



Predictors And Case Fatality Rate Of Perioperative Major Cardiovascular Events In Cardiac Patients Undergoing Non-Cardiac Surgery

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BACKGROUND

- Preoperative risk-stratification to identify high-risk patients is used to improve perioperative management.
- The most-often used preoperative risk-stratification model was derived from a heterogeneous non-cardiac population, and prediction of cardiac events is notably less accurate for non-cardiac surgery patients.

OBJECTIVES

- To identify **predictors and case fatality rate of perioperative major adverse cardiovascular events (MACVE)** (myocardial infarction, stroke, acute heart failure, venous thromboembolism, acute limb ischemia) in cardiac patients undergoing non-cardiac surgery.

METHODS

- Analysis of prospective **multicenter PRAGUE-14 study** was performed.
- **Demographic characteristics, cardiovascular risk factors, presence of CV diseases, significant comorbidity** (presence of organ dysfunction, cancer), history of **bleeding, type of surgery** and **long-term pharmacotherapy** were included in the MACVE prediction model.

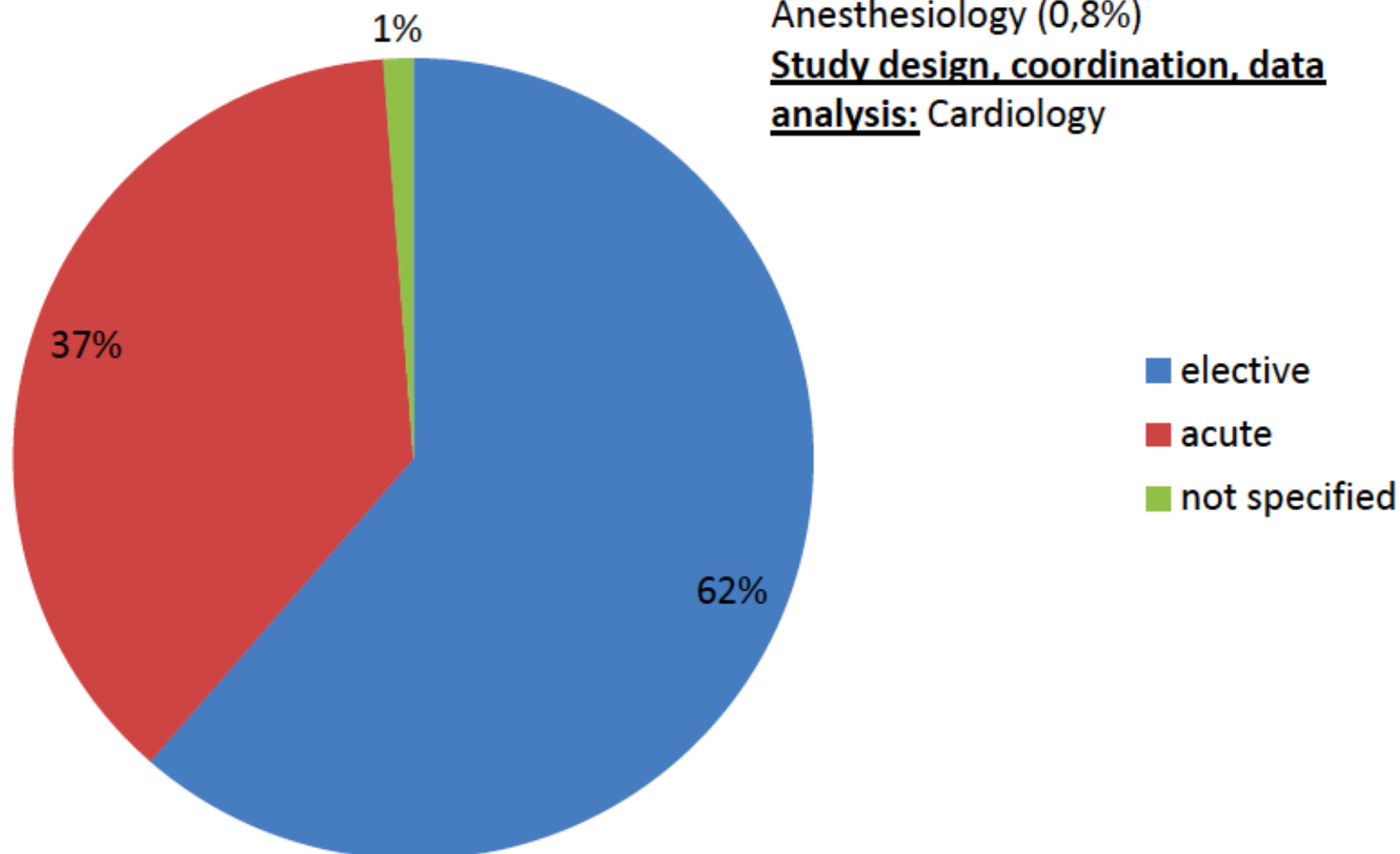
Patients, type of surgery

N = 1211 (all pts. with CV disease undergoing major non-cardiac surgery during the study period 2011–13 (6,3% of 18 951 surgical pts)
General anesthesia in 64,4%

Enrolling surgical departments:

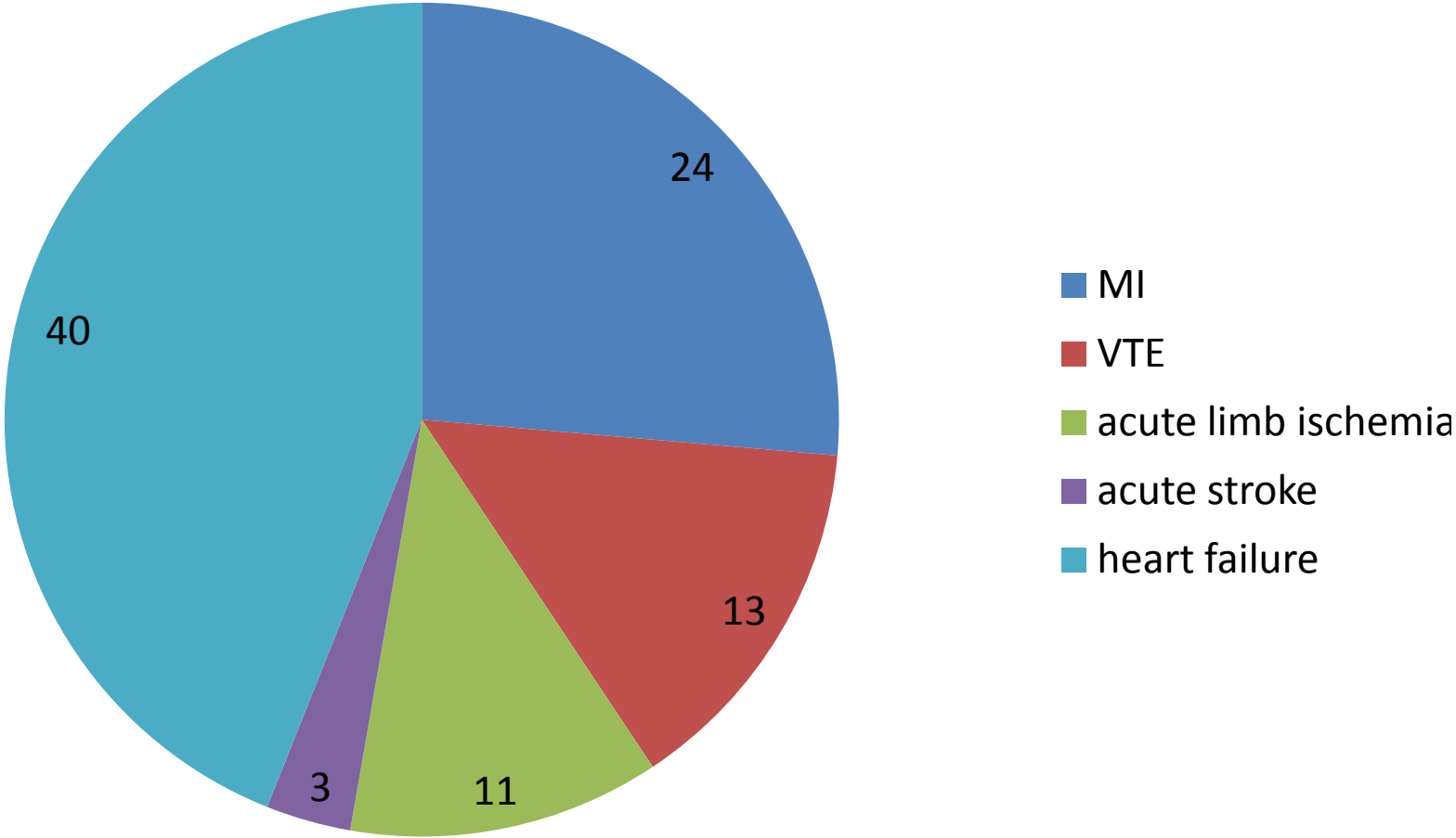
General surgery (43,3% pts)
Trauma / orthopedic surgery (39,9%)
Urology (10,5%)
Neurosurgery (5,5%)
Anesthesiology (0,8%)

