Age-dependent impact of the SYNTAX-score on longer-term mortality after percutaneous coronary intervention in an all-comer population

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Abstract

Background The Synergy between Percutaneous Coronary Intervention with TAXUS and Cardiac Surgery (SYNTAX)-score is a validated tool for risk stratification and revascularization strategy selection in patients with complex coronary artery disease. The aim of this study was to analyse its age-related prognostic value.

Methods SYNTAX-score was calculated in 1331 all-comer patients undergoing percutaneous coronary intervention (PCI): 463 patients ≥ 75 years and 868 patients < 75 years. Outcomes of interest were all-cause mortality at one and two years.

Results A significant interaction of age and SYNTAX-score for mortality was observed at two-year (Pinteraction = 0.019) but not at one-year follow-up (Pinteraction = 0.594). In multivariable analysis, SYNTAX-score independently predicted 1-year mortality in both age groups (< 75 years, hazard ratio (HR): 1.43, 95% confidence intervals (CI): 1.03–2.00, P = 0.034; and ≥ 75 years, HR: 1.37, 95% CI: 1.01–1.85, P = 0.042), but only two-year mortality among younger patients (< 75 years, HR: 1.33, 95% CI: 1.01–1.76, P = 0.041; and ≥ 75 years, HR: 1.11, 95% CI: 0.87–1.41, P = 0.394). SYNTAX-score tertiles were useful to stratify 1-year mortality in both, patients < 75 years (SYNTAX-score < 9, 3.8%; 9–20, 5.3%; ≥ 20, 10.3%; P = 0.004) and ≥ 75 years old patients (SYNTAX-score < 11, 5.7%; 11–22.5, 16.1%; ≥ 22.5, 18.7%; P = 0.003), but two-year mortality only among patients < 75 years (SYNTAX-score < 9, 3.8%; 9–20, 5.3%; ≥ 20, 10.3%; P = 0.004) and ≥ 75 years (SYNTAX-score < 11, 5.7%; 11–22.5, 16.1%; ≥ 22.5, 18.7%; P = 0.004) and not among ≥ 75 years old patients (SYNTAX-score < 11, 19.4%; 11–22.5, 26.3%; ≥ 22.5, 27.9%; P = 0.138). Conclusions Age modifies the impact of the SYNTAX-score on longer-term mortality after PCI. Among patients < 75 years, the SYNTAX-score independently predicts the risk of death at one and two years after PCI, while among patients ≥ 75 years its predictive role is limited to the first year after PCI. Further studies are needed to evaluate the value of SYNTAX-score for selecting the most appropriate revascularization strategy among elderly patients.

Keywords: Age; Mortality; Percutaneous coronary intervention; Syntax-score; The elderly

1 Introduction

In a progressively aging population, elderly patients increasingly account for a relevant number of cardiovascular patients.[1,2] Coronary artery disease (CAD) is one of the main causes of death in the elderly, especially in patients aged ≥ 75 years.[1,3–6] Unfortunately, despite an increase in referrals for percutaneous coronary intervention (PCI), the elderly are often excluded from randomized clinical trials.

This leads to scarce insights into interventional outcomes and predictors of mortality in this vulnerable population.[1]

The complexity of coronary lesions is an independent predictor of mortality in younger cohorts,[7–11] but it is unclear if this aspect is also predictive of mortality in elderly patients who often present with more complex coronary lesions[3] and various comorbidities.[12] The Synergy between Percutaneous Coronary Intervention with TAXUS and Cardiac Surgery (SYNTAX)-score is an angiographic tool grading the complexity of coronary artery disease. It was originally developed for the SYNTAX trial where it proved to be an independent predictor of long-term major adverse cardiac and cerebrovascular events (MACCE) in patients undergoing PCI.[13,14] Numerous subsequent studies
have validated the SYNTAX-score and confirmed its predictive value for outcomes after PCI in various clinical settings.\textsuperscript{[15]} In stable CAD patients with left main or three-vessel disease, the SYNTAX-score is currently recommended as a decision tool to guide revascularization strategy with either coronary artery bypass grafting (CABG) or PCI.\textsuperscript{[16–18]} Of note, although there was no upper age limit for inclusion in the SYNTAX trial, the mean age of patients was only 65 ± 10 years.\textsuperscript{[14]}

Due to the fact that the risk-to-benefit-ratio of PCI is less clear in elderly patients, interventional cardiologists are frequently careful in undertaking PCI in this high-risk population. Therefore, it is of high relevance to investigate what impacts the outcome after PCI in elderly patients to better adapt therapeutic strategies in this cohort. The aim of this registry study was to investigate whether age modifies the impact of the SYNTAX-score on one-year and two-year mortality.

