Diabetes and glycemic control in acute heart failure: complications, hospital stay and prognosis

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Introduction

- Cardiovascular (CV) disease (CVD) is the main cause of mortality in diabetic individuals.
- Type 2 diabetes (T2D) increases the risk of developing heart failure (HF) and, in patients with established HF, T2D increases mortality.
- The relation between A1c and HF outcomes has been discussed and the role of glycemic control in the acute phase of HF remains understood.
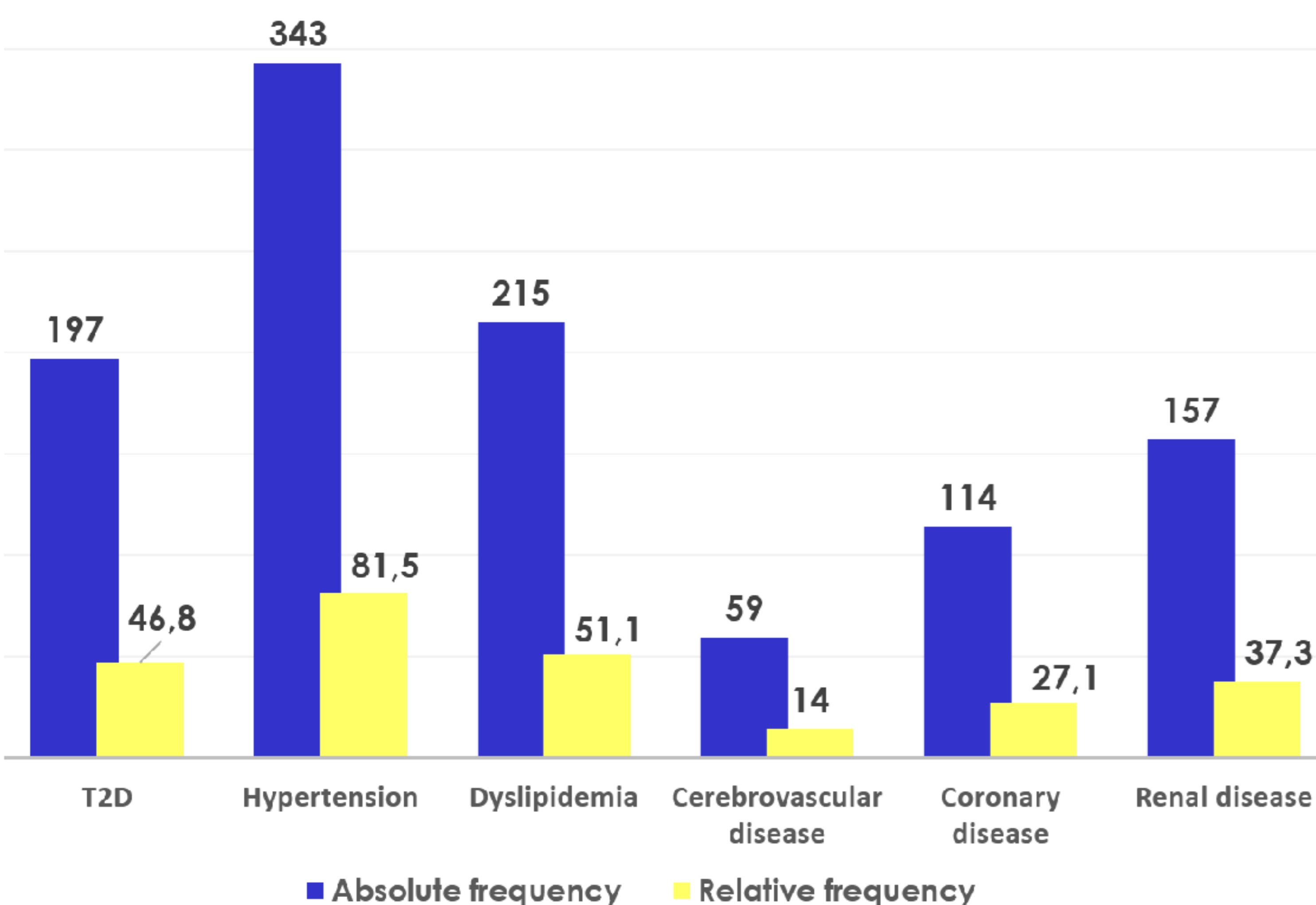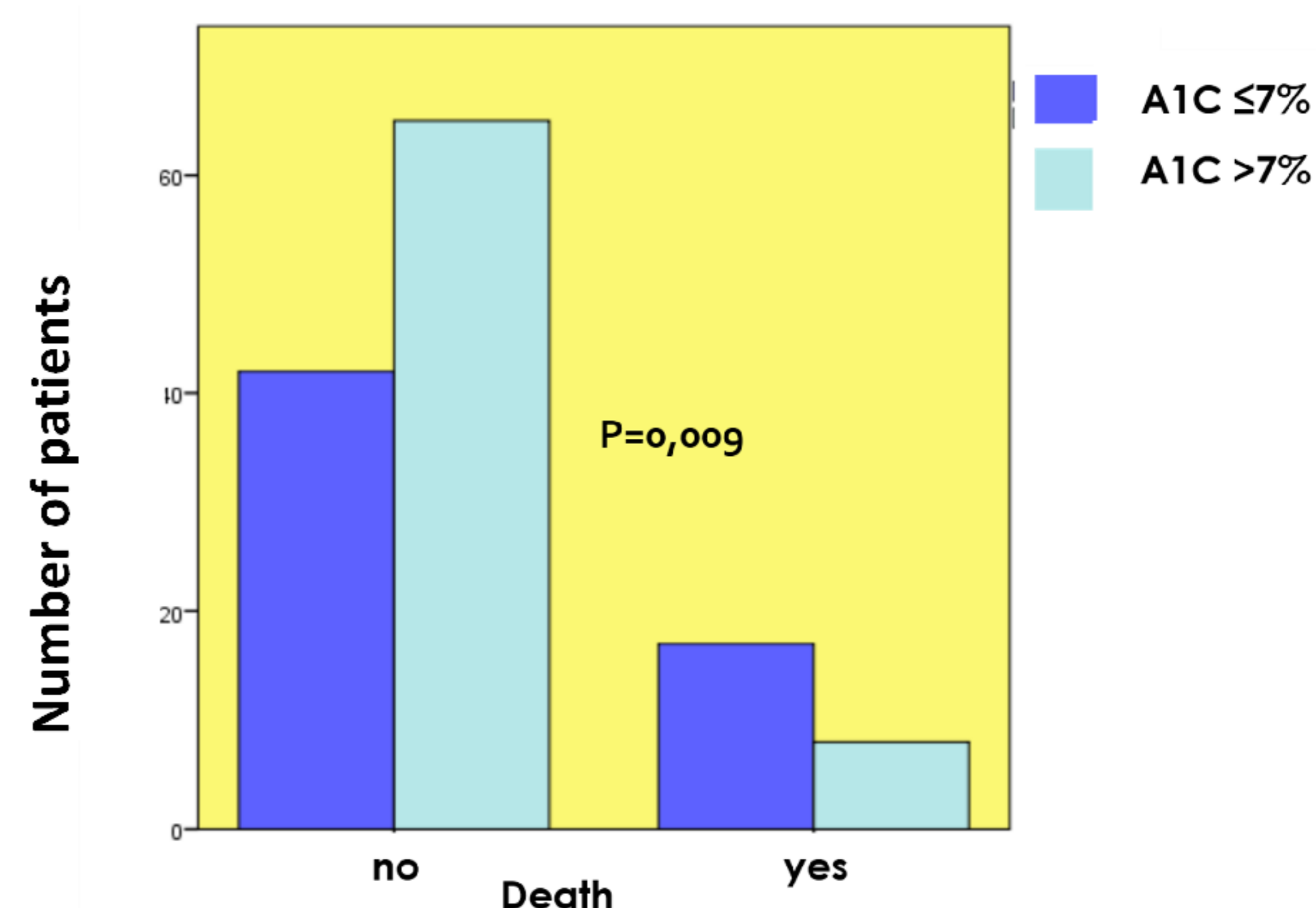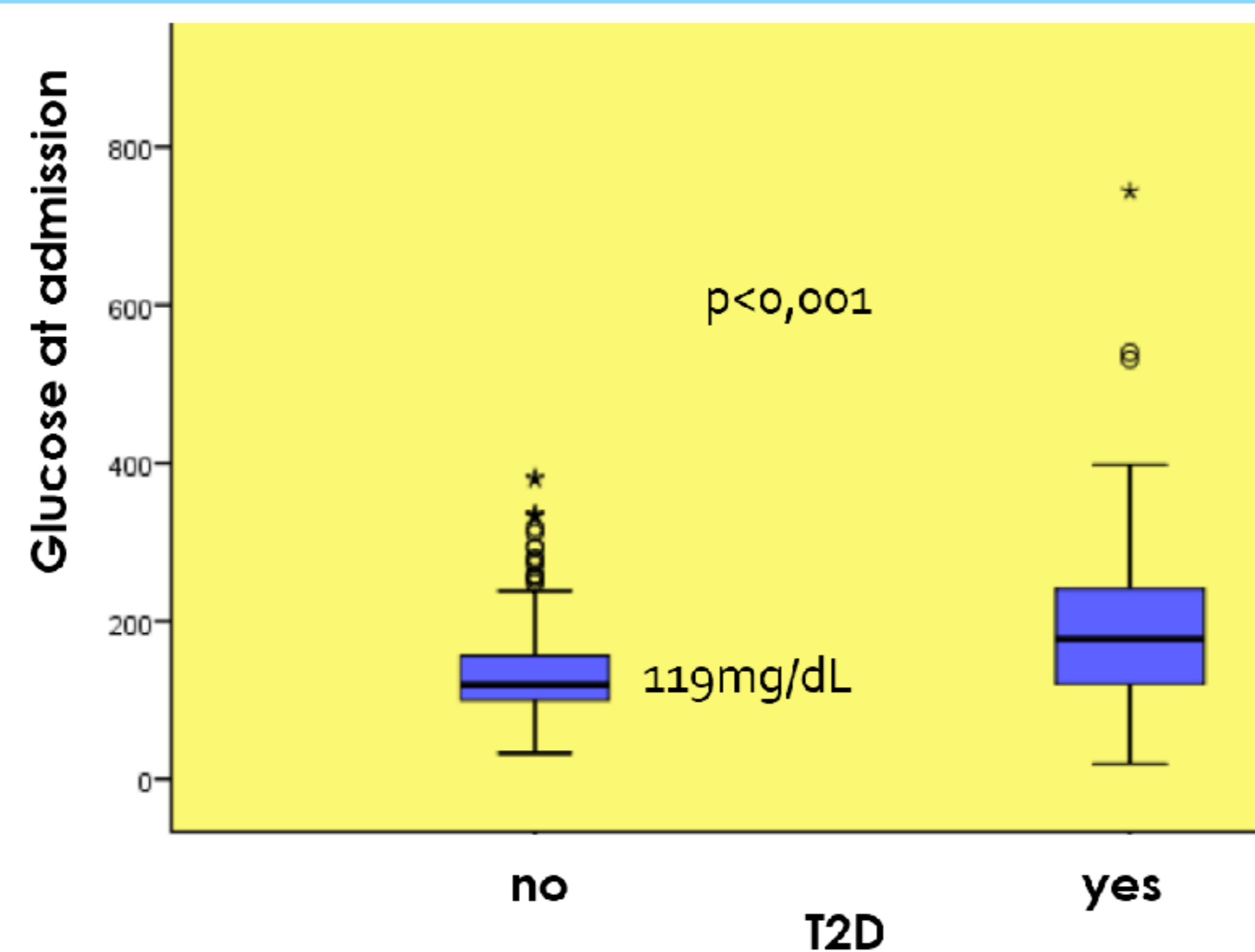
Objectives

