VIMS Journal of Health Research and Innovations

Volume 1 · Issue 1 · 2026
eISSN 0000-0000

CASE REPORT

COMPREHENSIVE NURSING CARE OF A PATIENT WITH CONGESTIVE HEART FAILURE: A CASE REPORT

Swapnil Tambe [1*]

[1] *Assistant Professor, S. S. E. V. P. College of Nursing, Pravara Institute of Medical Sciences, Loni Bk., Maharashtra, India*

*Correspondence: Swapnil Tambe · tambeswapnil2708@gmail.com

ABSTRACT

Background: Congestive heart failure (CHF) is a clinical syndrome in which structural or functional abnormalities of the heart impair ventricular filling or ejection, leading to symptoms and signs of congestion and reduced exercise capacity. Careful assessment, appropriate medical treatment and comprehensive nursing care are essential to relieve symptoms, prevent complications and improve quality of life.

Case presentation: This report describes a 62-year-old man admitted to the medical ward of a tertiary care hospital with congestive heart failure, who presented with breathlessness, orthopnoea, fatigue, bilateral pedal oedema, reduced activity tolerance and an oxygen saturation (SpO_2) of 89%. Assessment comprised history-taking, physical examination, laboratory investigations and cardiac diagnostic evaluation. Care was planned and delivered using the nursing process alongside the prescribed medical treatment.

Nursing management: The priority nursing diagnoses were decreased cardiac output, impaired gas exchange, excess fluid volume, activity intolerance and deficient knowledge about the disease and its management. Interventions included monitoring of vital signs and cardiorespiratory status, positioning and oxygen therapy, monitoring of fluid balance and body weight, graded activity and rest, administration of prescribed medications, and education on medication adherence, prescribed sodium and fluid restriction, daily weight monitoring, warning symptoms and follow-up.

Outcome: During hospitalisation, the pulse rate fell from 108 to 84 beats/min, the respiratory rate from 28 to 20 breaths/min and the blood pressure from 150/90 to 130/80 mmHg. SpO_2 rose from 89% to 96%, body weight decreased by 3 kg, pedal oedema regressed from +++ to +, orthopnoea resolved, and activity tolerance improved from poor to moderate.

Conclusion: This case illustrates how systematic assessment, continuous monitoring, individualised nursing interventions and patient education, delivered alongside medical treatment, can support symptom control, prevention of complications and recovery of functional status in congestive heart failure.

Keywords: *Congestive heart failure; Nursing process; Nursing care; Patient education*

INTRODUCTION

Congestive heart failure (CHF) is a clinical syndrome in which structural or functional cardiac abnormalities impair ventricular filling or ejection, producing pulmonary or systemic congestion with dyspnoea, orthopnoea, fatigue, exercise intolerance and peripheral oedema. Its main causes include coronary artery disease, long-standing hypertension, valvular and rheumatic heart disease, cardiomyopathy, diabetes mellitus and obesity. The universal definition requires symptoms and/or signs of a cardiac abnormality corroborated by elevated natriuretic peptide levels or objective evidence of congestion, and classifies heart failure by left ventricular ejection fraction (LVEF) as reduced (HFrEF; ≤40%), mildly reduced (HFmrEF; 41–49%) or preserved (HFpEF; ≥50%) [1]. The 2026 European Society of Cardiology (ESC) guidelines have simplified this to two phenotypes, HFrEF (LVEF <50%) and HFpEF (LVEF ≥50%),

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

and replaced the term “acute heart failure” with “decompensated heart failure” [2].

An estimated 64 million people worldwide live with heart failure [3,4]. Their number roughly doubled between 1990 and 2021, when the age-standardised prevalence was 676.68 per 100,000 population [5], and the global incidence is about 2.72 cases per 1,000 person-years, although these data come mainly from high-income countries [6]. Prevalence is expected to keep rising because of population ageing, the growing burden of cardiovascular risk factors and improved survival after myocardial infarction [4].