2 Methods

2.1 Study population

Data from all consecutive patients undergoing PCI between January 2013 and March 2014 at the Department of Cardiology of the Ludwig-Maximilians University, a tertiary referral center in Munich, Germany, were collected in a registry. Only 145 patients with prior CABG were excluded. Follow-up was performed by telephone calls or structured follow-up letters.

2.2 SYNTAX-score

For each patient, the SYNTAX-score was calculated by means of the online SYNTAX-score calculator (available at http://www.syntaxscore.com).\textsuperscript{[19]} Evaluation included three general variables (dominance, the total number of lesions and vessel segments involved per lesion as well as the presence of diffuse/small vessel disease) and eight anatomical variables (length of stenosis, involvement of bifurcations or trifurcations, aortic ostial localization, chronic occlusion, vessel tortuosity, calcification and thrombus formation) in each lesion with ≥ 50% luminal obstruction in vessels ≥ 1.5 mm. Finally, the score of each lesion was added to obtain the patient’s SYNTAX-score.\textsuperscript{[13,14]} The SYNTAX-score was calculated by two experienced cardiologists blinded to clinical data. Discrepancies were resolved by consensus. The limitations of the SYNTAX-score regarding ST-segment elevation myocardial infarction (STEMI) patients are well known. In these cases, we followed previously used methods, scoring an occluded infarct-related artery as an occluded artery of < 3 months duration.\textsuperscript{[20–22]}

2.3 Clinical endpoints

Outcomes of interest were all-cause and cardiac mortality at one-year and two-year after PCI. In deceased patients source documents were solicited for verification of the event.

2.4 Statistical methods

The aim of this study was to assess whether age modifies the impact of the SYNTAX-score on one-year and two-year mortality. Classification of patient ≥ 75 years as elderly was chosen in line with previous publications.\textsuperscript{[23–25]} We assessed the interaction of age and SYNTAX-score on one-year and two-year mortality by entering the interaction term into the respective Cox proportional hazards model. We also assessed the capacity of the SYNTAX-score to appropriately stratify the mortality risk at one year and two years after PCI in elderly and younger patients. Therefore, patients ≥ 75 years and < 75 years were classified according to their tertile distribution of the SYNTAX-score into low, intermediate and high SYNTAX-score. Mortality in these groups was assessed using the Kaplan-Meier method and compared using the log-rank test. Multivariable cox regression analysis was used to assess independent correlates of mortality. Variables that differed with P-value < 0.1 in the univariable analysis were entered into the multivariable model. Normality was tested by means of the Kolmogorov-Smirnov test. Continuous data are expressed as mean ± SD or median [interquartile ranges (IQR)] and compared with the unpaired Student’s t-test or Wilcoxon test, respectively. Categorical data are expressed as numbers and percentages and compared with the chi-squared test, or Fisher’s Exact test in case of cell values < 5. A two-side P-value < 0.05 was considered to indicate statistical significance. Statistical analyses were performed with S-PLUS version 4.5 (Insightful Corporation).

3 Results

3.1 Study population

We included a total of 1331 patients, 463 patients (35%) ≥ 75 years [median age 80.1 (IQR: 77.1–84.0) years] and 868 patients (65%) < 75 years [median age 64.8 (IQR: 56.8–70.4) years]. Follow-up at two years was complete in all but 25 patients (1.9% of all patients), 7 patients (1.5%) ≥ 75 years and 18 patients (2.1%) < 75 years old. Mean follow-up duration in these patients was 633 ± 99 and 580 ± 57 days, respectively (P = 0.203).

3.2 SYNTAX-score

Median SYNTAX-score was 15 (IQR: 8–25) in the
overall population with higher scores in patients ≥ 75 years compared to younger patients [16 (IQR: 9–23) vs. 15 (IQR: 7–23), P = 0.002] (Figure 1). Residual SYNTAX-score calculated after PCI was also higher in patients ≥ 75 years (5 [0–12] vs. 2 [0 – 8], P < 0.001).

