Causes and predictors of short, intermediate and long-term mortality in patients with coronary artery disease

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Abstract

Background: Little is known regarding long-term outcomes related to adverse cardiovascular events and non-cardiovascular events.

Purpose: To describe causes and predictors of short-term, intermediate-term, and long-term mortality after PCI.

Methods: Consecutive men and women admitted for PCI from 2008 to 2011 were prospectively included and followed-up in this cohort study. A pre-established and dedicated follow-up was performed in consultation and by calls to collect outcomes and the exact causes of death. Two independent reviewers adjudicated the events between cardiovascular or non-cardiovascular death. Last detailed cardiovascular and vital status were collected in January 2019.

Results: A total of 3524 patients including 2720 men (77.2%) and 804 women (22.8%) were followed-up for a median time of 7.0 years (IQ1: 5.4 ; IQ3: 7.2). All-cause death occurred for 30.3% (n=1070) of patients in the cohort, in a median time of 2.5 years after PCI, with a rate of 5.3 deaths per 100 patient-years. Overall, patients were more likely to die from a cardiovascular cause than non-cardiovascular (17.7 % versus 12.6 %, log-rank <0.001) **(figure 1).** This trend was stronger within 30 days (4.7% vs. 0.3 %, p<0.0001) and the first year after PCI (3.1 % vs. 2.2 p =0.01), but became non-significant beyond one year (9.9% vs. 10.2%, P=0.67). Of note, cancer was the major cause of non-cardiovascular death (5.6%; 1 per 100 patient-years) **(figure 3).** The strongest risk factors for all-cause mortality along time were diabetes (adHR = 1.48 95CI% [1.29 – 1.71], p<0.001), active smoking (adHR = 1.37, 95CI% [1.16 – 1.62]) and chronic kidney disease (adHR = 1.97, 95CI% [2.55 – 3.45], p<0.001).

Conclusion: In this prospective cohort study, cardiovascular death outer-passed non-cardiovascular death in patients treated with PCI in the short and intermediate-term but not beyond one year. Cancer accounted for one fifth of the overall mortality.

Table 1. Baseline characteristics

Study Population (N=3524)	
Age (years), median, [IQR]	65.4 [56.9 – 75.7]
Family history of CAD	617 (17.5%)
Dyslipidemia	1980 (56.2%)
BMI (kg/m²), median, [IQR]	25.7 [23.4 – 28.6]
Diabetes mellitus	1022 (29%)
Hypertension	2125 (60.3%)
Active smoking	979 (28.3%)
Chronic kidney disease*	962 (27.3%)
History of MI or CABG or PCI	1249 (35.4%)
Clinical presentation	
MI	1876 (53.2%)
Stable angina	729 (20.7%)
Silent ischemia	613 (17.4%)
Other	270 (7.7%)
Angiographic characteristics	
Left main	200 (5.7%)
Left anterior descending	2263 (34.2%)
Left circumflex	1632 (46.3%)
Right coronary artery	1935 (54.9%)
Lesion on CABG	163 (4.6%)
Number of vessels	
1 vessel	1716 (48.7%)
2 vessels	1076 (30.5%)
3 vessels	732 (20.8%)
Multivessel disease	1809 (51.3%)