Study design, coordination, data analysis: Cardiology



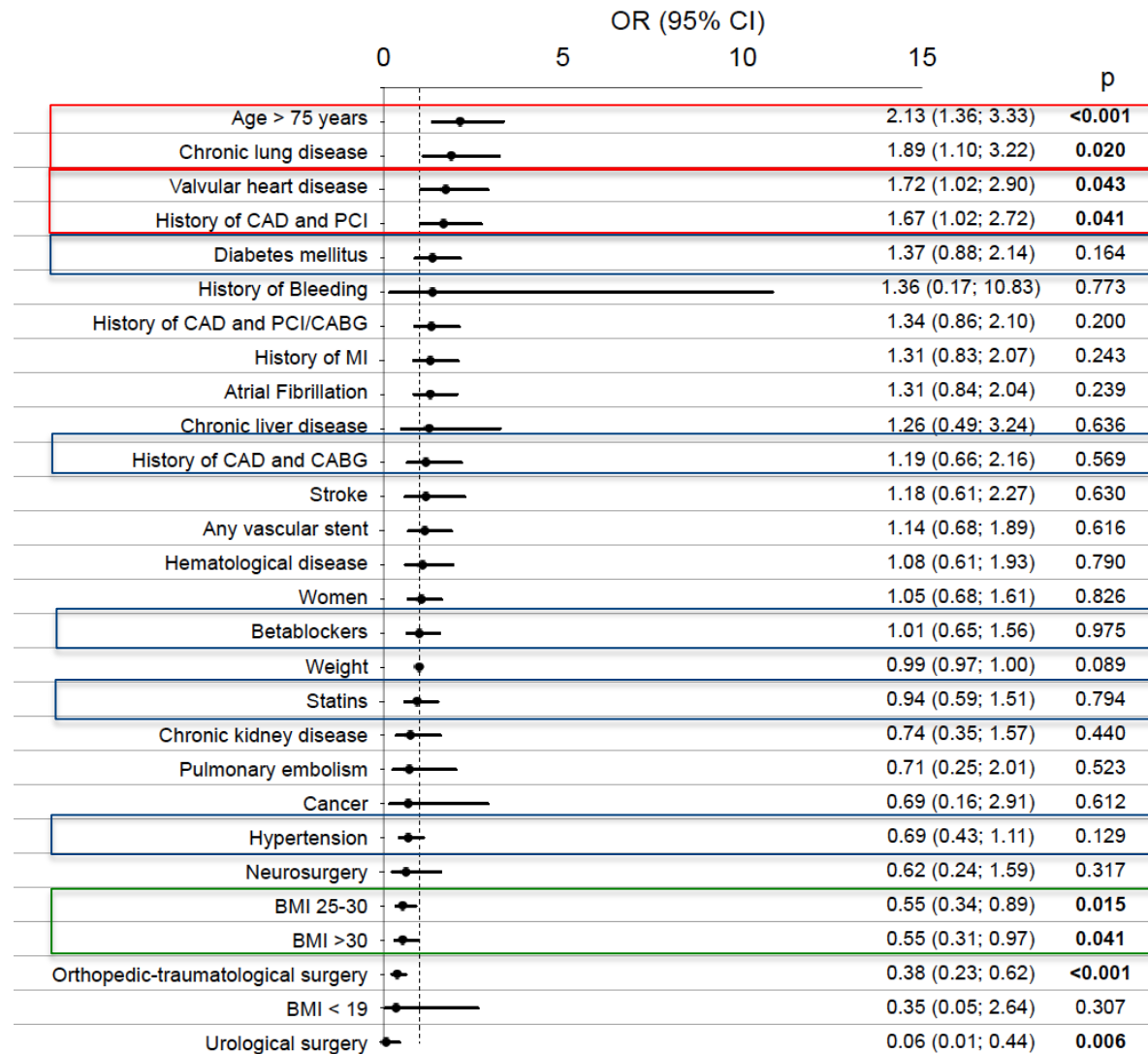
RESULTS

Perioperative cardiovascular complications n = 91 (7.6%)

