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Cardiovascular mortality in chronic kidney disease patients undergoing percutaneous coronary intervention is mainly related to impaired P2Y₁₂ inhibition by clopidogrel

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Objectives: To determine whether low platelet response to the P2Y₁₂ receptor antagonist clopidogrel as assessed by VASodilator Stimulated Phosphoprotein flow cytometry test (VASP-FCT) has the same deleterious clinical impact in patients with or without chronic kidney disease (CKD) undergoing percutaneous coronary intervention (PCI).

Background: Whilst both CKD and impaired platelet responsiveness to clopidogrel are strong predictors of unfavourable outcome after PCI, the deleterious impact of their association is unknown. The platelet VASP-FCT assay is specific of the P2Y₁₂ ADP receptor-pathway. In this test, platelet activation is expressed as Platelet Reactivity Index (PRI).

Methods: 440 unselected patients (CKD: 126 (eGFR<60 ml/min/1.73m²), NoCKD: 314 eGFR>60 ml/min/1.73m²) undergoing urgent (n=336) or planned (n=104) PCI were prospectively enrolled. In each sub-group, patients were classified as low-responders (LR: PRI≥61%) and responders (R: PRI<61%) to clopidogrel. The 61% threshold was previously defined as the optimal cut-off value to predict cardiac death following PCI.

Results: At a mean follow-up of 9±2 months, cardiac death, probable and possible stent thrombosis rates were higher in CKD patients. In this sub-group, cardiac death, total stent thrombosis and MACE were dramatically increased in LR patients, especially when treated with drug eluting stent (DES). Conversely, in NoCKD patients, LR was not associated with poorer cardiovascular outcome. Multivariate analysis identified Killip class ≥ 3, DES implantation and the interaction between LR and CKD (HR 11.96 [1.22-116.82]; p = 0.033) as independent predictors of cardiac death.

Conclusions: In CKD patients, cardiovascular mortality following PCI is mainly related to impaired P2Y₁₂ inhibition.

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Acute coronary syndrome in octogenarians : what challenges beyond age?

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Purpose: Octogenarians with acute coronary syndrome (ACS) represent both a challenge and a dilemma to the clinicians as they frequently present with important co-morbidities. We sought to characterize octogenarian patients admitted with an ACS.

Methods: A total of 1959 patients consecutively admitted with ACS were reviewed. We compared patients of 80 years or more to the others in order to characterize them beyond age. Independent predictors of six-month prognosis were determined among octogenarian patients. The end point was six-month mortality. **Results:** We compared the characteristics of 251 octogenarians (mean age, 84 ± 3 years) with those of 1708 younger patients (mean age, 62 ± 12 years). Octogenarians were more frequently women; they more often had arterial hypertension and renal insufficiency (p <0.05). There were no differences regarding ACS presentation but octogenarians presented more frequently with Killip class higher than one at admission (p <0.05). Octogenarians were less likely to be medicated with β-blocker (p <0.05). Although elderly patients less often underwent coronariography, there were no differences regarding percutaneous revascularization. The ACS in octogenarians were more frequently complicated with cardiogenic shock and mechanical complications, as well as

with major noncardiac conditions that strongly and negatively influenced the six-month mortality. When considering only octogenarians, independent and positive predictors of six-month mortality were cardiogenic shock, major noncardiac condition and lower nadir haemoglobin concentration while negative predictors were β-blocker and angiotensin-converting enzyme inhibitor use during in-hospital stay.

Conclusions: Octogenarians represented 10.8% of our ACS patients. These elderly patients presented worse prognosis at six-months that appeared more strongly linked to the occurrence of major cardiac and noncardiac complications that to the use of invasive strategy and coronary revascularization.

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Predictors of failure of EXPORT® thrombectomy in patients with myocardial infarction treated by percutaneous coronary intervention with an aspiration device : data from the RICO Survey.

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Background :Thrombus aspiration is applicable in a large majority of patients with ST-segment elevation myocardial infarction (STEMI), and it results in better reperfusion and clinical outcomes than conventional PCI. However, some aspiration procedures remain none productive. Then, the aim of the present study was to determine the baseline clinical and /or angiographic characteristics of a none effective thrombectomy.

Methods : Consecutive patients who benefited from thrombus aspiration and primary or rescue angioplasty, were included. The end point was effective or none effective aspiration defined by the presence of atherothrombotic material in the aspirate samples.

Results : Among the 180 patients included, material was collected in 155 patients (86 %). The baseline characteristics are presented in table 1.

Table 1 – Baseline characteristics

Thrombectomy	Not effective	Effective	p
Men (%)	80 %	69 %	NS
Age (years, mean ± SD)	70 ± 15	62 ± 14	< 0.05
Heart Rate (mean ± SD)	81 ± 23	74 ± 21	NS
Systolic Blood pressure (mm Hg, mean ± SD)	150 ± 32	134 ± 27	<0.005
Delay symptoms-reperfusion (min, mean ± SD)	504 ± 572	641 ± 1064	NS
Culprit lesion (%)			
Left anterior artery	48 %	35 %	NS
Circumflex artery	8 %	9 %	NS
Right artery	36 %	52 %	NS
AHA classification			
AHA A	0 %	3 %	NS
AHA B1	24 %	27 %	NS
AHA B2	76 %	70 %	NS
AHA C	0 %	1 %	NS
Visible thrombus (%)	28 %	61 %	0.005
Length (mm)			
< 10mm	0 %	3 %	NS
10 – 20 mm	48 %	47 %	NS
> 10 mm	52 %	50 %	N
Calcification (%)	60 %	37 %	0.048

In multivariate analysis, the ability to remove the clot is negatively influenced by: a) age>70 years [OR(95%CI): 5.459 (1.943-15.339); p=0.001 b) admission systolic blood pressure [OR(95%CI): 1.028 (1.010-1.048); p=0.003] and c) no thrombus seen on the angiography [OR(95%CI): 0.220 (0.074-0.651), p=0.006]