# Clinical predictors of long-term mortality after first ablation of ventricular tachycardia in patients with structural heart disease

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**Czech Cardiovascular Research and Innovation Days**

Hermitage Hotel, Prague

November 20-21, 2023

INSTITUT KLINICKÉ A EXPERIMENTÁLNÍ MEDICÍNY
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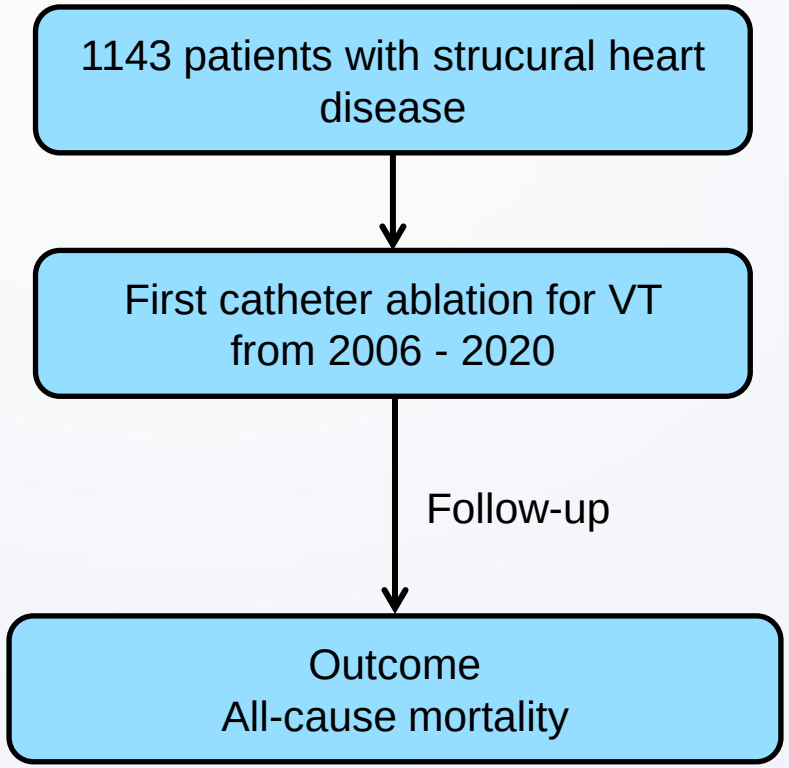
# Introduction

- Catheter ablation is a well-established treatment modality for a wide spectrum of ventricular tachycardias (VTs).
- However, in the presence of structural heart disease (SHD), the prognosis and long-term mortality remains poor.

- The aim of this study was to investigate the predictors of all-cause mortality after SHD-VT ablation in a high-volume expert center.

# Methods

- Retrospective analysis
- Large representative cohort
- Tertiary high volume expert center
- Univariate and multivariate Cox-regression analyses



# Baseline characteristics

| Baseline characteristics | |
|---|---|
| **N = 1143** | Mean ± SD |
| **Male (%)** | 87 |
| **Age (yrs)** | 63 ± 13 |
| **BMI (kg/m2)** | 29 ± 5 |
| **BSA (m2)** | 2 ± 0.2 |
| **Heart Failure (%)** | 93 |
| **CHADS2 score** | 2.3 ± 1.2 |
| **CHA2DS2VASc score** | 3.6 ± 1.6 |
| **ICD (%)** | 77 |
| **CRT (%)** | 34 |
| **Ventricular assist device (%)** | 5.2 |
| **Weight (kg)** | 89 ± 17 |
| **Height (cm)** | 175 ± 8.6 |
| **Arterial hypertension (%)** | 66 |
| **Diabetes Mellitus (%)** | 32 |
| **Stroke / TIA (%)** | 12 |
| **CAD or PAD (%)** | 68 |
| **COPD (%)** | 12 |
| **LVEF mean (%)** | 34 ± 13 |