In India, an estimated 1.3–4.6 million people live with heart failure, with 491,600 to 1.8 million new cases each year [7]. Indian patients are 7–10 years younger than those in international registries [8], and hospital-based registries report mean ages of about 56–62 years. In the ICMR–NCDIR heart failure registry of 6,018 patients from five small- to medium-sized cities, ischaemic heart disease was the commonest cause, most patients came from rural areas, and 90-day mortality reached 19% among those aged 65 years or older [9]. The Cardiological Society of India has called for country-specific approaches to prevention, early diagnosis and long-term management [10]. No population-based estimates are available for Maharashtra, but hospitals in Mumbai and Thane contributed patients to the national registry [8], and among 90 patients presenting with acute decompensated heart failure to an emergency department in Pune, the mean age was 61.1 ± 16.3 years and 56.7% were men [11].

Management of heart failure requires early recognition, treatment of precipitating and underlying causes, appropriate pharmacological therapy, monitoring of fluid and electrolyte balance, lifestyle modification and continuing patient education [2]. Nurses play a central role in monitoring cardiorespiratory status, detecting deterioration, administering prescribed therapy, maintaining fluid balance, promoting adherence and teaching patients and families about self-care and warning signs [12]. This case report describes the nursing care of a patient admitted with decompensated heart failure, organised according to the nursing process: assessment, nursing diagnosis, planning, implementation and evaluation.

CASE PRESENTATION

Patient information

A 62-year-old man was admitted to the medical ward with progressive breathlessness for five days, orthopnoea for three days, bilateral lower-limb swelling for one week, and increasing fatigue. Relevant history included a 10-year history of hypertension and an 8-year history of type 2 diabetes mellitus; a previous admission for worsening heart failure 12 months earlier; no current tobacco use; occasional alcohol consumption; and treatment before admission with amlodipine and metformin, with reported inconsistent adherence.

Clinical findings

On admission the blood pressure was 150/90 mmHg, pulse rate 108 beats/min, respiratory rate 28 breaths/min and SpO_2 89% on room air. There was grade +++ bilateral pedal oedema. The patient was alert and oriented but dyspnoeic at rest, with elevated jugular venous pressure, bilateral basal inspiratory crackles, normal first and second heart sounds with a third heart sound, and New York Heart Association (NYHA) functional class IV symptoms at presentation.

Diagnostic assessment

Echocardiography showed left ventricular ejection fraction of 35%, left ventricular dilatation, global hypokinesia and mild functional mitral regurgitation. Chest radiography showed cardiomegaly and pulmonary vascular congestion. Electrocardiography revealed sinus tachycardia with left ventricular hypertrophy. Illustrative laboratory values were haemoglobin 12.4 g/dL, serum creatinine 1.3 mg/dL, sodium 136 mmol/L, potassium 4.2 mmol/L and NT-proBNP 2,450 pg/mL. The final diagnosis was decompensated heart failure with reduced ejection fraction, with longstanding hypertensive heart disease as a likely contributing factor.

Medical treatment

In this simulated scenario, prescribed treatment comprised intravenous furosemide 40 mg twice daily initially, transitioned to oral furosemide 40 mg once daily after clinical improvement; oral carvedilol 3.125 mg twice daily, enalapril 2.5 mg twice daily and spironolactone 25 mg once daily were administered with blood pressure, renal

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

function and serum potassium monitoring; oxygen by nasal cannula at 3 L/ min initially; and sodium and fluid restriction as prescribed (approximately 2 g sodium/day and 1.5 L fluid/day, adjusted to clinical status).

Timeline and follow-up

The patient was in hospital for 5 days. On days 1–2, oxygen therapy, diuresis and close monitoring were prioritised. By day 3, breathlessness and oedema had decreased, oxygen was weaned as tolerated and assisted mobilisation began. On day 4, oral diuretic therapy was introduced, and by day 5 the patient could perform basic activities with rest periods. At discharge, the simulated discharge plan included the prescribed oral heart-failure medicines, daily weight monitoring, recognition of warning symptoms, adherence counselling, an individualised sodium/fluid plan, and review within one week with renal function and electrolyte testing.

NURSING CARE

Nursing assessment

Nursing assessment was based on patient interview, direct observation, physical examination, and review of the medical and nursing records and of laboratory and diagnostic reports. The health history covered presenting complaints, history of present illness, previous medical and surgical history, medication history, family history, dietary pattern, lifestyle and cardiovascular risk factors.

