Percutaneous coronary intervention in elderly patients with chronic kidney disease and non-ST segment elevation acute coronary syndrome – is it worth it?


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ESC guidelines recommend revascularization in patients (pts) with chronic kidney disease (CKD) irrespective of age. However, elderly pts are usually underrepresented in the available data on percutaneous coronary intervention (PCI). Thus, the decision on whether to perform PCI in these pts is usually at the discretion of the cardiology team.

Aim: To evaluate the impact of PCI vs conservative approach (CA) in elderly pts (>80 years) with CKD and unstable angina (UA)/non-ST segment elevation myocardial infarction (NSTEMI) who were enrolled in the Portuguese National Registry of Acute Coronary Syndromes. To determine impact of CKD in in-hospital (IH) and long-term outcomes, including MACE (myocardial infarction, stroke and death) and death at 1 year.

Study population: Elderly pts admitted with UA and NSTEMI, from 2010 until 2021. There were three different groups: Group 1 – eGFR ≥60 ml/min/1.73 m²; Group 2 – eGFR between 30 and 59 ml/min/1.73 m² and Group 3 – eGFR <30 ml/min/1.73 m². Pts with ST-segment elevation myocardial infarction and cardiogenic shock were excluded.

Results: A total of 2443 pts, of which 921 (37.7%) were submitted to PCI. 50.2% (n=1126,) were from the group 1, 38.5% (n=941) from group 2 and 11.3% (n=276) from group 3.

Regarding overall population, pts submitted to PCI were mainly male (60.4%) with a mean age of 84±3 years old. They had previous history of PCI (21.6% vs 15.1%, p<0.001), less history of heart failure (HF), stroke or dementia (8.5% vs 16.5%, 8.1 vs 13.3% and 2.1 vs 5.9%, p<0.001). At presentation they had more angina (88.8% vs 81.2%, p<0.001), less NT-proBNP levels (387 vs 561 p<0.001) and were more frequently in KK class I (75.6% vs 70.2%, p<0.004). They developed less HF (21% vs 27%, p<0.001) and MACE (5.7% vs 9.1%, p<0.003). Pts in the group 3 were less submitted to PCI (27.5% vs 38.2% vs 39.6%, p<0.001) and had more MACE and cardiovascular death when comparing to group 2 and 1 (16.1% vs 8.7% and 10.0% vs 5.5% and 2.6% p<0.001 respectively).

Comparing PCI vs CA in each group, there was no difference in IH outcomes between both strategies in group 3. The same was not true for groups 1 and 2, in which PCI seemed to favor overall outcomes (p=0.001 and p=0.015 respectively).

The predictors of IH death and MACE were: age (OR 1.068 p=0.010), dementia (OR 2.376 p=0.015), KK class >1 (OR 2.243, p<0.001), atrial fibrillation (OR 1.605, p=0.046), not having PCI (OR 0.309, p<0.001), eGFR <30 (OR 3.51, p<0.001) and PCI in pts with eGFR <30 (OR 2.92, p=0.019).

Interestingly, survival analysis showed that pts submitted to PCI in all 3 groups (including group 3) had a longer 1-year survival (p=0.001, p=0.001 and p=0.004).

Conclusions: PCI performance in elderly pts with CKD should be individualized. In our population, especially in group 3, the performance of PCI is associated with a higher IH mortality, however, after surviving hospitalization, these pts seem to have a benefit in 1 year survival.