

In multiple linear regression analysis, diabetes, age and obesity are important risk factors that influence the presence of aortic calcifications. Diabetes, hypercholesterolemia, heredity, and smoking are significant risk factors that influence the presence of coronary stenosis. And two independent predictive risk factors for coronary stenosis are identified: aortic calcifications and hypercholesterolemia. The presence of aortic calcifications is the most significant predictor with OR = 102.040 (CI: [9.764 - 1066.429]).

Conclusion The discovery of aortic calcifications on chest x-ray or echocardiography in a relatively young subject should therefore be an incentive to search for other potentially threatening arterial diseases, such as coronary artery disease.

Disclosure of interest The authors declare that they have no competing interest.

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Management of left main coronary artery disease. A real-life experience of a Tunisian center

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Background In patients with left main coronary artery (LMCA) stenosis, PCI with drug-eluting stents may be an acceptable alternative to CABG. However, data from African subcontinent are lacking. **Purpose** We sought to evaluate trends in treatment strategies of LMCA disease over time in Sahloul University Hospital and to compare early and long-term adverse outcomes of each therapeutic option.

Methods From 2005 to 2016, 260 patients with unprotected LMCA were included. In total, 102 patients underwent Surgery, 109 patients underwent PCI and 49 patients were medically treated.

Results Over time, the proportion of patients treated with PCI rather than CABG increased substantially. Patients treated with PCI had more anterior ST-segment elevation myocardial infarction (MI) and cardiogenic shock at presentation compared to CABG group. More patients treated with CABG had multivessel disease, more distal LMCA bifurcation and higher SYNTAX scores. All the other baseline variables were similar. After a follow-up of 39 ± 26 months in PCI group and 52 ± 38 months in CABG group, there were no differences between PCI and CABG, at the adjusted analysis, in the rate of myocardial infarction (MI) (HR: 1.75; 95% CI: 0.55 to 5.50; $P=0.33$), cerebrovascular accidents (CVA) ($P=0.69$), and the composite of MACCE (HR: 1.04; 95% CI: 0.59 to 1.83; $P=0.88$). Compared to PCI group, CABG group has a higher all-cause mortality ($P=0.017$) driven exclusively by an elevated incidence of operative mortality (13.7% vs. 6.4%; HR: 0.08; 95% CI: 0.017 to 0.43; $P=0.003$). Nevertheless, long-term advantage of CABG over PCI was the less need for repeated revascularization (HR: 3.1; 95% CI: 1.26 to 8.12; $P=0.014$). Medically treated patients produced a four-year all cause death rate of 44%.

Conclusion Revascularization therapy of LMCA stenosis have evolved remarkably over the last decade in our faculty. PCI and CABG show comparable safety. However, repeat revascularization is more common after PCI.

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Agatston calcium score, CHA2DS2-VASc and HAS-BLED in patients before atrial fibrillation ablation

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Background Clinical scores of thrombo-embolism risk (CHA2DS2-VASc) and hemorrhagic risk (HAS-BLED) have been developed to characterize the patients with non-valvular atrial fibrillation. These scores have been defined in part with clinical risk factors of atherosclerosis. Before their ablation, a coronary computed tomography angiography enables to determine the Agatston calcium score (coronary artery calcium score) which is a atherosclerosis marker.

Purpose In this study, we tried to find out a link between the Agatston calcium score and the CHA2DS2-VASc, as well as between the Agatston calcium score and the HAS-BLED.

Methods In total, 344 atrial fibrillation subjects were included in our observational and retrospective study between January 1st, 2013 and January 1st, 2017, in the same institute. All of these patients had undergone a coronary computed tomography angiography.

Results Three hundred and seventeen patients were included in this study: 233 men (73.5%) and 84 women (26.5%), with an average age of 60.4 years. Agatston calcium score was significantly higher in the subjects with CHA2DS2-VASc score ≥ 2 ($P < 0.00001$); for men ($P < 0.000000001$ for a CHA2DS2-VASc ≥ 2) and for women too ($P = 0.03$ for CHA2DS2-VASc ≥ 3).

This link is also found between the Agatston calcium score and the HAS-BLED score ≥ 2 ($P < 0.0000000001$) (Fig 1).

Conclusion This study shows a strong link between the atherosclerosis marker determined by CT (coronary artery calcium score), the thrombo-embolism risk score (CHA2DS2-VASc) and the hemorrhagic risk score (HAS-BLED) determined by clinical elements in patients with non-valvular atrial fibrillation.

		Score CHA2DS2-VASc			P
		0	1	≥ 2	
Agatston calcium score	0	30 (44,1%)	35 (42,2%)	37 (22,3%)	<0,00001
	1 à 99	25 (36,8%)	27 (32,6%)	40 (24,1%)	
	100 à 399	10 (14,7%)	6 (7,2%)	28 (16,8%)	
	400 à 999	1 (1,5%)	8 (9,6%)	29 (17,5%)	
	≥ 1000	2 (2,9%)	7 (8,4%)	32 (19,3%)	

Fig. 1 Comparison between CHA2DS2-VASc and Agatston calcium score.

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Predictors and prognosis of spontaneous reperfusion in acute myocardial infarction

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Background ST elevation myocardial infarction (STEMI) remains one of the most frequent emergencies, requiring an as early as possible reperfusion that may result, in some cases, from physiological fibrinolysis.

Objective We aimed to analyze the clinical characteristics of patients presenting with clinical markers of spontaneous reperfusion (SR) during acute myocardial infarction, and to evaluate its effect on hospital prognosis.