Physical assessment included the general condition, vital signs, SpO_2, cardiovascular and respiratory status, peripheral oedema, jugular venous distension, activity tolerance and fluid balance. The investigations reviewed included the complete blood count, renal function tests, serum electrolytes, electrocardiography, chest radiography and echocardiography with assessment of LVEF. The prescribed medical treatment, including medications, oxygen therapy, and dietary and fluid management, was documented alongside the nursing record.

Nursing diagnoses and interventions

Nursing diagnoses were formulated from the patient's subjective and objective findings. Five priority diagnoses were identified: decreased cardiac output, impaired gas exchange, excess fluid volume, activity intolerance, and deficient knowledge about the disease and its management. Interventions were individualised to the patient's condition and the medical treatment plan.

Heart rate, respiratory rate, blood pressure, SpO_2, breathlessness, oedema, fluid intake and output, body weight, activity tolerance and response to treatment were monitored as clinically indicated. Nursing interventions included positioning for respiratory comfort, administration of oxygen and medications as prescribed, maintenance of fluid balance, promotion of rest, monitoring for complications, and assistance with activities of daily living. Health education covered medication adherence, prescribed sodium and fluid restriction, diet, activity and rest, daily weight monitoring, recognition of worsening symptoms, regular follow-up and lifestyle modification.

Evaluation

The patient's response to care was evaluated at regular intervals by comparing clinical findings with the expected outcomes. Progress in dyspnoea, oedema, oxygenation, activity tolerance and overall comfort was documented systematically.

OUTCOMES

On admission, the patient had breathlessness, orthopnoea, bilateral pedal oedema, fatigue, reduced activity tolerance and reduced oxygen saturation. Medical and nursing management was provided throughout hospitalisation, and clinical parameters were monitored regularly. Respiratory status, oxygen saturation, heart rate, peripheral oedema, fluid balance and activity tolerance all improved (Table 1). The nursing diagnoses, interventions and outcomes are summarised in Table 2.

Table 1. Clinical parameters on admission and at discharge (day 5)

Clinical parameter	On admission	At discharge (day 5)	Interpretation

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

Clinical parameter	On admission	At discharge (day 5)	Interpretation
Blood pressure	150/90 mmHg	130/80 mmHg	Improved
Pulse rate	108 beats/min	84 beats/min	Improved
Respiratory rate	28 breaths/min	20 breaths/min	Improved
SpO_2	89%	96%	Improved
Body weight	72 kg	69 kg	Reduced by 3 kg
Bilateral pedal oedema	+++	+	Reduced
Breathlessness	Severe	Mild	Improved
Orthopnoea	Present	Absent	Resolved
Activity tolerance	Poor	Moderate	Improved
Fluid balance	Positive (fluid retention)	Improved balance	Improved

SpO_2, peripheral oxygen saturation.

Table 2. Nursing diagnoses, interventions and outcomes

Nursing diagnosis	Main nursing interventions	Patient outcome
Decreased cardiac output	Monitored blood pressure, pulse, cardiac status and response to medications; provided adequate rest	Pulse rate fell from 108 to 84 beats/min; blood pressure stabilised at 130/80 mmHg
Impaired gas exchange	Monitored respiratory rate and SpO_2; maintained semi- to high-Fowler's position; administered oxygen as prescribed	SpO_2 rose from 89% to 96%; respiratory rate fell from 28 to 20 breaths/min
Excess fluid volume	Monitored intake and output, body weight and oedema; maintained prescribed sodium and fluid restriction	Body weight fell by 3 kg; oedema decreased from +++ to +
Activity intolerance	Provided rest periods and increased activity gradually according to tolerance	Activity tolerance improved from poor to moderate
Deficient knowledge	Educated the patient on medications, diet, fluid restriction, daily weight monitoring and warning symptoms	Patient demonstrated improved understanding of self-care

SpO_2, peripheral oxygen saturation.

