

NURSING CARE FOR PATIENTS WITH CONGESTIVE HEART FAILURE AT RSUP

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ABSTRACT

Congestive Heart Failure (CHF) remains a critical global health problem characterized by an increasing incidence rate and poor prognosis worldwide. This study aimed to explore and execute a comprehensive nursing care process for Mrs. S, a patient diagnosed with CHF in the RA3 Inpatient Ward at RSUP Haji Adam Malik Medan. The method employed a descriptive case study approach documenting the nursing process, including holistic assessment, diagnosis formulation, intervention planning, implementation, and clinical evaluation. The assessment revealed primary clinical problems consisting of severe dyspnea, extreme fatigue, peripheral edema, and compromised activity tolerance due to standard myocardial contractility decline. Five core nursing diagnoses were formulated: decreased cardiac output, activity intolerance, hypervolemia, impaired skin integrity, and impaired gas exchange. Tailored nursing interventions were executed over 3x24 hours, integrating intensive cardiovascular monitoring, fluid restriction, gradual activity progression, and patient health education. The clinical results demonstrated significant physiological improvements: a marked reduction in dyspnea, stable hemodynamic parameters, successful fluid volume balance stabilization, and improved daily functional activity tolerance. In conclusion, structured and continuous evidence-based nursing care plays a pivotal role in optimizing cardiac performance, managing fluid overload, preventing severe readmissions, and enhancing the overall clinical outcomes and life quality of patients struggling with advanced congestive heart failure.

Keywords: *Congestive Heart Failure, Myocardial Contractility, Nursing Care, Fluid Balance, Activity Intolerance*

Introduction

The heart is one of the most vital organs in the human body, functioning continuously to pump and circulate blood throughout the entire systemic circulation. This function is highly crucial so that organs and body tissues can receive the essential oxygen and nutrients required to run their metabolic functions properly. However, several pathological factors can cause severe disruption to the heart, rendering this organ unable to function normally. This pathological dysfunction is universally referred to as heart failure. Congestive Heart Failure (CHF) is a critical cardiovascular disease whose incidence keeps scaling up and whose prevalence

becomes significantly wider across communities. The mortality risk of heart failure varies depending on the severity; mild cases carry a 5–10% annual mortality risk, whereas advanced cases can spike up to 30–40%. A primary challenge in managing CHF is the high rate of hospital readmissions, even when patients have received outpatient medical therapy. This is triggered by complications, patient non-compliance with drug regimens or lifestyle modifications, and inadequate post-discharge monitoring.

Globally, the Global Health Data Exchange (GHDx) reported that heart failure reached 64.34 million cases with 9.91 million deaths in 2020. In developed nations, the prevalence affects 1–2% of the adult population. In Indonesia, Riskesdas data indicated a heart disease prevalence of 1.5% (1,017,290 people). Specifically, the prevalence in North Sumatra reached 1.3% or approximately 55,351 people. Statistics from RSUP H. Adam Malik Medan showed an alarming upward trend in CHF cases in the Integrated Heart Center: 221 cases in 2021, 469 cases in 2022, and reaching 493 cases in 2023. This study aimed to provide a comprehensive and structured nursing care process for Mrs. S who suffered from Congestive Heart Failure (CHF) in the RA3 Inpatient Ward at RSUP Haji Adam Malik.

Research Method

This research utilized a descriptive case study design focusing on clinical nursing care application. The subject was a single patient, Mrs. S, diagnosed with Congestive Heart Failure (CHF). The study was conducted in the RA3 Inpatient Ward at RSUP Haji Adam Malik Medan. Data collection methods encompassed a full physical examination, structured patient and family interviews, clinical observations, and an intensive review of medical records. The gathered data were processed through the five standard phases of the nursing process: comprehensive assessment, diagnosis formulation based on patient responses, nursing care intervention mapping, active implementation, and iterative clinical evaluation against pre-set outcome.

Result

The comprehensive nursing care process for Mrs. S was carried out over a 3x24-hour hospitalization period in the RA3 Ward of RSUP Haji Adam Malik Medan. The initial assessment phase indicated that the patient presented with classic clinical manifestations of advanced Congestive Heart Failure (CHF). The primary subjective data reported by the patient included severe dyspnea that worsened significantly even upon minimal physical

exertion, a state of constant physical fatigue, and visible swelling around both ankles. Objectively, the physical examination revealed grade 2 peripheral pitting edema in the lower extremities, an elevated heart rate (tachycardia), fluctuating blood pressure parameters that deviated by more than 20% from her baseline resting state, and a decreased oxygen saturation level (SpO₂) reaching 92% on room air. Diagnostic evaluations via electrocardiography (EKG) confirmed ventricular hypertrophy and electrical conduction alterations, while the chest X-ray revealed clear cardiomegaly accompanied by pulmonary vascular congestion.

Based on the accumulated clinical data, five priority nursing diagnoses were formulated to guide subsequent interventions. These diagnoses consisted of decreased cardiac output related to altered myocardial contractility, activity intolerance related to an imbalance between oxygen supply and demand, hypervolemia related to a compromised fluid regulatory mechanism, impaired gas exchange related to alveolar-capillary membrane changes, and impaired skin integrity related to decreased physical mobility from prolonged bed rest compounded by peripheral edema.

Following the execution of the integrated nursing care plan over three consecutive days, the final clinical

evaluations demonstrated highly significant and positive advancements. Regarding the diagnosis of decreased cardiac output, successful outcomes were indicated by a marked recovery in cardiac pumping adequacy, a noticeable reduction in the patient's shortness of breath, and the progressive stabilization of vital signs, including blood pressure and pulse rate, within normal ranges. The problem of activity intolerance also showed favorable functional progress; the patient's threshold for daily physical activities enhanced gradually, her experience of extreme exhaustion during basic movements was significantly minimized, and her rest and sleep patterns became substantially more restful and restorative.