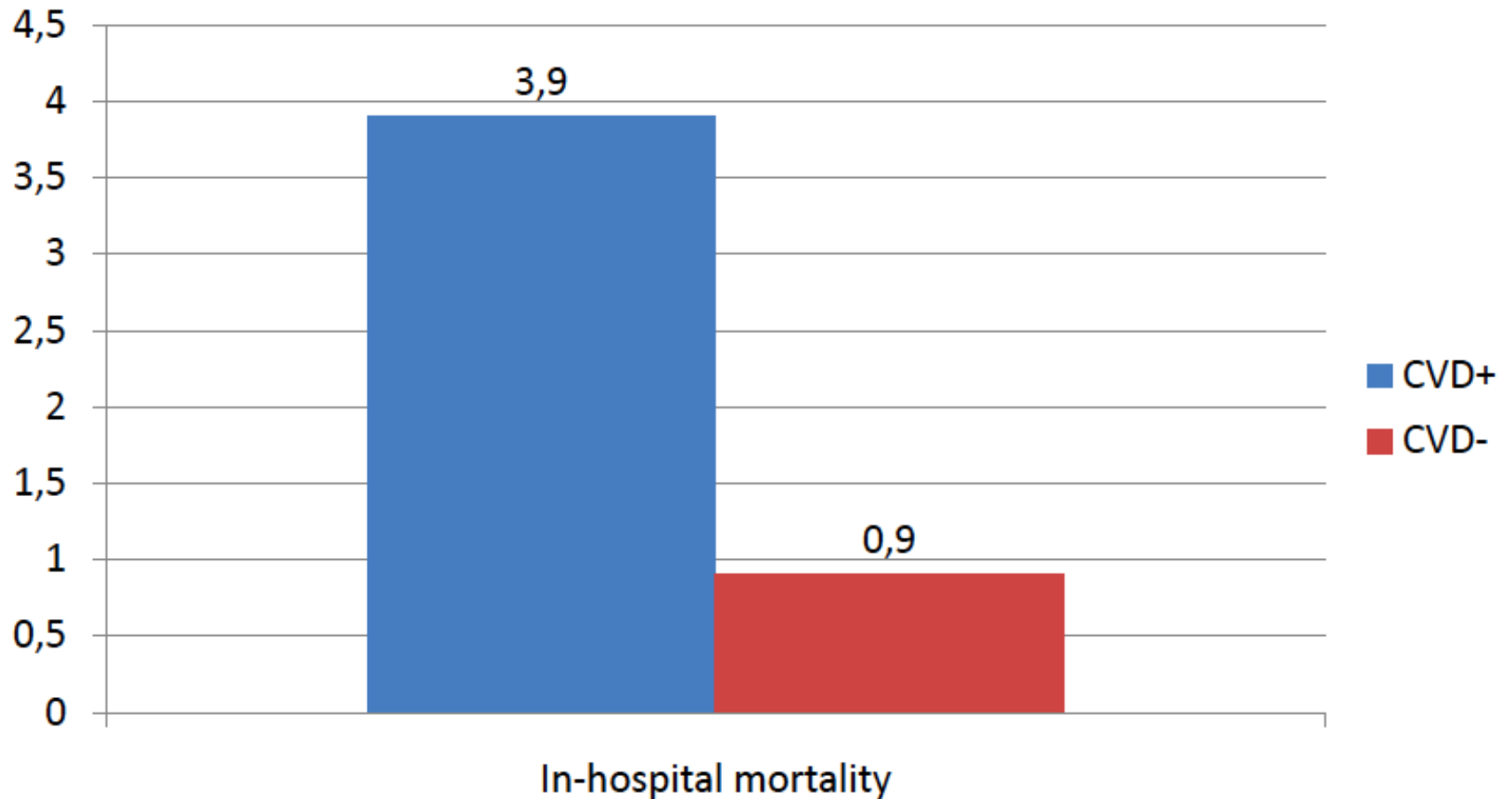


36 patients had ≥ 1 event.

