

Assessment of coronary artery disease during hospitalization for cancer treatment

Simone M. Mrotzek¹, Alessia Lena^{2,3,4,5}, Sara Hadzibegovic^{2,3,4,5}, Ria Ludwig¹, Fadi Al-Rashid¹, Amir A. Mahabadi¹, Raluca I. Mincu¹, Lars Michel¹, Laura Johannsen¹, Lena Hinrichs¹, Martin Schuler^{6,7}, Ulrich Keller⁸, Stefan D. Anker^{2,4,5}, Ulf Landmesser^{3,4,5}, Tienush Rassaf¹, Markus S. Anker^{2,3,4,5}, Matthias Totzeck¹

¹Department of Cardiology and Vascular Medicine, West German Heart and Vascular Center, Medical Faculty, University Hospital Essen Hufelandstr. 55, 45147 Essen, Germany

²Division of Cardiology and Metabolism, Department of Cardiology, Charité Campus Virchow Klinikum (CVK), Berlin, Germany

³Department of Cardiology, Charité Campus Benjamin Franklin (CBF), Berlin, Germany

⁴Berlin Institute of Health Center for Regenerative Therapies (BCRT), Berlin, Germany

⁵DZHK (German Center for Cardiovascular Research), partner site Berlin, Germany

⁶Department of Medical Oncology, West German Cancer Center, Medical Faculty, University Hospital Essen, Hufelandstr. 55, 45147 Essen, Germany

⁷German Cancer Consortium (DKTK), Partner site University Hospital Essen, Hufelandstrasse 55, 45147 Essen, Germany

⁸Department of Hematology, Oncology and Tumor Immunology, Charité Campus Benjamin Franklin (CBF), Berlin, Germany

Corresponding author:

Dr. Matthias Totzeck

Department for Cardiology and Vascular Medicine

West German Heart and Vascular Center

Medical Faculty, University Hospital Essen

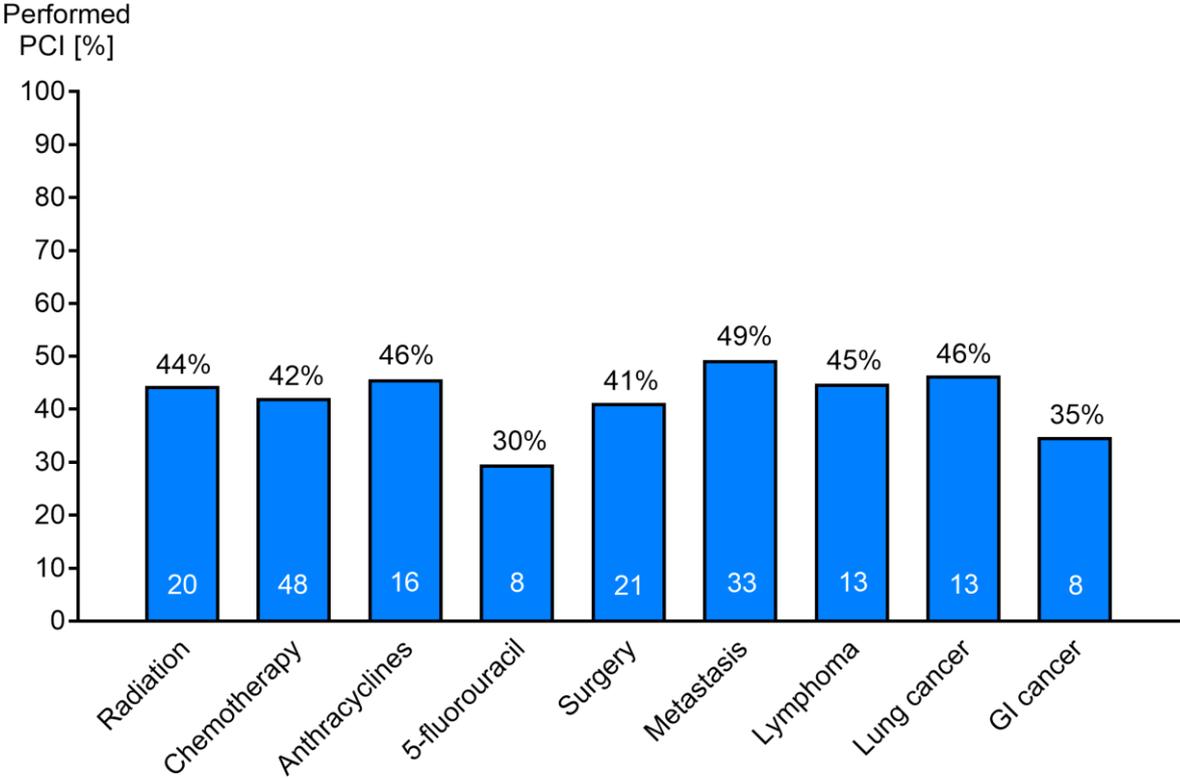
Hufelandstraße 55, 45147 Essen, Germany

Phone: +49 201 723 4818

Fax: +49 201 723 5401

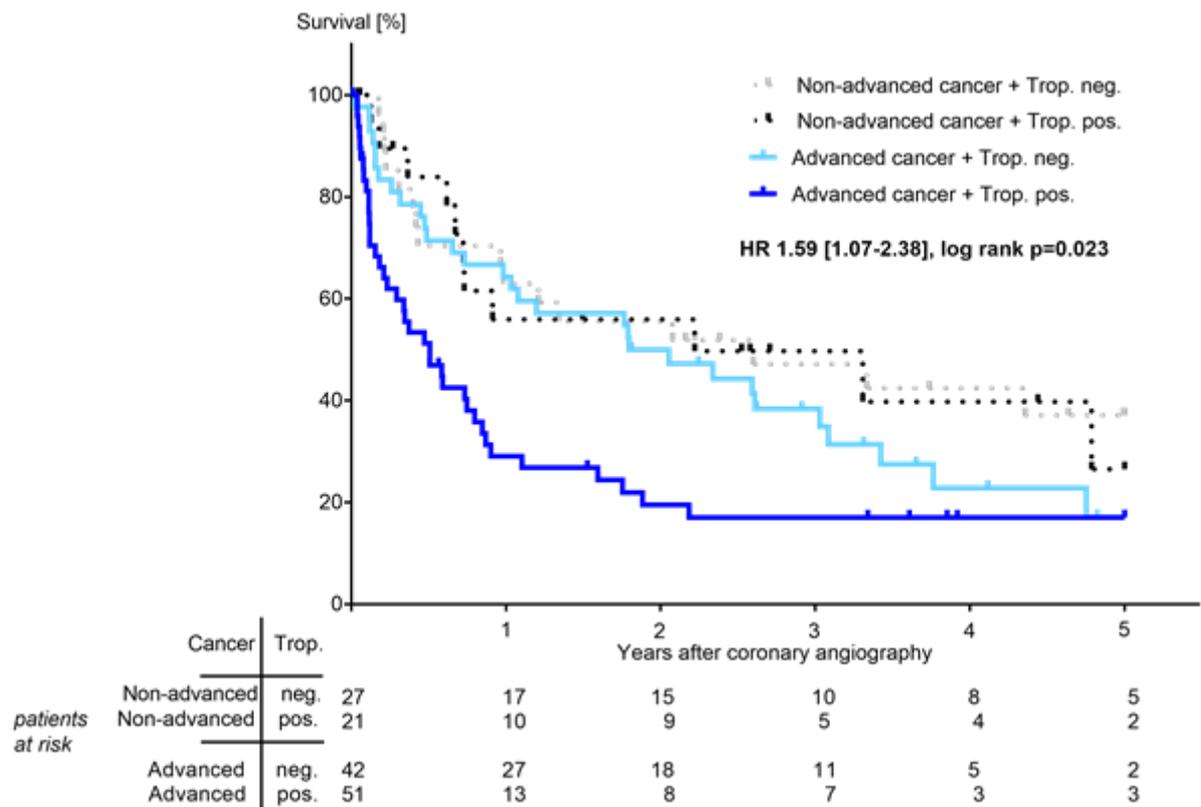
Matthias.Totzeck@uk-essen.de

Supplemental fig. 1



Rate of performed primary percutaneous coronary intervention (PCI) related to cancer therapy and entity showing no significant differences between groups.

Supplemental fig. 2



Five year all-cause mortality of cancer patients divided in advanced and non-advanced cancer with troponin positive acute coronary syndrome (trop. pos./ STEMI and NSTEMI) or troponin negative angina (trop. neg./ unstable and stable angina). Patients with advanced cancer presented with trop. pos. ACS had the highest mortality, log rank (Mantel Cox) p=0.023.

Supplemental table 1

Baseline characteristics of cancer patients with troponin-positive acute coronary syndrome (trop. pos.) vs. troponin-negative angina (trop. neg.)

