

## Association of thyroid feedback quantile-based index with 90-day all-cause mortality and readmission in hospitalized heart failure patients

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### INTRODUCTION & AIM

Previous studies have reported a positive correlation between the Thyroid Feedback Quantile-based Index (TFQI), which reflects the central sensitivity of thyroid hormones, and the prevalence of cardiovascular diseases. However, the relationship between the TFQI and the prognosis of heart failure (HF) remains unclear. This study aimed to identify the optimal threshold for risk stratification and to determine which specific TFQI range is associated with poorer outcomes in HF patients.

### METHOD

This retrospective study included 402 individuals admitted to the Cardiology Department of Heze Hospital, affiliated with Shandong First Medical University, between 2022 and 2023. The primary outcome was 90-day all-cause mortality or HF readmission, as determined by routine follow-up. The X-tile project was used to obtain a threshold based on the composite outcome. Univariate and multivariable Cox regression, restricted cubic spline (RCS) analysis, and the construction of Kaplan–Meier curves were conducted.

### RESULTS & DISCUSSION

An analysis using X-tile software revealed that the optimal TFQI threshold for predicting adverse composite outcomes was 0.10. Patients with a TFQI value  $> 0.10$  remained independently associated with adverse composite outcomes (adjusted HR: 1.89, 95% CI: 1.144, 3.121,  $P = 0.013$ ). The RCS analysis demonstrated a linear relationship between continuous TFQI values and the hazard ratio of the composite inferior outcome. The Kaplan–Meier curves revealed a significant difference in the survival rates between patients with TFQI values  $\leq 0.10$  and those with values  $> 0.10$  (Log-rank test:  $P = 0.004$ ).

### CONCLUSION

A TFQI value  $> 0.10$  can be used to identify HF inpatients who are at increased risk of mortality or readmission. Incorporating the TFQI into routine clinical assessments could enable healthcare providers to identify high-risk patients and implement more targeted interventions.

### FUTURE WORK / REFERENCES