Predictors of ischemic complications



In-hospital mortality of patients with a cardiovascular disease (n=1200) vs. those without CVD (n=17740)



Case fatality (CFR) rate of perioperative MACVE

CFR of perioperative MACVE was 37.4%

MI was 16.7%,

Stroke 100%,

Pulmonary embolism 58.3%,

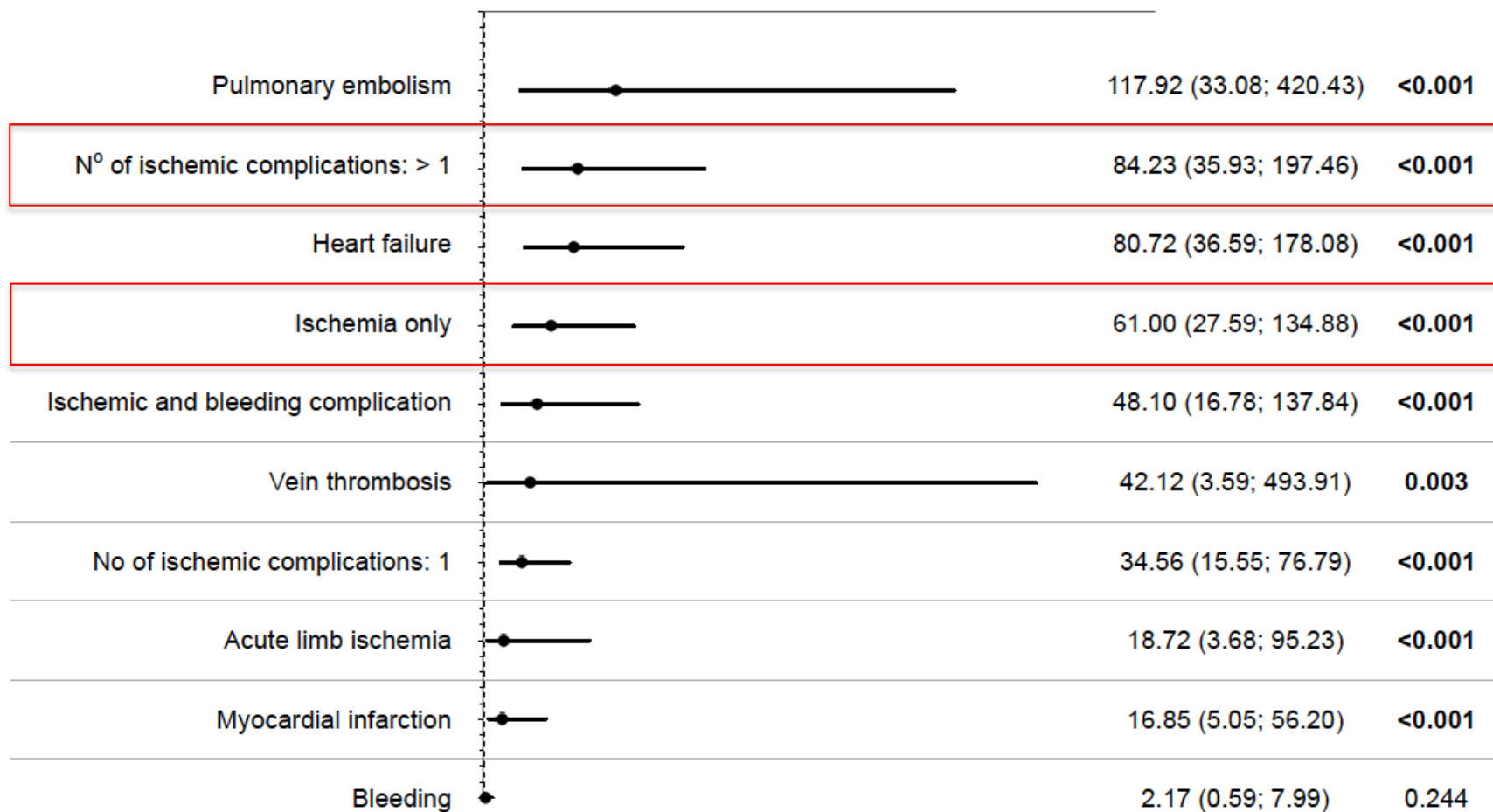
Acute heart failure 48.3%,

Acute limb ischemia 18.2%

Ischemic complications as predictors of mortality

OR (95% CI)