3.3 Baseline clinical and angiographic characteristics

Baseline clinical and angiographic characteristics in patients < 75 years and ≥ 75 years are summarized in Table 1. Elderly patients were significantly more often female with a lower body mass index (BMI), and had more comorbidities, including chronic kidney disease, arterial hypertension, history of malignancy, reduced left ventricular ejection fraction and multi-vessel disease.

3.4 Clinical outcomes at one year

At one year, cumulative incidence of all-cause mortality was 9.1% (n = 121) in the overall population, 13.8% (n = 64) among patients ≥ 75 years and 6.6% (n = 57) among patients < 75 years (P < 0.001). There was no significant interaction of age with SYNTAX-score regarding one-year mortality (Pinteraction = 0.594).

Survival curves according to tertiles of the SYNTAX-score for patients ≥ 75 years and patients < 75 years are shown in Figure 2. Tertiles of SYNTAX-score were able to stratify one-year mortality risk in patients < 75 years, [1st tertile (< 9): 3.8%, 2nd tertile (≥ 9 and < 20): 5.3% and 3rd tertile (≥ 20): 10.3%; P = 0.004] and in patients ≥ 75 years [1st tertile (< 11): 5.7%, 2nd tertile (≥ 11 and < 22.5): 16.1%, and 3rd tertile (≥ 22.5): 18.7%; P = 0.003].

3.5 Clinical outcomes at two years

At two years, cumulative incidence of all-cause mortality was 15% (n = 199) in the overall population, 24.6% (n = 114) among patients ≥ 75 years and 9.8% (n = 85) among

Table 1. Baseline characteristics in patients < 75 years and ≥ 75 years.

|                        | ≤ 75 years old | ≥ 75 years old | P     |
|------------------------|----------------|----------------|-------|
| Age, yrs               | 64.8 (56.8–70.4) | 80.1 (77.1–84.0) | < 0.001 |
| Women                  | 203 (23%)       | 175 (38%)      |       |
| Body mass index, kg/m² | 26.9 (24.4–29.8) | 25.5 (23.4–28.0) | < 0.001 |
| Chronic kidney disease | 162 (19%)       | 177 (38%) (177/463) | < 0.001 |
| Arterial hypertension  | 670 (77%)       | 408 (88%)      | < 0.001 |
| Diabetes mellitus      | 203 (23%)       | 106 (23%)      | 0.839 |
| History of PCI         | 153 (18%)       | 92 (20%)       | 0.314 |
| History of PCI         | 275 (32%)       | 160 (35%)      | 0.287 |
| Malignancy             | 54 (6%)         | 46 (10%)       | 0.014 |
| LVEF < 50%             | 475 (55%)       | 288 (62%)      | 0.009 |
| Clinical presentation  |               | 0.109          |       |
| Stable angina pectoris | 390 (44.9%)     | 205 (44.3%)    |       |
| Unstable angina pectoris | 111 (12.8%)    | 63 (13.6%)     |       |
| NSTEMI                  | 206 (23.7%)     | 130 (28.1%)    |       |
| STEMI                   | 161 (18.5%)     | 65 (14%)       |       |
| Coronary artery disease|               | 0.028          |       |
| 1-vessel               | 240 (28%)       | 100 (22%)      |       |
| 2-vessel               | 255 (29%)       | 134 (29%)      |       |
| 3-vessel               | 373 (43%)       | 229 (50%)      |       |
| Complex lesions (type B2 or C) | 604 (70%) | 324 (70%) | 0.881 |
| Access route           |               | 0.057          |       |
| Femoral                | 858 (99%)       | 450 (97%)      |       |
| Radial                 | 10 (1%)         | 12 (3%)        |       |

Data are presented as n (%) or median (interquartile ranges). LVEF: left ventricular ejection fraction; NSTEMI: non-ST segment elevation myocardial infarction; PCI: percutaneous coronary intervention; STEMI: ST-segment elevation myocardial infarction.
Figure 2. Mortality for patients < 75 years and ≥ 75 years according to tertiles of the SYNTAX-score. (A): In patients < 75 years, risk stratification for mortality using SYNTAX-score tertiles was possible at one and two years; (B): in patients ≥ 75 years, risk stratification for mortality using SYNTAX-score tertiles was possible only at one year. PCI: percutaneous coronary intervention; SYNTAX: Synergy between Percutaneous Coronary Intervention with TAXUS and Cardiac Surgery.