The aim of this study is:
- Analyze the impact of T2D on complications, length of hospital stay and mortality in patients hospitalized due to acute HF;
- Analyze the impact of glycemia at admission in complications, length of hospital stay and mortality in patients hospitalized due to acute HF;
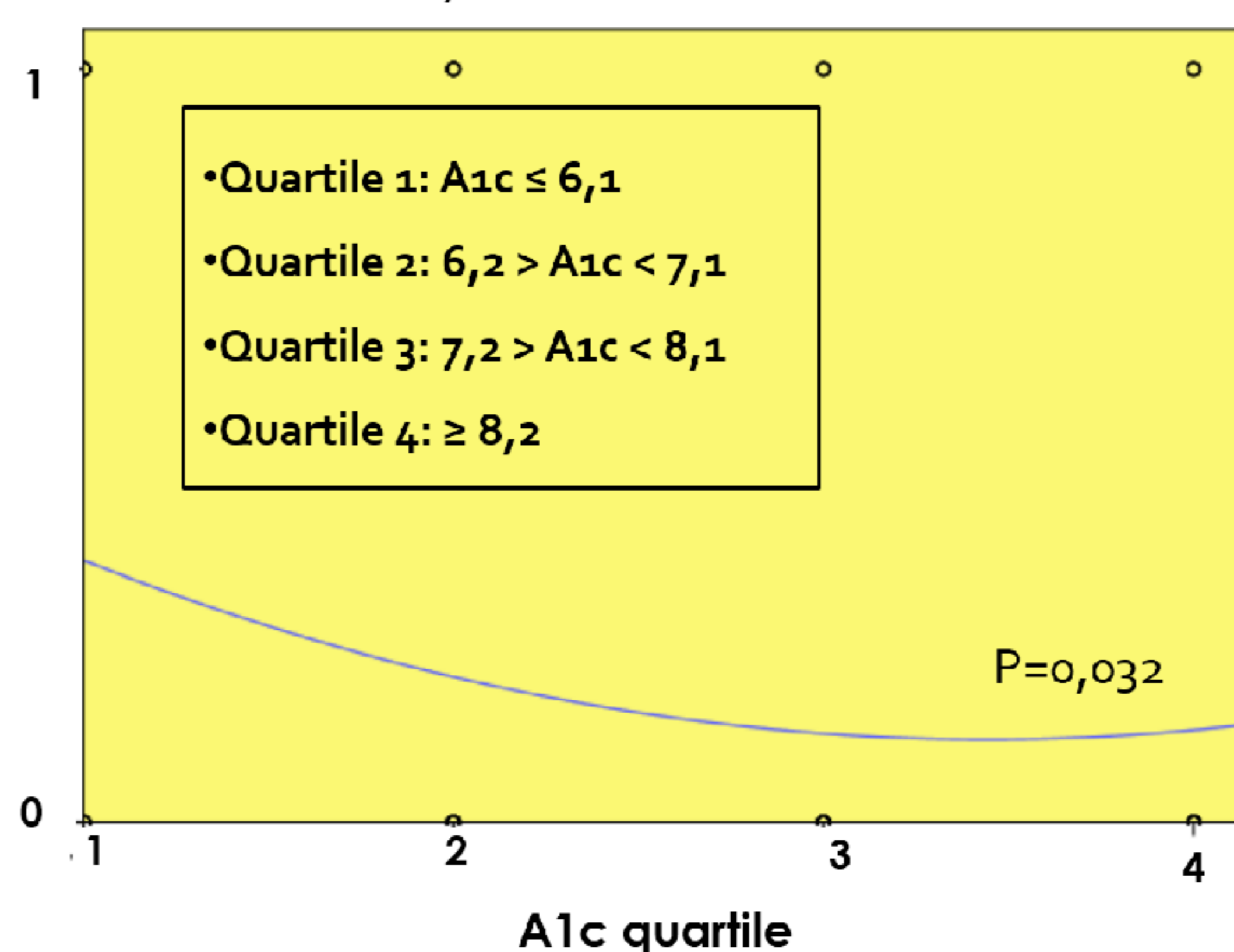- Evaluate the influence of A1c in HF outcomes.