DISCUSSION

This case report describes clear clinical improvement in a patient with congestive heart failure who received medical treatment together with individualised nursing care. On admission, the patient had tachycardia (108 beats/ min), tachypnoea (28 breaths/min), an SpO_2 of 89%, a blood pressure of 150/90 mmHg, severe breathlessness, orthopnoea and grade +++ bilateral pedal oedema. After management, the pulse rate fell to 84 beats/min, the respiratory rate to 20 breaths/min and the blood pressure to 130/80 mmHg, while SpO_2 rose to 96%.

The 3- kg reduction in body weight, together with the regression of pedal oedema from + + + to +, indicates a meaningful reduction in fluid overload. Relief of congestion is the principal aim of treatment in decompensated heart failure and is usually achieved with loop diuretics, guided by monitoring of symptoms, body weight, fluid balance and renal function [2]. Accurate daily weights and intake–output records, which are core nursing responsibilities, therefore

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

provide an essential measure of the response to treatment.

The improvement in oxygen saturation and respiratory rate probably reflects the combined effects of the prescribed medical treatment, oxygen administration, positioning, close monitoring and relief of pulmonary congestion. A semi-Fowler's or Fowler's position eases breathing by reducing venous return and allowing greater diaphragmatic excursion. Continuous respiratory monitoring is particularly important in heart failure, because pulmonary congestion can cause dyspnoea, orthopnoea, hypoxaemia and reduced exercise tolerance.

Patient education was a central part of care in this case. Self-care, encompassing medication adherence, recognition and response to worsening symptoms, daily weight monitoring, appropriate diet and physical activity, is a key determinant of outcomes in heart failure, and the Heart Failure Association of the ESC recommends that it be taught and reinforced at every contact [12]. Advice on sodium and fluid restriction should be individualised and given as prescribed: in the SODIUM-HF trial, reducing dietary sodium below 100 mmol per day did not reduce clinical events in ambulatory patients with heart failure [13]. More broadly, a Cochrane review found that case-management and multidisciplinary disease-management interventions, many of them nurse-led, probably reduce readmissions for heart failure and may reduce mortality [14].

These findings are consistent with those of Jumpasit, who compared the nursing care of two outpatients with heart failure at Trang Hospital, Thailand [15]. The first patient presented with chest pain, palpitations and fatigue on exertion (New York Heart Association functional class II) and underwent heart valve replacement. The second patient declined coronary angiography. The two patients differed in their perception of the illness and in their self-care. That study emphasised systematic nursing assessment, monitoring of heart failure symptoms, patient education and the management of underlying risk factors, and concluded that nurses must assess patients' knowledge and teach them to recognise changes in their symptoms and to care for themselves [15].

This report has several limitations. It describes a single patient, so its findings cannot be generalised. The improvement observed resulted from medical and nursing care given together, and the contribution of nursing interventions alone cannot be separated from that of drug therapy. The outcomes described were short-term and in-hospital, and the patient's course after discharge, including readmission, was not assessed.

CONCLUSION

In this patient with congestive heart failure, comprehensive nursing care delivered alongside medical treatment was associated with improvement in vital signs, oxygenation, fluid status, oedema and activity tolerance. Systematic assessment, continuous monitoring, careful fluid management, administration of prescribed treatment and patient education together contributed to symptom relief, prevention of complications and recovery of function. Structured self-care education and follow-up after discharge remain essential to sustain these gains and to reduce the risk of readmission.

ACKNOWLEDGEMENT

The author thanks the patient and family members for their cooperation and participation in this case report, and acknowledges the support and guidance of the nursing and medical staff during the period of care.

FUNDING

No external funding was received for this case report.

CONFLICT OF INTEREST

The author declares no conflict of interest.

PATIENT CONSENT

Written informed consent for publication of this case report, including clinical details, was obtained from the patient. The patient’s identity has been protected, and the confidentiality of personal and clinical information was maintained throughout, in accordance with institutional requirements.

