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Research Article

ANALYSIS OF COMORBIDITIES AND GLOBAL SCORES IN PATIENTS WITH HEART FAILURE WITH PRESERVED EJECTION FRACTION: A STUDY OF 80 CASES

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Abstract

Background: Heart failure with preserved ejection fraction (HFpEF) is a clinical syndrome characterized by heart failure symptoms despite normal or near-normal left ventricular ejection fraction (LVEF). HFpEF accounts for approximately 50% of heart failure cases, with significant associated morbidity and mortality. **Objective:** This study aims to analyze the management of HFpEF in 80 patients, using global scoring systems to evaluate disease severity and treatment effectiveness. **Methods:** The study included 80 patients with a confirmed diagnosis of HFpEF (LVEF ≥ 50%) from Ibn Rochd University Hospital in Casablanca. Demographic, clinical, and laboratory data were collected. Disease severity was assessed using the New York Heart Association (NYHA) score, the H2FPEF score (specific to HFpEF diagnosis), and the Framingham risk score (for cardiovascular risk assessment). **Results:** The patient cohort had an average age of 68 years, with 55% female. Common comorbidities included hypertension (70%), diabetes (50%), coronary artery disease (30%), and obesity (25%). NYHA scores indicated moderate to severe physical limitations in 80% of patients. H2FPEF scores revealed that 30% of patients were at high risk for HFpEF. Framingham scores showed that 50% of patients were at intermediate risk for future cardiovascular events. **Conclusion:** HFpEF patients exhibit high levels of comorbidities, particularly hypertension and diabetes. Global scores such as NYHA, H2FPEF, and Framingham provide critical insights into patient management. The study emphasizes the importance of personalized treatment strategies and further research into the long-term impact of these scoring systems on patient outcomes.

Keywords: Comorbidities, HFpEF, NYHA.

INTRODUCTION

Heart failure with preserved left ventricular ejection fraction (HFpEF) is a clinical syndrome characterized by signs and symptoms of heart failure despite a normal or near-normal left ventricular ejection fraction (LVEF). This condition represents about half of all heart failure cases and is associated with high morbidity and mortality (1). This study aims to examine the management of 80 patients with HFpEF using recognized global scores to assess the severity of the disease and the effectiveness of interventions.

METHODOLOGY

Study Population

We included 80 patients diagnosed with HFpEF in our study. The following inclusion and exclusion criteria were applied:

Inclusion Criteria:

- Age over 18 years.
- Confirmed diagnosis of HFpEF (LVEF ≥ 50%).
- Presence of heart failure symptoms (dyspnea, fatigue, edema, etc.).

Exclusion Criteria:

- LVEF < 50%.
- Severe uncorrected valvular disease.
- Restrictive or hypertrophic cardiomyopathy.
- Uncontrolled severe pulmonary disease.
- End-stage renal disease requiring dialysis.

Scores Used

We used several global scores to assess the patients:

1. New York Heart Association (NYHA) Score: Classifies patients based on their level of physical disability.
2. H2FPEF Score: Specifically used to diagnose HFpEF.
3. Framingham Score: Used to predict the risk of cardiovascular diseases.

Data Collection

Demographic, clinical data, and laboratory test results were collected from the patients' medical records. Scores were calculated during patient consultations.

RESULTS

Demographic and Clinical Characteristics

- Average age of patients: 68 ± 10 years.
- Gender: 55% women and 45% men.
- Comorbidities: 70% of patients had hypertension, 50% were diabetic, 30% had coronary artery disease, and 25% were obese.

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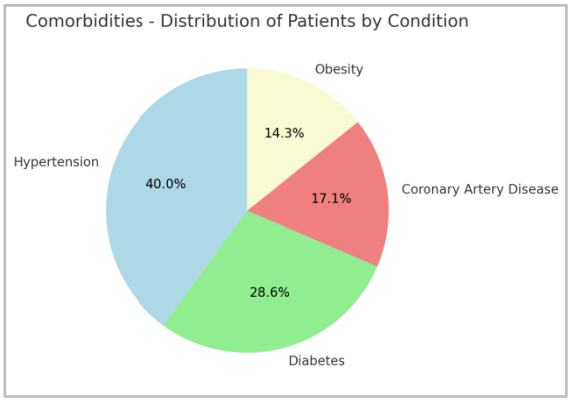


NYHA Scores

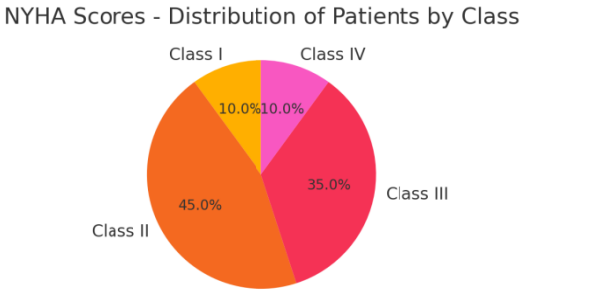
1. Class I: 10% of patients.
2. Class II: 45% of patients.
3. Class III: 35% of patients.
4. Class IV: 10% of patients.