Methods

- A retrospective study was conducted reviewing the medical charts of patients hospitalized due to acute HF between 2010 and 2014.
- Data respecting HF characteristics, T2D information and glucose at admission were recorded.
- Patients without echocardiogram data were excluded.

Results

- N=421
- 163 (38,7%), 258 (61,3%)
- Mean age: 77,58 9,6 years-old
- Glucose at admission (median): 137 mg/dL (P25-P75: 104-202)

p<0,001 — Glucose at admission vs T2D (no / yes), 119mg/dL

A1C ≤7% / A1C >7% — Number of patients vs Death (no / yes), P=0,009

Absolute frequency / Relative frequency:
T2D: 197 / 46,8
Hypertension: 343 / 81,5
Dyslipidemia: 215 / 51,1
Cerebrovascular disease: 59 / 14
Coronary disease: 114 / 27,1
Renal disease: 157 / 37,3

Death: 0=no; 1=yes

- Quartile 1: A1c ≤ 6,1
- Quartile 2: 6,2 > A1c < 7,1
- Quartile 3: 7,2 > A1c < 8,1
- Quartile 4: ≥ 8,2

P=0,032 — A1c quartile

- DM 2 (n= 197)
- 61 (31%), 136 (69%)
- Mean age 77,26 8 years-old
- Median A1c (n=132, 67%): 7,42 (P25-P75: 6,4-81)

There was no significant association between T2D and complications, hospital length stay, re-hospitalization or mortality.

Conclusions

- There was a high prevalence of T2D in patients hospitalized due to acute HF (46,8%).
- In this study there was no significant association between T2D and adverse outcomes.
- Both high and low A1c seem to predict death in diabetic patients hospitalized due to acute HF, forming a U-shaped relationship.

References

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