

6th ACST-2 Collaborators' Meeting in Valencia,
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Hidden coronary disease in carotid patients



Valerio Tolva
Policlinico di Monza
Italy



Are we always aware of coronary anatomy?



- Ischemic stroke and coronary artery disease share common risk factors and similar pathological mechanisms
- The prevalence of coronary artery disease (CAD) among patients undergoing elective vascular surgery has been reported to be between 46% and 71%
- Post-operative coronary complications are observed in around 20% of cases and an incidence of cardiac death at 1 year between 6 to 10%

- Hertzner in 1984 reported before major vascular surgery that 60% of these patients have one or more coronary arteries with > 70% stenosis, **including 18% with severe triple vessel disease** and 4% with left main disease
- Den Dekker found that the prevalence of significant coronary artery disease was 56.8% in vascular surgery patients without cardiac complaints

- 40 PATIENTS with severe carotid stenosis (A.Adams Cardiol Res. 2018;9(1):22-27)

In the final analysis five subjects had entirely smooth coronary arteries, six had coronary sclerosis, eight had a 30% stenosis, one patient had a 30-50% stenosis and 23 patients had a stenosis \geq 50%. A coronaric stent was inserted into five of these patients and **two patients underwent emergency bypass surgery following a coronary angiogram (both patients had main stem stenosis, three-vessel disease)**

«ALL COMERS» ARE WELCOME IN CATH-LAB!!!!???



The amazing cath lab team in Policlinico di Monza

Haste makes waste...sometime

- Systematic pre-operative coronary angiography followed by selective CABG prior to major vascular surgery is not free from potential complications, and raises risk-benefit issues
- **CARP trial and the DECREASE-V study** found no benefit of pre-operative coronary revascularization over medical therapy before vascular surgery

- The ESVS and AHA guidelines recommended coronary angiography only when, after **positive** non invasive testing, a patient was considered at risk of peri-operative cardiac complications.

- Is non invasive cardiac tests predictable and safe?
 - Stress tests: exercise/pharmacological
 - 30% are considered not diagnostic or false negative
 - In selected cases stress test is dangerous due to arterial pressure rebound
 - If we consider 100 patients with >70% carotid stenosis:
 - 30 could have a severe coronary stenosis
 - Considering only the non invasive cardiac stress tests we could have 9 patients (30% of 30pts) at risk for post-operative MACE or cardiac death

- Coronary Computed Tomography Angiography in 2018 is trustable
 - Carries important prognostic information in addition to the detection of obstructive CAD
 - Shows an increase in mortality risk associated with the presence of proximal CAD manifestation comparable with the risk of clinical risk factors **like smoking or an increase in “vascular” age of 5 years**
 - **Increases the stochastic risk for radiation related lesions**
 - **Increases the risk for kidney complications in patients with low glomerular filtration rate**



- **Policlinico di Monza experience (01/2016 -12/2017;192 patients)**

- **192 patients**
 - **175 asymptomatic**
 - **15 symptomatic**



Asymptomatic Carotid Surgery Trial (ACST-2)



Policlinico di Monza (01/2016 -12/2017;175 patients)



Outpatients Department
Vascular Ultrasound Lab

Asymptomatic patients
(carotid and cardiac)



Upper trunk angioCT scan

Hospitalization

coronarography

No severe CAD

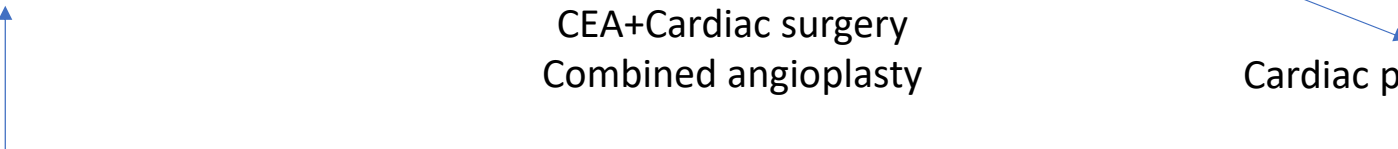
Main trunk with bilateral
carotid lesions