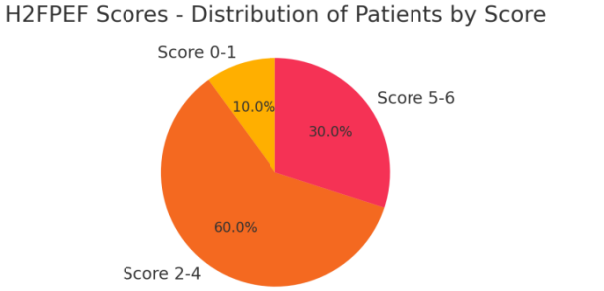
H2FPEF Scores

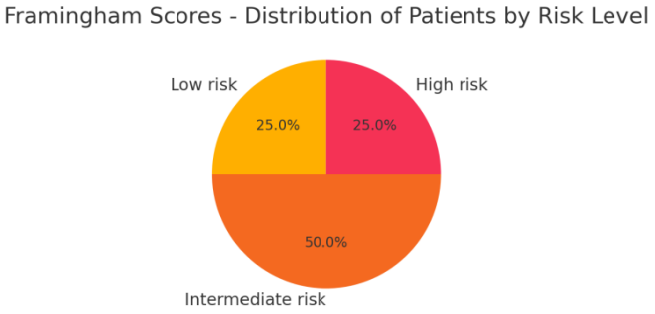
1. Score 0-1: 10% of patients.
2. Score 2-4: 60% of patients.
3. Score 5-6: 30% of patients.

Framingham Scores

1. Low risk: 25% of patients.
2. Intermediate risk: 50% of patients.
3. High risk: 25% of patients.







DISCUSSION

The results show a high prevalence of comorbidities among patients with HFpEF, particularly hypertension and diabetes, which is consistent with data from the literature(1). The NYHA scores indicate that the majority of patients had moderate to severe limitations in their daily physical activities.

Details of Comorbidities

1. **Hypertension** (70%): Hypertension is one of the main comorbidities observed in patients with HFpEF. It contributes to ventricular stiffness and increased cardiac afterload, exacerbating heart failure symptoms. Hypertensive patients often require strict blood pressure management to prevent deterioration of their cardiac condition (2).
2. **Diabetes** (50%): Diabetes is strongly associated with HFpEF due to its harmful effects on cardiac and vascular metabolism. Diabetic patients have an increased risk of endothelial dysfunction, systemic inflammation, and myocardial fibrosis, worsening ventricular stiffness and heart failure symptoms (2).
3. **Coronary Artery Disease** (30%): Patients with coronary artery disease often suffer from reduced myocardial perfusion and recurrent ischemia, which can exacerbate diastolic dysfunction and HFpEF symptoms. Management of coronary artery disease, including the use of anticoagulants and antiplatelet medications, is crucial for these patients (3).
4. **Obesity** (40%): Obesity is a common comorbidity in patients with HFpEF, contributing to increased left ventricular filling pressure and impaired ventricular relaxation. Effective management of obesity through lifestyle modifications and nutritional intervention is essential for improving symptoms (1).
5. **Sleep Apnea** (25%): Obstructive sleep apnea is common in patients with HFpEF and is associated with increased negative intrathoracic pressure, leading to ventricular volume overload and increased myocardial stiffness. Treatment of sleep apnea may include the use of continuous positive airway pressure (CPAP) devices to improve sleep quality and cardiac function (2).

Risk scores from the European Society of Cardiology and the Framingham study suggest that a significant proportion of these patients are at moderate to high risk of future cardiovascular complications (2,3). These scores can help identify patients who require more intensive monitoring and more aggressive therapeutic interventions. The H2FPEF score, specifically designed to diagnose HFpEF, showed that 30% of patients had a high score (5-6), indicating a high likelihood of HFpEF. This score uses easily measurable clinical parameters such as hypertension, obesity, and renal dysfunction, and has proven useful for differentiating HFpEF from other forms of heart failure (4). The treatment of heart failure with preserved ejection fraction (HFpEF) remains complex and continues to evolve with new pharmacological approaches and recommendations. Recent guidelines emphasize the importance of managing comorbidities and lifestyle modifications, in addition to specific drug therapies. Sodium-glucose co-transporter 2 inhibitors (SGLT2i) such as empagliflozin and dapagliflozin have been shown to reduce hospitalizations in both diabetic and non-diabetic patients [5]. Recent studies also highlight the use of spironolactone and

sacubitril-valsartan, particularly effective in patients with borderline reduced ejection fraction [6]. However, many clinical trials have yielded disappointing results, underscoring the need for personalized therapeutic approaches due to the complexity of the HFpEF syndrome [7]. Recent recommendations incorporate contemporary data to provide a practical framework for evidence-based diagnosis and treatment [8,9].

Conclusion

This study highlights the importance of using global scores to assess the severity of heart failure with preserved left ventricular ejection fraction and the associated risks in patients. The scores used provide valuable information that can guide clinicians in the management and follow-up of these patients. Future studies with larger sample sizes and long-term follow-ups are needed to better understand the impact of these scores on clinical outcomes and to develop optimal intervention strategies for patients with HFpEF.

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