardioverter-defibrillator ICD.

During the patient's stay in the hospital, the re-education of body weight (–9 kg), improvement of general condition with the disappearance of dyspnoea, oedema, and restoration of sinus rhythm was noted. Conservative treatment of comorbidities was carried out. The total hospitalization time was 10 days. The patient was referred to a heart failure clinic.

Upon admission to the cardiology department, the physical examination revealed the following:

Baseline parameters: body height – 175 cm, body weight – 103 kg, BMI – 33.63, body temperature – 36.2°C, blood pressure – 115/73 mmHg, pulse – 124 bpm, saturation – 93%.

Circulatory system: Irregular, hard, alternating pulse. The presence of pasty oedema in the lower extremities. Pale pink skin.

Respiratory system: Hyperventilation with the presence of apnoea. Pathological breathing of the Cheyne-Stokes type. Abdominal breathing, normal smell of exhaled air, presence of dyspnoea at rest.

Nervous system: Full state of consciousness, logical thinking, verbal contact maintained, patient oriented allo- and autopsychically.

Functioning of the senses: Normal vision. Hearing, tactile sensation, and temperature normal. The patient complained of stabbing pain in the chest.

Digestive system: Eating and drinking normal. The act of swallowing normal. Constipation. Noticeable swelling in the abdomen.

Genitourinary system: Urine excretion disturbed – nocturia.

Skin: Good hygienic condition, noticeable trophic changes on the lower limbs.

Psychosocial diagnosis: Due to the chronic deterioration of physical exercise tolerance, the patient complained about the problem of social isolation. He was a deeply religious person. The patient and his family had numerous knowledge deficits related to the principles of proper self-control and appropriate assessment of emerging symptoms of exacerbation of the disease. The patient had a depressed mood and was concerned about his health.

NURSING PROCESS

The scope of nursing care provided to people with chronic heart failure focuses on the implementation of direct nursing functions and may be based on a partially compensatory system according to Dorothea Orem [13, 14].

The nursing process has been divided into the main spheres of human life in a holistic approach.

I. The biological sphere

Nursing diagnosis 1: *The risk of worsening haemodynamic changes, chest discomfort, and pain in the course of an attack of arrhythmia.*

Aim of nursing care: Reduction of symptoms resulting from cardiac arrhythmias, restoration of sinus rhythm, no symptoms associated with coronary insufficiency.

Nursing interventions:

- intensive cardiological supervision (connecting the patient to a cardiomonitor, measuring blood pressure, pulse, saturation),
- assessment of chest pain using pain rating scales (NRS, Visual Analogue Scale [VAS]),
- ensuring appropriate vascular access,
- supply of antiarrhythmic drugs and analgesics as prescribed by the doctor,
- calming down and informing the patient about the actions taken,

- participation in electrotherapy (electrical cardioversion).

Assessment of the effects of care: The patient's haemodynamic status is stabilized. The patient is calm, does not feel pain in the chest. The ECG record shows a regular sinus rhythm (60-70 beats per minute).

Nursing diagnosis 2: *Dyspnoea at rest in the course of exacerbation of chronic heart failure.*

Aim of nursing care: Reducing the severity of dyspnoea, reducing the occurrence of respiratory disorders, restoring proper oxygenation of the body.

Nursing interventions:

- assessment of the severity of dyspnoea using the available scales,
- measurement of saturation,
- performance and evaluation of a blood gas test,
- assessment of the state of consciousness and skin colour,
- limitation of physical effort,
- positioning the patient in a sitting position in a forward bend with supported upper limbs and lowered lower limbs,
- supply of oxygen for breathing,
- taking breath measurements every 15 minutes,
- monitoring vital signs,
- limiting the supply of fluids to 1.5-2 litres per day,
- participation in pharmacotherapy as prescribed by a physician,
- use of loose cotton clothing,
- reducing the level of anxiety.

Assessment of the effects of care: The severity of dyspnoea was reduced. Calm patient, self-service efficient. 98% saturation level.

Nursing diagnosis 3: *Discomfort caused by enlarged abdominal circumference as a result of fluid accumulation in the peritoneal cavity.*

Aim of nursing care: Reducing the symptoms of discomfort in the abdominal cavity, balancing the body's water and electrolytes. Improving the patient's well-being.

Nursing interventions:

- observation and measurement of abdominal oedema,
- implementation of a low-sodium diet < 2 g per day,
- participation in pharmacological treatment as ordered by a doctor,
- blood pressure control, fluid balance, observation for dehydration,
- participation in therapeutic paracentesis.

Assessment of the effects of care: Reducing the symptoms of ascites. Improving the patient's well-being.