Fig.1 Cumulative incidence of cardiovascular and non cardiovascular death

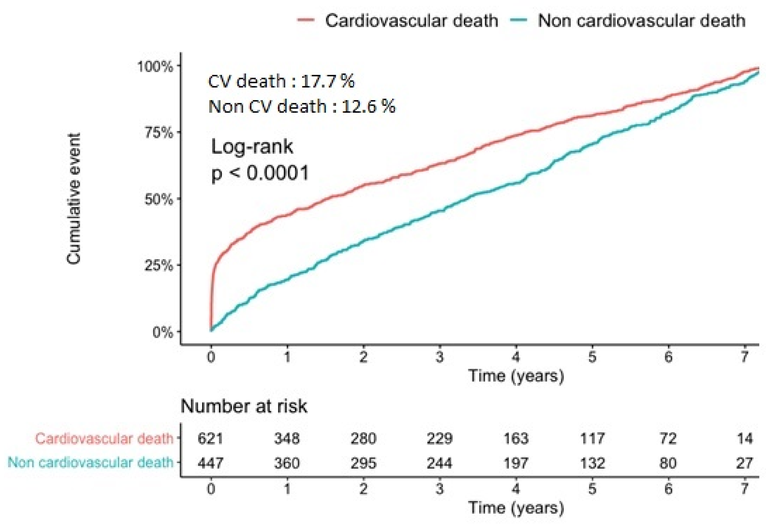


Fig.2 Causes of cardiovascular death

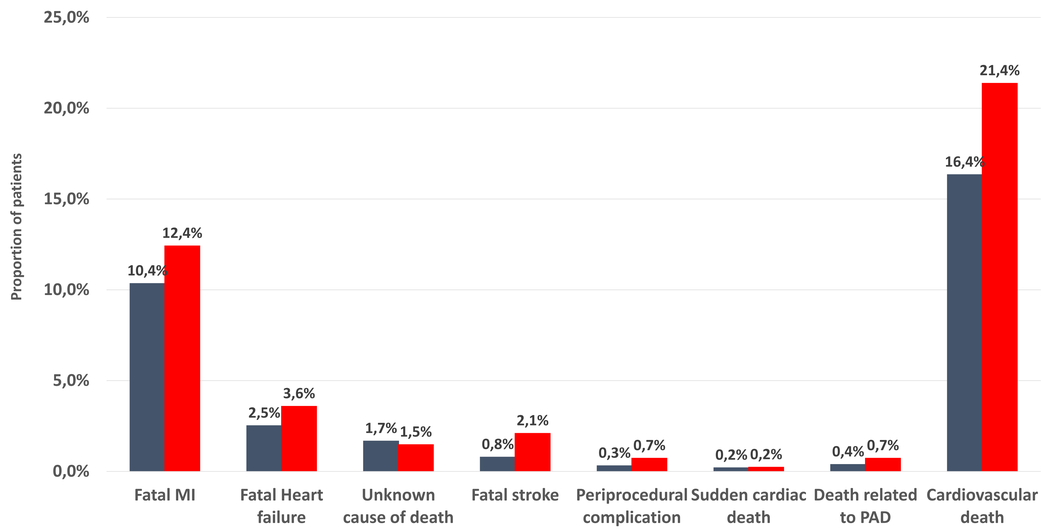
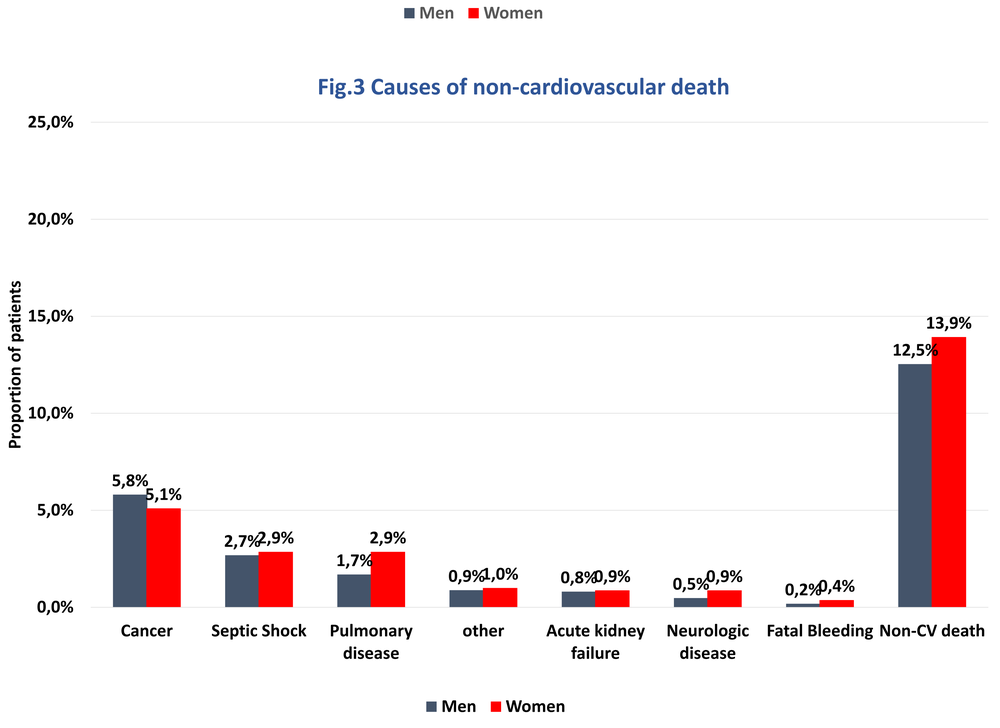


Fig.3 Causes of non-cardiovascular death



Disclosures : MZ : FFC, Institut Servier, BMS/Pfizer ; MK : FFC, institut servier, NH : Philips, GE healthcare, Bayer, Laboratoires Servier, Novartis Pharma, Astra Zeneca, BMS, MSD, FFC, and ICAN JS : Amed, Amgen, Algorythm, Astra-Zeneca, Bayer, Daiichi-Sankyo, Eli Lilly, Fondation de France, Gilead Science, Iroko Cardio, Sanofi-Aventis and Saint-Jude Medical. JPC :AstraZeneca, Bayer, Bristol-Myers Squibb, Daiichi-Sankyo, Eli-Lilly, Fédération Française de Cardiologie, Lead-Up, Medtronic, MSD, Sanofi-Aventis, WebMD. GM : Abbott, Amgen, Actelion, AstraZeneca, Bayer, Boehringer Ingelheim, Boston-Scientific, Bristol-Myers Squibb, Beth Israel Deaconess Medical, Brigham Women's Hospital, Cardiovascular Research Foundation, Daiichi-Sankyo, Idorsia, Lilly, Europa, Elsevier, Fédération Française de Cardiologie, ICAN, Medtronic, Journal of the American College of Cardiology, Lead-Up, Menarini, MSD, Novo-Nordisk, Pfizer, Sanofi, Servier, The Mount Sinai School, TIMI Study Group, WebMD.