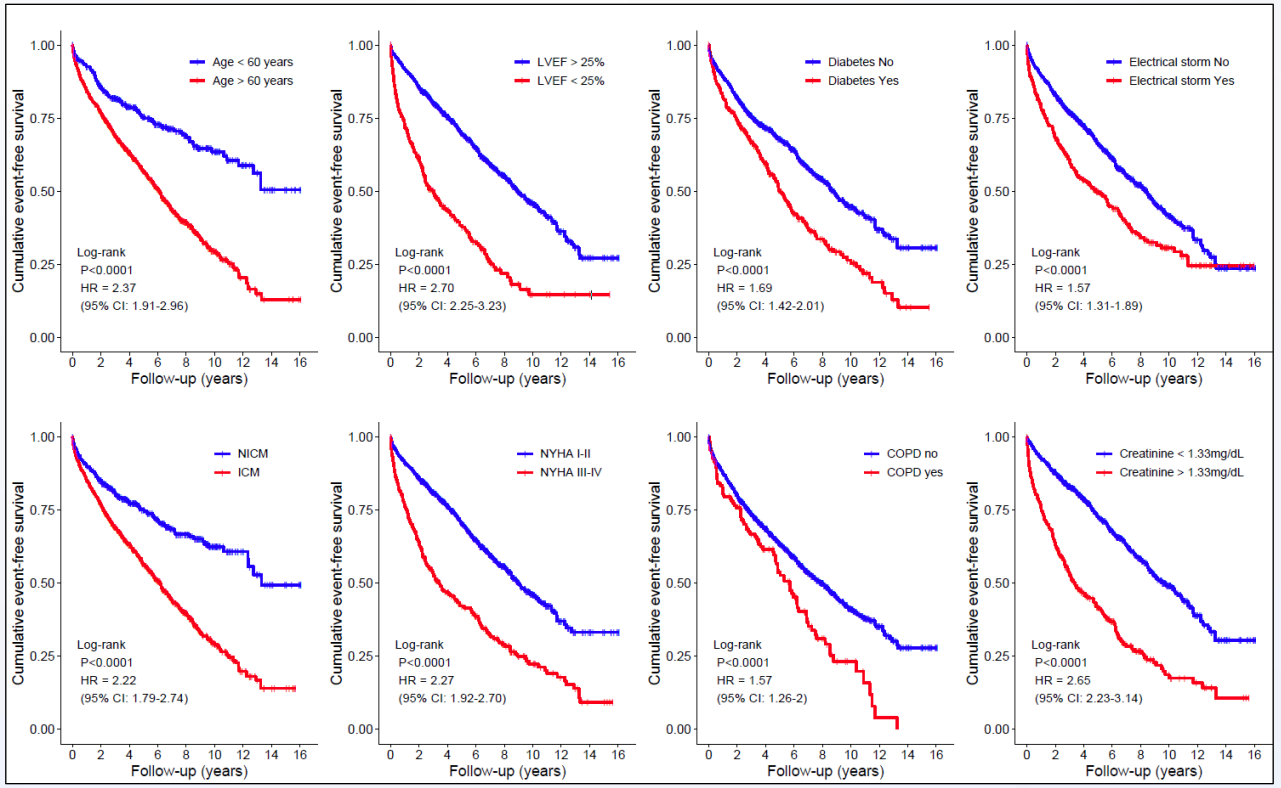
| Type of cardiomyopathy (%) | |
|---|---|
| **Ischemic cardiomyopathy** | 67 |
| **Dilated cardiomyopathy** | 18 |
| **ARVC / LDAC** | 5.2 |
| **Hypertrofic cardiomyopathy** | 1.1 |
| **Valvular cardiomyopathy** | 11 |

# Results 1

| Results | |
|---|---|
| **Follow-up** | 4.1 years (IQR: 2.0 – 7.2) |
| **Mortality** | 48 % |
| **Re-ablation** | 320 pts (28 %) |
| **PAINESD score** | 11.4 ± 6.6 (median: 12, IQR: 6-17) |
| **Heart transplantation** | 5.2% |

| Procedural characteristics | |
|---|---|
| **N = 1143** | Mean ± SD |
| **Radiofrequency time (sec)** | 1369 ± 929 |
| **Fluoro dose (uG*m2)** | 1104 ± 1792 |
| **Fluoro time (min)** | 10 ± 8.1 |
| **Procedure time (min)** | 187 ± 78 |
| **Complication rate (all)** | 11 |
| **Major complications** | 7.5 |
| **Major vascular access complications** | 4.3 |
| **Acute heart failure event** | 1.1 |
| **Electrical storm (%)** | 25 |
| **Total number of ablation procedures** | 1.4 ± 0.83 |

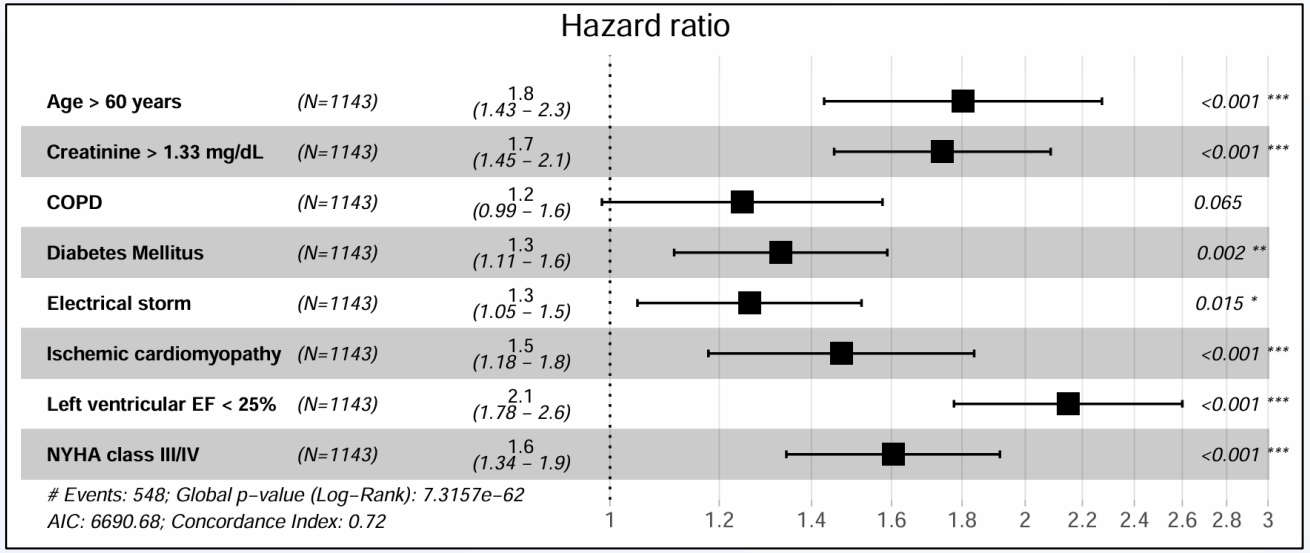
Dichotomized clinical factors associated with the increased mortality