In relation to the hypervolemia diagnosis, collaborative and independent nursing actions successfully restored systemic fluid balance back to an optimal physiological range. This was objectively verified by the stabilization of the patient's daily body weight, a balanced fluid intake matching the volume of urinary output, and the complete resolution of the lower limb edema. The stabilization of fluid volume directly contributed to resolving the impaired gas exchange; the patient's dyspnea was minimized, adventitious breath sounds (crackles) were no longer audible upon lung auscultation, oxygen saturation levels stabilized above 95%, and the mild dizzy spells reported by the patient were fully resolved. Lastly, concerning skin integrity, the consistent implementation of position-changing protocols combined with localized tissue perfusion enhancement successfully prevented pressure-induced tissue breakdown. Consequently, the cutaneous surfaces across the patient's back and lower extremities remained completely intact, clean, and healthy without any secondary skin breakdown.

Discussion

An analysis of the nursing care process for Mrs. S underscores that decreased cardiac output functions as the

primary pathophysiology driving and triggering all secondary nursing diagnoses, including hypervolemia and activity intolerance. When the myocardial muscle experiences a progressive decline in contractility, the heart loses the mechanical capability to maintain an adequate cardiac output necessary to sustain systemic circulatory needs. This hypoperfusion state is recognized by the body as an emergency signal, which consequently activates the sympathetic nervous system and the hormonal cascade of the Renin-Angiotensin-Aldosterone System (RAAS). Although this hormonal compensation initially attempts to defend peripheral blood pressure via vasoconstriction, its long-term detrimental effect involves massive renal retention of sodium and water due to a reduced glomerular filtration rate.

This uncontrolled fluid retention manifests clinically as hypervolemia. The fluid accumulating within the intravascular space undergoes a shift in hydrostatic pressure, driving the movement of fluid into the interstitial spaces, which becomes apparent as dependent edema in the lower extremities and vascular congestion within the lungs. The presence of fluid within the alveoli disrupts the normal diffusion of oxygen across the alveolar-capillary membrane, thereby causing impaired gas exchange and the distressing symptom of dyspnea experienced by the patient.

The successful management of hypervolemia in Mrs. S was achieved through a highly strict and disciplined fluid management approach over 3x24 hours. Independent nursing implementations, such as restricting fluid intake to a maximum of 1000–1200 ml/day and minimizing dietary sodium intake, were combined collaboratively with the administration of potent loop diuretics, specifically Furosemide. The mechanism of this diuretic effectively blocks sodium and chloride reabsorption in the thick ascending loop of Henle, triggering rapid diuresis to eliminate excess circulatory volume. According to Frank-Starling's law of the heart, reducing this intravascular volume directly diminishes the cardiac preload.

When the stretching of the myocardial fibers caused by fluid overload is reduced to an optimal point, ventricular pumping action becomes far more efficient, pulmonary hydrostatic pressure drops, and alveolar oxygen exchange normalizes. This mechanism was clinically evidenced by the resolution of the patient's shortness of breath and the recovery of her oxygen saturation values.

On the other hand, the problem of activity intolerance faced by Mrs. S required a balanced energy management strategy. The decline in cardiac output meant that the patient's skeletal muscles suffered from a chronic shortage of oxygen supply; therefore, even minimal physical exertion forced cellular metabolism to shift toward anaerobic pathways, producing lactic acid and inducing extreme fatigue. The applied nursing strategies focused on minimizing energy expenditure during the acute phase through scheduled bed rest, creating a quiet macro-environment to facilitate deep sleep, and gradually training physical mobilization. This progression advanced from passive and active range of motion exercises in bed to a supported sitting position. This energy restoration approach successfully prevented unnecessary spikes in myocardial oxygen demand, provided the cardiac muscle with time to adapt, and progressively elevated the patient's physical tolerance threshold for executing activities of daily living.

Lastly, the interventions addressing impaired skin integrity demonstrate the profound significance of preventative measures within cardiovascular nursing care. Patients with peripheral or anasarca edema possess highly fragile skin tissue that is extremely sensitive to mechanical pressure, because the accumulation of interstitial fluid impedes the capillary flow of micronutrients and oxygen to epidermal cells. Coupled with limited mobility caused by activity intolerance, bony prominences such as the sacrum and heels are at high risk for localized tissue ischemia that induces pressure ulcers. The consistent implementation of a

turning protocol every two hours, paired with the application of mild moisturizing lotions to preserve skin elasticity, proved highly effective in redistributing body surface pressure evenly. The reduction of localized edema achieved through successful fluid management also simultaneously restored skin capillary perfusion, thereby maintaining the structural integrity of Mrs. S's skin completely intact throughout her critical hospital stay.

Conclusion and Suggestion

In conclusion, the application of a structured 3x24-hour nursing care process for Mrs. S suffering from Congestive Heart Failure (CHF) achieved its clinical objectives. The customized nursing interventions effectively addressed cardiac output deficiencies, eliminated hypervolemia, stabilized gas exchange, prevented skin breakdown, and enhanced the patient's daily activity tolerance.

It is operationally suggested that nurses in the Integrated Heart Center at RSUP Haji Adam Malik sustain high-quality monitoring of fluid charts, maintain strict position-changing protocols for edematous patients, and implement early physical activity education. Future research should explore the long-term impacts of post-discharge structured home walking exercises and self-care compliance programs to prevent readmissions and improve the long-term survival rates of CHF patients within the community.

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