0 200 400 600 p

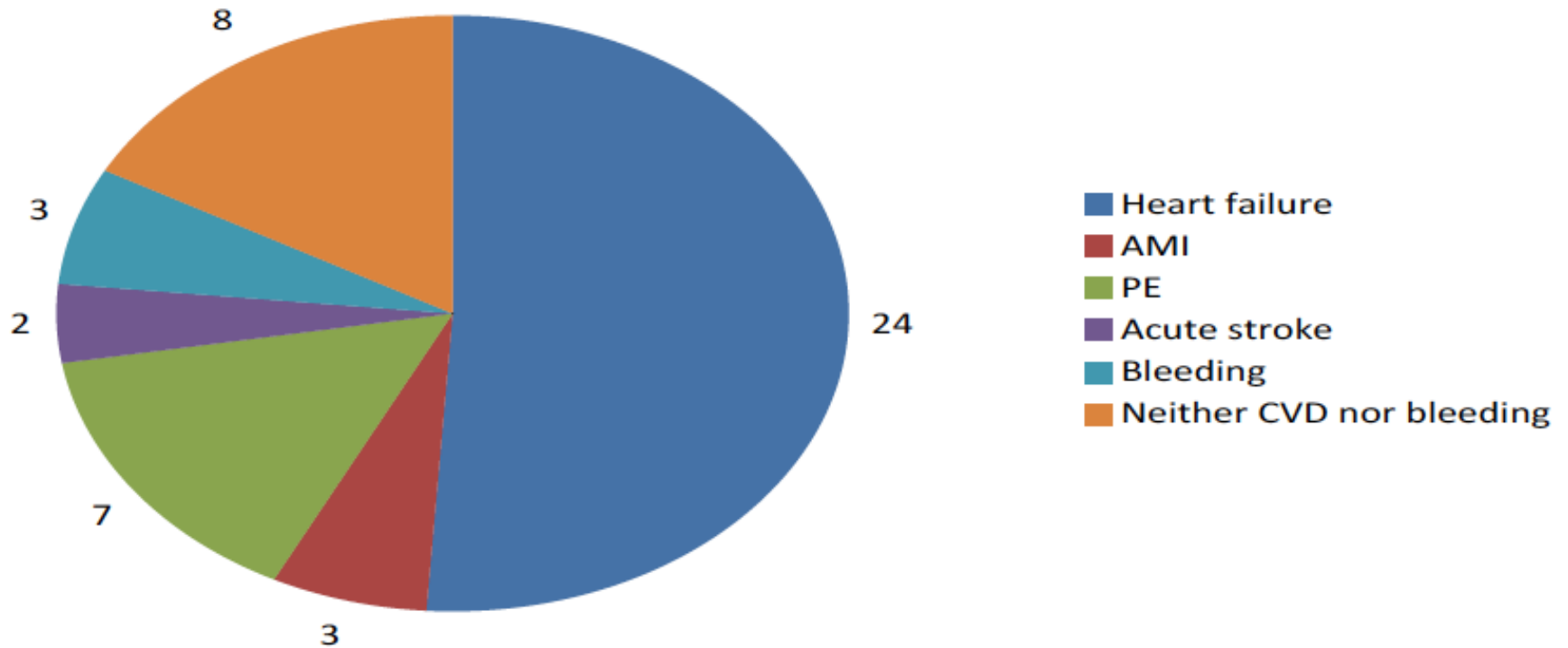


CONCLUSIONS

- Case fatality rate of perioperative MACVE in cardiac patients undergoing non-cardiac surgery is extremely high,
- Integration of identified predictors of these complications, which do not replicate known cardiovascular risk factors, into the perioperative cardiovascular risk assessment and decision-making process may improve prognosis of these patients.

Causes of death

n=47, i.e. 3.9%



Baseline characteristics

Mean age	74,2 ± 10,2 years
Female sex	43,9%
Mean body weight	78,9 ± 16,2 kg
Diabetes mellitus	30,9%
Hypertension	77,8%
Chronic kidney disease	11,3%
Chronic liver disease	4,5%
Chronic pulmonary disease	12,9%
Current tumor	15,6%
Current hematologic disease	3,2%
History of any vascular stent implantation	14,3%
History of any previous bleeding requiring treatment	3,5%