Main trunk or severe or multiple
coronary lesions

Carotid surgery

CEA+Cardiac surgery
Combined angioplasty

Cardiac procedures



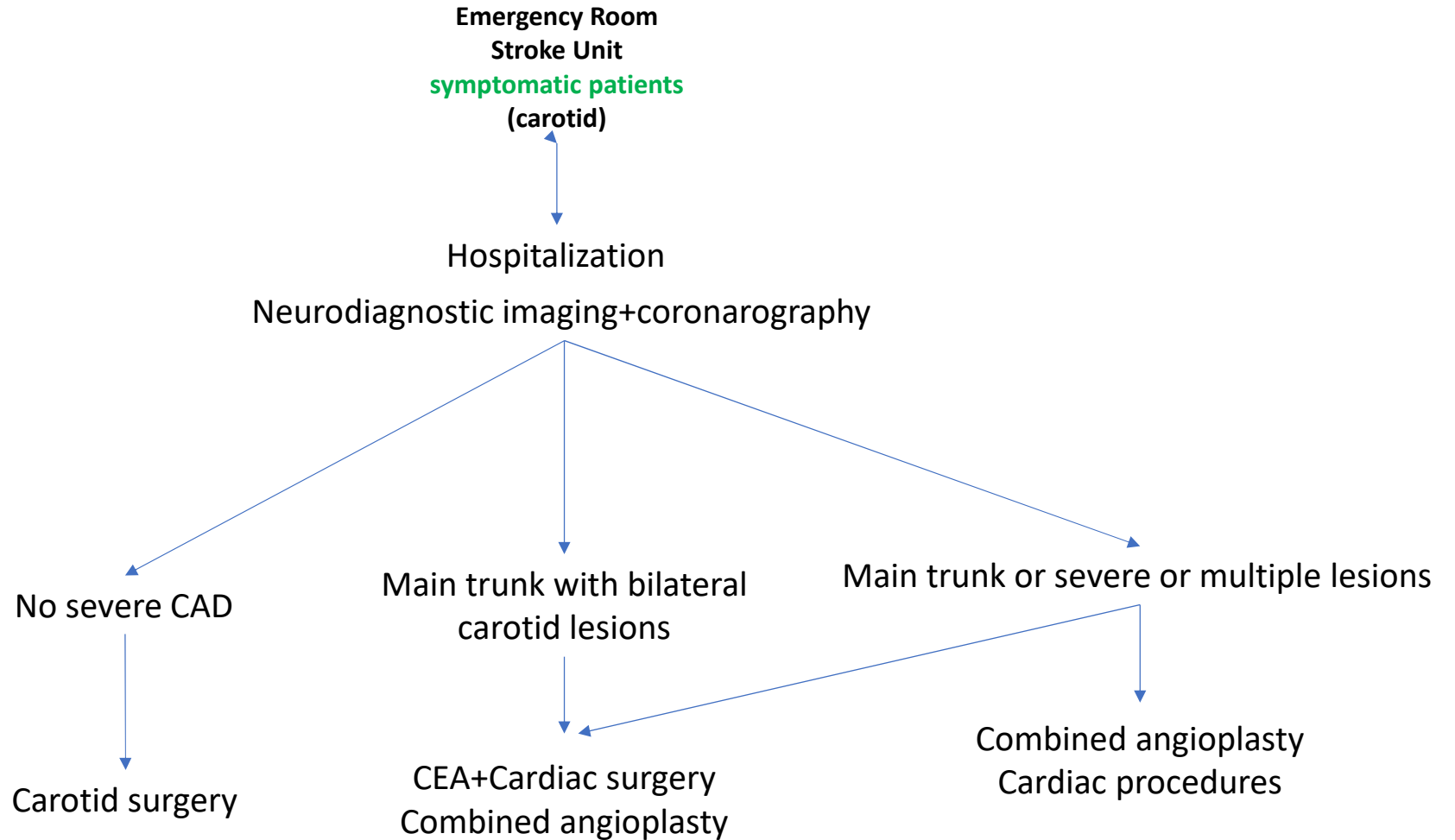
After 3-6 months



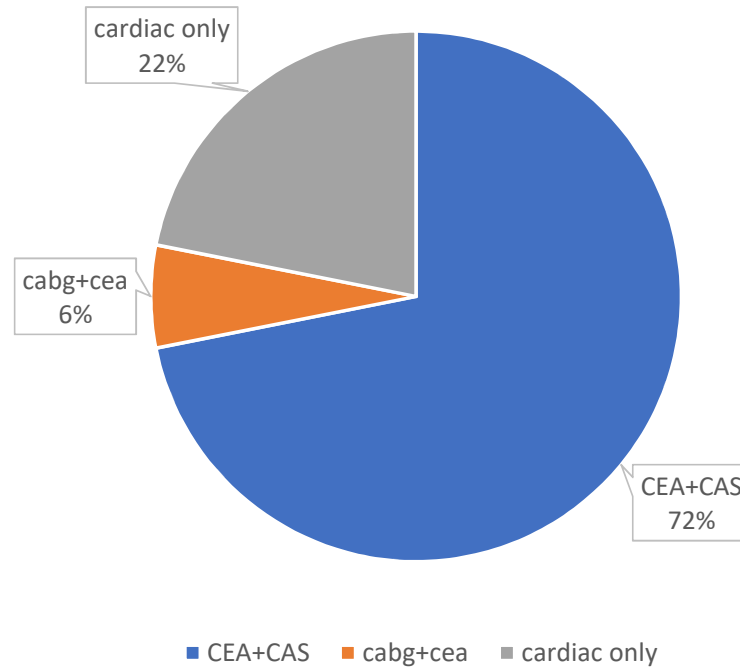
Asymptomatic Carotid Surgery Trial (ACST-2)



Policlinico di Monza (01/2016 -12/2017;15 patients)



Monza experience



Mortality: 0%

Morbidity: 0.5%; 1 patient; CEA only; TIA; dismissed Rankin MS: 0



	Carotid + coronary (56)	Carotid only (138)	
Age	71.4±8.6	65.3±14.1	
Male %	84.2	80.2	
BMI	23.4±3.5	23.0±8.2	
Hypertension %	72.4	68.8	
Dyslipidemia %	61.8	56.8	
Diabetes %	27.6	12.5	p 0.014
Smoking %	73.7	64.8	
eGFR	61.1±15.3	69.4±17.8	p0.0045

Key Points

- The prevalence of coronary lesions is higher in patients scheduled for CEA/CAS
- Invasive anatomical studied reduces the risk of postoperative MACE and cardiac events
- Heart rules
- Aggressive combined surgery/angioplasty in a/symptomatic patient should always consider age and biological conditions. BMT should be considered in asymptomatic patients
- In our experience there are no clear markers to identify an higher or a lower risks for combined lesions in patients candidate for CEA or CAS

THANK YOU