Survival curves according to tertiles of the SYNTAX-score for patients ≥ 75 years and patients < 75 years are shown in Figure 2. In patients < 75 years, tertiles of SYNTAX-score were able to stratify two-year mortality risk [1st tertile (< 9): 6.5%; 2nd tertile (9–20): 7.6%; 3rd tertile (≥ 20): 15%; P < 0.001]. In contrast, in patients ≥ 75 years, tertiles of SYNTAX-score were not able to stratify two-year mortality risk [1st tertile (< 11): 19.4%; 2nd tertile (11–22.5): 26.3%; 3rd tertile (≥ 22.5): 27.9%; P = 0.138].

3.6 Predictors for one-year mortality

Predictors for one-year mortality according to univariable and multivariable Cox proportional hazards models in patients < 75 years and ≥ 75 years are shown in Table 2. The SYNTAX-score was an independent predictor for both, patients < 75 years [hazard ratio (HR): 1.43; 95% confidence interval (CI): 1.03–2.00; P = 0.034] and ≥ 75 years [HR: 1.37, 95% CI: 1.0–1.85; P = 0.042].

Other independent predictors for mortality in both groups included chronic kidney disease, acute coronary syndrome (ACS) at presentation, malignancy and reduced left ventricular ejection fraction (LVEF).

Table 2. Predictors for one-year mortality in patients < 75 years and ≥ 75 years old.

|                     | < 75 years old, n = 868 | ≥ 75 years old, n = 463 |
|---------------------|------------------------|------------------------|
|                     | Univariable analysis | Multivariable analysis | Univariable analysis | Multivariable analysis |
| SYNTAX-score        | 1.95 (1.42–2.67)       | 1.43 (1.03–2.00)       | 1.62 (1.24–2.13)     | 1.49 (0.90–2.43)       |
| Age, yrs            | 1.31 (0.82–2.10)       | 0.254                  | 1.99 (0.90–4.43)     | 0.089                  |
| Women               | 0.52 (0.2–1.11)        | 0.090                  | 0.68 (0.32–1.46)     | 0.320                  |
| Body mass index, kg/m² | 0.95 (0.70–1.27)     | 0.709                  | 0.62 (0.42–0.91)     | 0.015                  |
| Chronic kidney disease | 3.89 (2.31–6.55) | < 0.001                | 2.68 (1.53–4.70)     | 0.001                  |
| Diabetes mellitus   | 1.81 (1.05–3.11)       | 0.033                  | 1.58 (0.93–2.68)     | 0.089                  |
| Arterial hypertension | 0.49 (0.28–0.83) | 0.009                  | 0.71 (0.36–1.39)     | 0.314                  |
| ACS at presentation | 2.88 (1.55–5.34)       | < 0.001                | 2.17 (1.26–3.74)     | 0.005                  |
| Malignancy          | 2.89 (1.42–5.88)       | 0.003                  | 2.17 (1.26–3.74)     | 0.005                  |
| LVEF < 50%          | 4.61 (2.26–9.40)       | < 0.001                | 4.06 (2.01–8.22)     | < 0.001                |

Data are presented as Hazard Ratio (95% CI). ACS: acute coronary syndrome; LVEF: left ventricular ejection fraction; SYNTAX: Synergy between Percutaneous Coronary Intervention with TAXUS and Cardiac Surgery.
ventricular ejection fraction (LVEF). In addition, low BMI was also an independent predictor for mortality in elderly patients and arterial hypertension in younger patients.

### 3.7 Predictors for two-year mortality

Predictors for two-year mortality according to univariable and multivariable Cox proportional hazards models in patients < 75 and ≥ 75 years are shown in Table 3. In the univariable analysis, the SYNTAX-score was significantly associated with mortality in both, younger patients (HR: 1.90, 95% CI: 1.46–2.47, P < 0.001) and elderly patients (HR: 1.28, 95% CI: 1.03–1.60, P = 0.041) and elderly patients (HR: 1.11, 95% CI: 1.03–1.60, P = 0.027). However, after adjustment for covariates in the multivariable analysis, the SYNTAX-score was an independent predictor for mortality only in patients < 75 years (HR: 1.33, 95% CI: 1.01–1.76, P = 0.041) but not in patients ≥ 75 years (HR: 1.11, 95% CI: 0.87–1.41, P = 0.394).

Other independent predictors for mortality in both groups included age, chronic kidney disease, malignancy and reduced LVEF. In addition, arterial hypertension was an independent predictor for mortality in younger patients, low BMI and diabetes mellitus in elderly patients.