Univariate Cox regression analysis

# Results 2

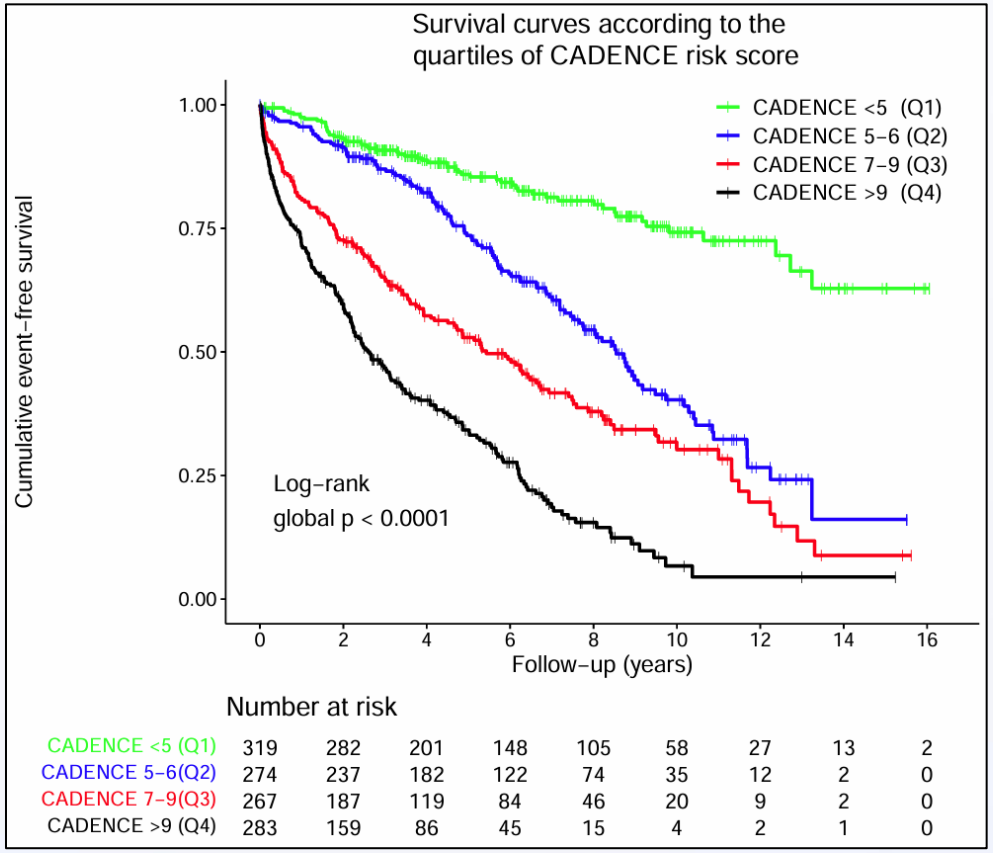
Multivariate Cox regression analysis



# Results 3

## Mortality score CADENCE

| CADENCE score | |
|---|---|
| | **Points** |
| **Chronic obstructive pulmonary disease** | 1 |
| **Age** | 3 |
| **Diabetes Mellitus** | 1 |
| **Electrical Storm** | 1 |
| **NYHA III or IV** | 2 |
| **Creatinin >1.33mg/dL** | 3 |
| **Ischemic Cardiomyopathy** | 2 |
| **LV Ejection Fraction** | 4 |




Unpublished data

# Conclusion

- In a large cohort of patients after SHD-VT ablation, an advanced age, poor ejection fraction, ischemic cardiomyopathy, high NYHA class, diabetes mellitus and electrical storm but not COPD were independent and strong predictors of long-term all-cause mortality.

- Mortality score CADENCE identifies patients with high mortality after catheter ablation.

# THANK YOU!

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