	Cancer + Trop. neg. (n=77)	Cancer + Trop. pos. (n=76)	P value
Age, years	67.1 (± 11.4)	64.42 (± 11.5)	0.160
Male sex, n (%)	55 (71.4)	57 (75)	0.716
BMI, kg/m²	26.4 (± 4.8)	25.6 (± 4.8)	0.300
Vascular risk factors, n (%)			
Diabetes mellitus	19 (24.7)	18 (23.7)	1.000
Smoking	30 (39.0)	32 (42.1)	0.743
Hypertension	63 (81.8)	58 (76.3)	0.432
Dyslipidemia	37 (48.1)	37 (48.7)	1.000
Medical history, n (%)			
Coronary artery disease	32 (41.6)	24 (31.6)	0.241
Atrial fibrillation	23 (29.9)	16 (21.1)	0.266
PAOD	8 (10.4)	11 (14.5)	0.473
CAOD	2 (2.6)	6 (7.9)	0.167
Stroke	3 (3.9)	9 (11.8)	0.079
COPD	15 (19.5)	17 (22.4)	0.695
Laboratory findings			
Creatinine, mg/dl	1.03 (0.77-1.32)	1.08 (0.86-1.26)	0.900
GFR <60 ml/min/1.73m², n (%)	33 (42.9)	29 (38.2)	0.622
Hb, g/dl	11.1 (± 1.7)	10.6 (± 1.9)	0.300
Platelet count, /nl	221 (174-282)	215 (152-277)	0.600
Reduced EF (<40%), n (%)	11 (14.7)	16 (23.2)	0.207
Medication history, n (%)			
Acetylsalicylic acid	39 (50.6)	31 (40.8)	0.257
Dual antiplatelet therapy	11 (14.3)	4 (5.3)	0.100
Anticoagulation	8 (10.4)	6 (7.9)	0.780
Statin use	24 (31.2)	20 (26.3)	0.593
Beta-blockers	52 (67.5)	45 (59.2)	0.317

BMI body mass index, *PAOD* peripheral artery occlusive disease, *CAOD* cerebral artery occlusive disease, *COPD* chronic obstructive pulmonary disease, *GFR* glomerular filtration rate, *Hb* hemoglobin, *EF* ejection fraction

Data is shown as mean (± SD) or median (IQR)

Supplemental table 2

Results of cardiac catheter examinations in Cancer patients with troponin-positive acute coronary syndrome (trop. pos.) vs. troponin-negative angina (trop. neg.)

	Cancer + Trop. neg. (n=77)	Cancer + Trop. pos. (n=76)	P value
Findings, n (%)			
Multivessel disease	37 (48.1)	44 (57.9)	0.258
Absence of CAD	26 (33.8)	18 (23.7)	0.212
CTO	11 (14.3)	18 (23.7)	0.154
LMCA stenosis	7 (9.1)	11 (14.5)	0.327
Culprit lesion	33 (42.9)	41 (53.9)	0.197
Small vessel disease	31 (40.3)	34 (44.7)	0.625
PCI (any)	25 (32.5)	37 (48.7)	0.049*
DES	12 (15.6)	26 (34.2)	0.009*
BMS	11 (14.3)	13 (17.1)	0.663
SYNTAX-score[†]			
Baseline-Score	2 (0-7)	7 (0-15.25)	<0.001*
Lowest tertile (≤ 22), n (%)	66 (97.1)	56 (83.6)	0.009*
Intermediate tertile (23-32)	2 (2.9)	7 (10.4)	0.096
Highest tertile (≥ 33)	0	4 (6.0)	0.058
Score post PCI[‡]	0 (0)	2 (0-2)	0.170
Residual score >8, n (%)	8 (11.8)	12 (17.9)	0.343
LVEDP[§], mmHg	13 (5.25-16)	15 (7-22.75)	0.158

CAD coronary artery disease, *CTO* chronic total occlusion, *LMCA* left main coronary artery, *PCI* percutaneous coronary intervention, *DES* drug eluting stent, *BMS* bare metal stent, *SYNTAX* SYnergy between PCI with TAXus and cardiac surgery, *LVEDP* left ventricular end-diastolic pressure

Data is shown as median (IQR)

*Statistically significant difference between Trop. neg. vs. Trop. pos. cancer patients

[†]excluded patients with history for coronary artery bypass surgery, included: Cancer + Trop. neg. n=68, Cancer + Trop pos. n=67

[‡]patients with performed PCI: Cancer + Trop. neg. n=21, Cancer + Trop pos. n=37

[§] documented LVEDP: Cancer + Trop. neg. n=57, Cancer + Trop pos. n=53