### 4 Discussion

In this registry of unselected patients undergoing PCI, we assessed whether age modifies the impact of the SYNTAX-score on one-year and two-year mortality after PCI.

The main findings can be summarized as follows: (1) there was a significant interaction of age and SYNTAX-score regarding two-year mortality, which was not evident at one year; (2) in multivariable analysis the SYNTAX-score was an independent predictor for one-year mortality irrespective of age, but for two-year mortality only in patients < 75 years; and (3) risk stratification for mortality using SYNTAX-score tertiles was possible in both age groups at one year but only for the younger patients at two years.

Briefly, the SYNTAX-score is a validated routine angiographic tool that assesses the number of coronary lesions as well as their location and complexity. It is recommended as a decision-making tool for the individual revascularization strategy in European and US guidelines and expert consensus papers. The SYNTAX-score has proved to be strongly predictive of MACCE in younger patients (mean age 65.3 ± 9.6 years) treated with PCI but not CABG. The prognostic value of the SYNTAX-score regarding mortality was also shown at different points in time up to five years after PCI, as well as in the context of various clinical settings. Despite the fact that those studies were performed in large cohorts, elderly patients were underrepresented.

There is a main gap of knowledge concerning the appropriate risk stratification and patient selection in the growing population of elderly patients with CAD. Therefore, the aims of our analysis were to evaluate whether the prognostic impact of the SYNTAX-score is age-dependent, as well as to analyze the SYNTAX-score’s age-dependent value for risk stratification and predictive role in multivariable analysis at different time points after PCI. Our results confirm and extend previous results on the predictive value of the SYNTAX-score in elderly patients, which are currently limited to a few, small studies.

Two retrospective studies including 70 elderly patients (mean age: 87.0 ± 2.5 years) and 114 elderly patients (mean age: 79.6 ± 4.1 years) with ACS found that the SYNTAX-score is associated with increased mortality at 30 days in the univariable analysis. Yet, multivariable analysis

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**Table 3. Predictors for two-year mortality in patients < 75 years and ≥ 75 years old.**

|                  | < 75 years old, n = 868 |                  | ≥ 75 years old, n = 463 |
|------------------|-------------------------|------------------|-------------------------|
|                  | Univariable analysis    | Multivariable analysis | Univariable analysis    | Multivariable analysis |
|                  | Hazard ratio P          | Hazard ratio P    | Hazard ratio P          | Hazard ratio P          |
| SYNTAX-score     | 1.90 (1.46–2.47) < 0.001| 1.33 (1.01–1.76) 0.041| 1.28 (1.03–1.60) 0.027| 1.11 (0.87–1.41) 0.394|
| Age, yrs         | 1.90 (1.24–2.90) 0.003| 1.59 (1.03–2.45) 0.038| 3.06 (1.73–5.41) < 0.001| 2.18 (1.19–4.02) 0.012|
| Body mass index, kg/m² | 0.87 (0.68–1.11) 0.260|                       | 0.64 (0.48–0.85) 0.002| 0.68 (0.51–0.92) 0.012|
| Chronic kidney disease | 5.47 (3.57–8.37) < 0.001| 3.36 (2.11–5.34) < 0.001| 1.65 (1.15–2.39) 0.007| 1.54 (1.04–2.26) 0.031|
| Diabetes mellitus | 1.85 (1.19–2.89) 0.007| 1.45 (0.89–2.34) 0.132| 1.72 (1.16–2.55) 0.007| 1.50 (1.00–2.26) 0.048|
| Arterial hypertension | 0.61 (0.38–0.96) 0.032| 0.60 (0.37–0.96) 0.035| 0.93 (0.53–1.62) 0.785|                       |
| ACS at presentation | 1.74 (1.11–2.73) 0.017| 1.39 (0.87–2.21) 0.168| 1.41 (0.97–2.06) 0.074| 1.31 (0.87–1.96) 0.193|
| Malignancy        | 3.47 (1.99–6.06) < 0.001| 2.81 (1.56–5.07) < 0.001| 3.01 (1.92–4.73) < 0.001| 3.39 (2.11–5.43) < 0.001|
| LVEF < 50%        | 4.46 (2.51–7.91) < 0.001| 2.68 (1.46–4.93) 0.002| 2.47 (1.58–3.84) < 0.001| 2.19 (1.36–3.52) 0.001|