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI

References

1. Bozkurt B, Coats AJS, Tsutsui H, Abdelhamid CM, Adamopoulos S, Albert N, et al. Universal definition and classification of heart failure: a report of the Heart Failure Society of America, Heart Failure Association of the European Society of Cardiology, Japanese Heart Failure Society and Writing Committee of the Universal Definition of Heart Failure. Eur J Heart Fail. 2021;23(3):352–80. doi:10.1002/ejhf.2115.
2. Køber L, Adamo M, Ruwald AC, Tomasoni D, et al.; ESC Scientific Document Group. 2026 ESC Guidelines for the management of heart failure. Eur Heart J. 2026;47(38):5346–457. doi:10.1093/eurheartj/ehag100.
3. Savarese G, Becher PM, Lund LH, Seferovic P, Rosano GMC, Coats AJS. Global burden of heart failure: a comprehensive and updated review of epidemiology. Cardiovasc Res. 2023;118(17):3272–87. doi:10.1093/cvr/cvac013.
4. Shahim B, Kapelios CJ, Savarese G, Lund LH. Global public health burden of heart failure: an updated review. Card Fail Rev. 2023;9:e11. doi:10.15420/cfr.2023.05.
5. Yan S, Deng P, Chai K, Wang S, Hu K, Yang J, et al. Global, regional, and national burden of heart failure and its risk factors between 1990 and 2021 and projections to 2050: an analysis of the Global Burden of Disease Study. Eur Heart J Qual Care Clin Outcomes. 2025;11(7):1144–54. doi:10.1093/ehjqcco/qcaf054.
6. Ballena-Caicedo J, Zuzunaga-Montoya FE, Valladolid-Sandoval LAM, Bautista Zuta JC, Valladares-Garrido MJ, Gutierrez De Carrillo CI, et al. Global heart failure incidence rate: an updated systematic review and meta-analysis. Front Cardiovasc Med. 2026;13:1714070. doi:10.3389/fcvm.2026.1714070.
7. Huffman MD, Prabhakaran D. Heart failure: epidemiology and prevention in India. Natl Med J India. 2010;23(5):283–8.
8. Jayagopal PB, Sastry SL, Nanjappa V, Abdullakutty J, Joseph J, Vaidyanathan PR, et al. Clinical characteristics and 30-day outcomes in patients with acute decompensated heart failure: results from Indian College of Cardiology National Heart Failure Registry (ICCNHFR). Int J Cardiol. 2022;356:73–8. doi:10.1016/j.ijcard.2022.03.021.
9. Huliyappa D, Srinivas V, Kulothungan V, Edwin R, Sadananda KS, Barik RC, et al. Clinical characteristics, treatment patterns, & outcomes of heart failure: a comparative analysis across age groups from the heart failure registry in India. Indian J Med Res. 2025;161(6):609–16. doi:10.25259/IJMR_1931_2024.
10. Guha S, Harikrishnan S, Ray S, Sethi R, Ramakrishnan S, Banerjee S, et al. CSI position statement on management of heart failure in India. Indian Heart J. 2018;70 Suppl 1:S1–72. doi:10.1016/j.ihj.2018.05.003.
11. Shinde V, Thakkar D, Mavudelli SJ. The clinical profile of patients with acute decompensated heart failure presenting to the emergency department at a tertiary care hospital in India. Cureus. 2024;16(8):e67773. doi:10.7759/cureus.67773.
12. Jaarsma T, Hill L, Bayes-Genis A, La Rocca HPB, Castiello T, Čelutkienė J, et al. Self-care of heart failure patients: practical management recommendations from the Heart Failure Association of the European Society of Cardiology. Eur J Heart Fail. 2021;23(1):157–74. doi:10.1002/ejhf.2008.
13. Ezekowitz JA, Colin-Ramirez E, Ross H, Escobedo J, Macdonald P, Troughton R, et al. Reduction of dietary sodium to less than 100 mmol in heart failure (SODIUM-HF): an international, open-label, randomised, controlled trial. Lancet. 2022;399(10333):1391–400. doi:10.1016/S0140-6736(22)00369-5.
14. Takeda A, Martin N, Taylor RS, Taylor SJC. Disease management interventions for heart failure. Cochrane Database Syst Rev. 2019;1:CD002752. doi:10.1002/14651858.CD002752.pub4.
15. Jumpasit J. Nursing care of patients with heart failure: case study. Acad J Mahasarakham Prov Public Health Off. 2024;8(15):238–62.

© Authors 2026 | This is an Open Access article CC-BY-SA 4.0. VJHRI