Methods We retrospectively reviewed data for 1785 patients admitted for STEMI. The patients were divided into SR group (spontaneous relief of chest pain less than 5 on a scale from 0 to 10, and ST segment elevation resolution of more than 50% from baseline) and non-SR group (the remaining population). The clinical and prognostic features of the patients were analyzed.

Results The incidence of SR in our population was 10.4% of patients ($N=187$). SR patients were younger (57.6 vs. 61.1 years; $P=0.002$) and had a higher prevalence of current smoking (77.9% vs. 65.9%; $P=0.003$) and less myocardial damage as indicated by lower peak creatine kinase (1158 vs. 2022 UI/l; $P<0.001$).

In hospital mortality (3.2% vs. 10%; $P=0.013$), heart failure (8.4% vs. 19.7%; $P=0.001$), atrial fibrillation (0.6% vs. 7.3%; $P=0.002$) and acute pericarditis (0% vs. 4%; $P=0.011$) were significantly lower for SR patients.

Multivariate analysis found smoking as the only predictor factor of SR (OR = 1.82, 95% CI [1.2–2.7]; $P=0.003$).

Conclusion Our data shows that SR decreased infarction size, improved heart function and reduced mortality. The subgroup of STEMI with SR carries a more favorable prognosis.

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In-hospital mortality from ST-segment elevation myocardial infarction (STEMI): Evolution and predictors according to the MIRAMI registry

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Background STEMI is the leading cause of death in the world. Thanks to urgent reperfusion endeavours, a significant reduction in the in-hospital mortality has been reported worldwide.

Purpose To describe the evolution of the in-hospital mortality post STEMI between 1995 and 2015 and to identify the predictors of this mortality.

Methods This is a retrospective, mono-centric, descriptive and analytical study from the MIRAMI (Monastir Acute Myocardial Infarction) registry including 1686 patients admitted for STEMI in the cardiology department of the "Fattouma Bourguiba" University Hospital in Monastir-Tunisia between January 1995 and December 2015.

Results The mean age was 60.48 ± 12.64 years; 80.8% were male. The main cardio-vascular risk factors were smoking (66.5%), diabetes (37.8%), and hypertension (31.3%). In-hospital mortality was 9.6% (162 patients), but statistically insignificant fluctuations over the years were reported ($P=0.133$). The two leading causes of death were cardiogenic shock (43.20%) and ventricular arrhythmia (20.37%). A higher in-hospital mortality was associated with female (<0.001), elderly patients (<0.001), and first medical contact (FMC) >6 h ($P=0.002$). Urgent reperfusion was achieved in 58.7% of cases with a general trend towards primary angioplasty ($P<0.001$). Nevertheless, it was associated

with higher mortality ($P=0.005$). In univariate analysis, angioplasty with balloon and TIMI 0/1 flow post angioplasty were predictors of in-hospital mortality ($P<0.001$). Four independent predictors of in-hospital mortality were reported: Mechanical ventilation (OR = 36.65, 95% CI = 17.28–77.75, $P<0.001$), the use of inotropes/vasopressors (OR = 7.25, 95% CI = 3.75–14.01, $P<0.001$), anaemia (Hb <12 g/dl) (OR = 2.13; 95% CI = 1.13–4.02, $P=0.02$) and FMC >3 h (OR = 1.07, 95% CI = 1.02–1.13, $P=0.002$).

Conclusion Despite improvement in the management of STEMI, in-hospital mortality has remained relatively stable. However, in the last years this mortality has experienced a significant decline.

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Chronic total occlusion percutaneous coronary intervention: Short and medium term results

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Introduction Coronary chronic total occlusion (CTO) angioplasties are considered the most complex of angioplasties requiring experienced operators as well as many specific materials and techniques.

Purpose This study aims to identify the predictors of success or failure of CTO angioplasty and to evaluate the short- and medium-term results of this procedure.

Material and methods This study is a single-centric retrospective comparative study including patients who underwent CTO angioplasty in the cardiology "A" department at Fattouma-Bourguiba Hospital during the period between January and 2008 and December 2015.

Results Our study included 200 patients with attempt of CTO angioplasty. The mean age was 63 ± 8.63 years and the mean number of cardio-vascular risk factors was 2.67. Acute coronary syndrome was the main indication (57.5%) for coronarography. A multi-truncal coronary status was reported in 53.5% of the cases. The mean J-CTO score was 1.42 ± 1.3 and 44% of lesions were estimated difficult to very difficult. The anterograde approach has been the most used technique. The angiographic success of ATL has been reported in 106 patients (53%). DES were implanted in 69.9% of cases. The leading cause of angioplasty failure was the impossibility to cross the lesion by the wire. The procedural complications occurred in 11.5% of cases. The independent predictors of ATL failure were: dyslipidaemia, a bending >45 degrees ($P<0.001$), a diameter of the occluded vessel <3 mm ($P<0.001$) and JCTO score ≥ 2 ($P<0.001$). Short- and medium-term clinical follow-up showed that the success of ATL, compared to failure, decreased significantly the rate of angina recurrence ($P<0.001$), re-hospitalization ($P=0.012$) and major adverse cardio-vascular events "MACE" ($P=0.006$), but without significant impact on mortality.

Conclusion The results of our study showed a clinical benefit of CTO angioplasty in case of success and demonstrated once more many failure predicting angiographic factors.

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