“Can We Predict OPAT Failure? The Role of Comorbidity in an Irish University Teaching Hospital”

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Introduction

OPAT is an established model of care that allows patients to receive intravenous antimicrobial therapy in the community, reducing inpatient length of stay. However, unplanned readmissions remain a key challenge. Previous studies have identified comorbidity burden as a potential predictor of adverse outcomes in OPAT patients, highlighting the need for effective risk stratification tools (Stubbs 2023).

Aims and Objectives

- To assess whether the comorbidity burden predicts hospital readmission in OPAT patients
- To evaluate the association between the Charlson Comorbidity Index (CCI) and hospital readmission in patients receiving OPAT

The **Charlson Comorbidity Index (CCI)** is a clinical tool used to predict a patient’s risk of death and poorer outcomes based on their **existing medical conditions (comorbidities)**.

Method

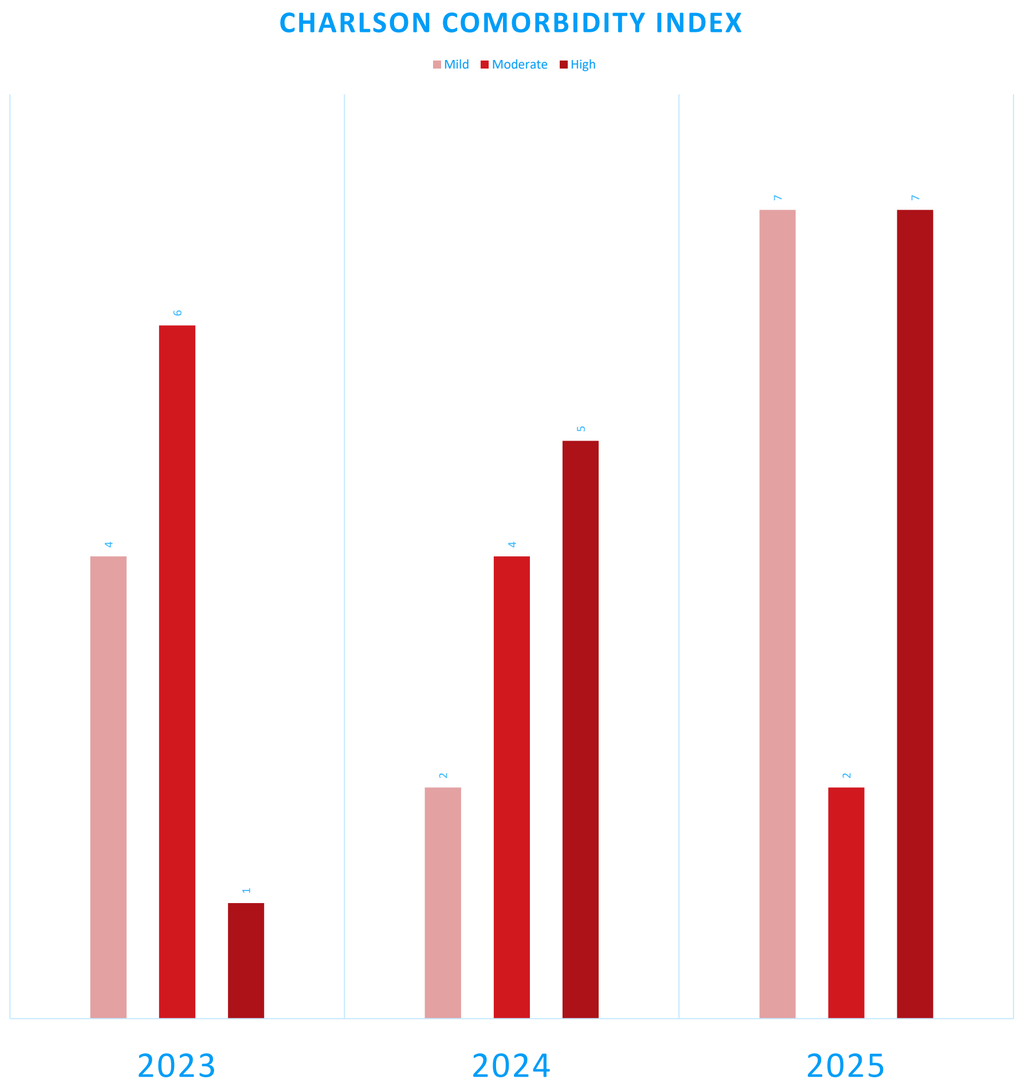
A retrospective cohort study of patients discharged on the OPAT service from January 2023 to December 2025 was performed using electronic patient records.

CCI scores were calculated and categorised as low (0–2), moderate (3–4), and high (≥5). The primary outcome was hospital readmission during OPAT therapy. Comparative analysis was performed between readmitted and non-readmitted patients, and readmission rates across CCI categories were assessed.

Results

A total of 346 patients were discharged on OPAT over the 3-year period. Of these, 38 patients (10.9%) were readmitted during OPAT.

The mean CCI score among readmitted patients was 4.4, compared to 1.5 in those not readmitted, indicating a higher comorbidity burden in those requiring readmission. Readmission rates increased across CCI categories, supporting an association between higher comorbidity burden and risk of readmission.



Conclusion

Higher Charlson Comorbidity Index scores were associated with increased risk of hospital readmission in patients receiving OPAT.

CCI may be a useful tool for risk stratification when selecting OPAT candidates and identifying patients who may benefit from closer monitoring following discharge.

Limitations include the retrospective design and sample size.