Data are presented as Hazard Ratio (95% CI). ACS: acute coronary syndrome; LVEF: left ventricular ejection fraction; SYNTAX: Synergy between Percutaneous Coronary Intervention with TAXUS and Cardiac Surgery.
was performed only in one study and limited to the evaluation of the predictive value of the SYNTAX-score regarding the length of hospital stay. However, results are in line with our study showing that in the elderly the SYNTAX-score is predictive for short-term mortality not only in univariable but also multivariable analysis up to one-year.\textsuperscript{[35]}

Results concerning the predictive role of the SYNTAX-score on outcomes at one year and beyond in elderly patients are still scarce. In a study of 114 ACS patients $\geq$ 75 years, the SYNTAX-score was a predictor of the composite of major adverse cardiac events at one year after PCI in univariable analysis.\textsuperscript{[36]} Another study focused on the predictive value of the SYNTAX-score in a markedly older patients cohort and evaluated 308 very elderly patients (from 80 to 89 years old) undergoing PCI. It showed that the SYNTAX-score is not an independent predictor of one-year mortality in this population.\textsuperscript{[37]} This evidence together with our results suggests an attrition of the predictive value of the SYNTAX-score regarding longer-term mortality with growing age. Therefore in the elderly, the predictive value of the SYNTAX-score seems to be limited to short- and medium-term mortality. Our results thereby question the routine use of the SYNTAX-score among patients $\geq$ 75 years to select the type of revascularization and underline the necessity to adapt end points and time frames for follow-up according to age in this complex cohort of CAD patients.

In elderly patients, the value of the SYNTAX-score for predicting longer-term mortality is probably outweighed by other factors which have yet to be defined. In our study, younger and elderly patients shared many independent risk factors for one-year and two-year mortality after PCI. In line with previous results, clinical aspects such as chronic kidney disease, malignancy and reduced left ventricular function were highly predictive of mortality in both age groups.\textsuperscript{[5,12,38,39]} As these variables were significantly more present in the elderly patients, they probably contributed to the higher mortality in this cohort. The combination of clinical variables with anatomical risk scores has been shown to optimize risk stratification in complex CAD patients. For instance, the SYNTAX-score II, developed from the SYNTAX trial cohort and validated externally in the DELTA registry,\textsuperscript{[40]} showed improved prediction of four-year mortality in patients with three-vessel and left main coronary artery disease when compared to the anatomical SYNTAX-score alone.\textsuperscript{[41]} In elderly patients, few small studies have evaluated the predictive value of the SYNTAX-score II\textsuperscript{[37]} and the combination of the SYNTAX-score with the EURO-Score\textsuperscript{[42]} and found the combination of angiographic and clinical variables superior for risk stratification in this cohort. More data are required to optimize risk stratification tools and individualized decision-making in older patients.

A relevant aspect may be the frailty of the elderly patients, defined as an increased vulnerability and including for instance factors as weight loss beside other relevant criteria. Frailty has emerged as a marker of biological age and has been shown to correlate with a significantly higher three-year mortality after revascularization.\textsuperscript{[43]} In our study, the elderly patients presented with a significantly lower BMI, which also was an independent predictor of mortality in this cohort. Frailty might therefore be discussed as an additional parameter in risk scores for elderly presenting for PCI.

Elderly patients frequently present with more complex multivessel disease. A recent study evaluated if higher mortality rates in elderly patients were related to a high residual SYNTAX-score, a correlate of incomplete revascularization. Results suggested that the residual SYNTAX-score may not be predictive of one-year mortality in octogenarians.\textsuperscript{[44]}

4.1 Limitations

Our study has the inherent limitations of a retrospective and monocentric study. As the impact of the SYNTAX-score was only analyzed in patients undergoing PCI, there may be a selection bias by excluding patients who were treated medically or had not undergone PCI following angiography. Also, the assessment of the SYNTAX-score might be subject to inter- and intra-observer variability.

4.2 Conclusions

Among patients undergoing PCI, there is a significant interaction of age and SYNTAX-score regarding mortality at two but not at one year. While SYNTAX-score is robust in predicting one year mortality independently of age, there is a loss of the predictive value of SYNTAX-score regarding two-year mortality with increasing age. These findings suggest that other co-morbidities than the severity of CAD may play an important role for longer term mortality in elderly CAD patients. Further studies are needed to evaluate the value of the SYNTAX-score for risk stratification and selection of the most appropriate revascularization strategy in this population.

Disclosures

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