Nursing diagnosis 4: *The patient's malaise associated with severe oedema of the lower limbs. The risk of developing skin changes in the area of oedema.*

Aim of nursing care: Reducing the intensity of oedema and preventing complications in the form of trophic changes in the skin.

Nursing interventions:

- assessment of the size and location of oedemas,
- weight control,
- fluid balance,
- caring for swollen skin in accordance with the guidelines (thorough and gentle washing with a pH 5.5 detergent, drying, oiling the skin, avoiding injuries),
- prevention of constipation.

Assessment of the effects of care: Oedema in the lower limbs decreased.

Nursing diagnosis 5: *Constipation caused by organ blood flow disorder as a consequence of heart failure.*

Aim of nursing care: Restoration of the proper act of defecation.

Nursing interventions:

- interviewing the patient about bowel movements,
- performing a physical examination of the abdomen,
- using a high-fibre diet,
- providing oral laxatives,
- performing intrarectal procedures,
- implementing external anal sphincter exercises,
- educating the patient on the correct diet.

Assessment of the effects of care: The normal rhythm of bowel movements was restored. The patient passes stool of the correct consistency.

II. Mental sphere (emotional and cognitive)

Nursing diagnosis 6: *Depressed mood caused by a negative reaction to the current health situation.*

Aim of nursing care: Reducing emotional tension, improving well-being and attitude to the therapeutic process.

Nursing interventions:

- assessment of the patient's emotional state,
- establishing therapeutic contact with the patient,
- ensuring physical and mental safety,
- ensuring conditions of peace and quiet,
- allowing the patient to contact his family, chaplain, and a psychologist,
- using relaxation techniques.

Assessment of the effects of care: Improvement of the patient's well-being. The patient actively participates in the therapeutic process.

Nursing diagnosis 7: *Discomfort and malaise related to dependence on the help of others.*

Aim of nursing care: Reducing the patient's unpleasant feelings related to the deficit of self-care, increasing self-service efficiency.

Nursing interventions:

- assessment of the patient's self-service capacity using the Barthel scale,

- assessment of the emotional state,
- motivating the patient to actively participate in the therapeutic process,
- implementation of elements of early rehabilitation,
- encouraging the patient to use auxiliary equipment.

Assessment of the effects of care: Mood improvement, acceptance of the current state of health.

III. The socio-spiritual sphere

Nursing diagnosis 8: *The feeling of alienation and loneliness associated with the inability to actively participate in social life.*

Aim of nursing care: Counteracting social alienation, facilitating interaction with the environment.

Nursing interventions:

- assessment of the patient's psychosocial situation,
- help in dealing with the disease,
- facilitating the establishment and maintenance of social contacts,
- education of the patient on how to cope with stress,
- providing a safe environment,
- showing acceptance, patience, and understanding.

Assessment of the effects of care: The feeling of isolation and loneliness has been reduced.

Nursing diagnosis 9: *Spiritual anguish caused by the inability to participate in religious ceremonies.*

Aim of nursing care: Reducing the patient's spiritual pain, encouraging him to continue practicing his faith in a changed health situation.

Nursing interventions:

- establishing therapeutic contact with the patient through an open and friendly conversation,
- supporting the patient in his religious beliefs,
- enabling the patient to contact a clergyman,
- ensuring intimacy conditions during religious practices.

Assessment of the effects of care: The patient does not show spiritual suffering. He willingly uses alternative sources of practicing his faith.

SUMMARY AND CONCLUSIONS

The presented case study shows a patient with chronic heart failure in the phase of exacerbation of the symptoms of the disease, requiring hospitalization in the cardiology department. Nursing staff caring for a cardiac patient should be distinguished by professionalism, careful observation, quick decision making, and knowledge about broadly understood cardiovascular diseases.

Patients with chronic heart failure have various clinical symptoms, which differ in nature depending on the phase and period of the disease, causing different care problems. Patients complain of several somatic complaints, such as shortness of breath, fatigue, reduced exercise tolerance, lower limb oedema,

and ascites. The remission stage of the disease minimizes the presence of somatic complaints, while generating problems related to the mental sphere and anxiety about further prognosis.

Long-term disturbance of the normal function of the heart muscle significantly affects the patient's physical capacity and self-care capabilities. The degrading impact of the disease on the whole organism contributes to numerous problems preventing proper existence, which leads to permanent disability dependent on the help of third parties.

The introduction of various educational activities and the implementation of comprehensive cardiac rehabilitation is the main therapeutic pillar of heart failure. Multifaceted activities have a positive effect on minimizing knowledge deficits, severe complications, or premature death. Holistic rehabilitation programs improve patients' performance, positively influencing long-term prognosis.

Chronic heart failure in the advanced phase is an obstacle to the fulfilment of social roles for the affected person. It disrupts activity and sociological productivity.

Disclosure

The author declares no conflict of interest.

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