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The European Society of Cardiology and the Latest Guidelines for “Seafarers”: Part II

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Inappropriate left ventricular hypertrophy, known as hypertrophic cardiomyopathy (HCM), is a common disease with an incidence that reaches 0.3% in the adult population. In 60% of cases it is an autosomal dominant disease, caused by mutations of the genes that encode cardiac sarcomeric proteins, chromosomal anomalies, and genetic syndromes.¹ The detection of increased left ventricular wall thickness (>15 mm) in asymptomatic or symptomatic patients (syncope, episodes, dizziness, palpitations, angina, fatigue) triggers a thorough clinical and laboratory investigation, including a detailed familial and individual history, clinical examination, resting electrocardiogram, ambulatory cardiac monitoring, stress testing, and magnetic resonance imaging for the evaluation of underlying myocardial fibrosis, as well as a genetic check of both the patient and all first-degree relatives. Depending on whether symptoms are present and whether there is spontaneous or induced obstruction of the left ventricular outflow tract, the therapeutic interventions range from drug treatment, either alone or in combination with percutaneous or surgical procedures to reduce the thickness of the interventricular septum, to implantation of a dual-chamber pacemaker. An important addition to the recent guidelines is a new algorithm for evaluating the five year risk of sudden death (HCM Risk-SCD), which is based on the maximum wall thickness, the left atrial diameter, the maximum pressure gradient in the left ventricular outflow tract, the family history of sudden cardiac death, the presence of non-sustained ventricular tachycardia, unexplained syncope, and

age, and classifies the patient as low, medium, or high risk for the five-year occurrence of sudden cardiac death (<4%, 4-6%, ≥6%, respectively). In medium- and high-risk patients ICD implantation is recommended for primary prevention of sudden cardiac death, as well as for secondary prevention in patients who have recovered from sudden cardiac death.

It should be stressed that patients with HCM, as well as any first-degree relatives who are affected, require lifelong monitoring, every 0.5-2 years, according to the severity of the underlying disease, with periodic laboratory investigation for the evaluation of cardiac performance, at rest and during exercise, as well as the probability of occurrence of arrhythmias or adverse events, using ambulatory electrocardiographic monitoring.

The new guidelines for aortic diseases,² together with the guidelines for coronary reperfusion and the guidelines for peripheral arterial diseases from 2011, also allow an integrated, evidence-based evaluation and treatment of patients with cardiovascular diseases. In fact, the recent guidelines for aortic diseases, compared with the previous edition in 2001, are not limited only to the diagnosis and management of thoracic aortic dissection, but cover a wide range of disease entities, including aneurysms, calcifications, congenital disorders, tumours, and inflammatory conditions of the thoracic and abdominal aorta. The guidelines place special emphasis on rapid and effective diagnostic and therapeutic approaches, with the latter including drugs, intravascular and surgical strategies, as well as their combinations. In the case of acute aortic syndromes

a special algorithm is provided, which, based on the patient's history, ECG, and haemodynamic condition, recommends an appropriate imaging (chest X-ray, transthoracic or transoesophageal echocardiography, computed tomography or magnetic resonance imaging) or laboratory (D-dimers) examination to confirm or rule out the disease. This algorithm takes account of the pre-test probability of acute aortic syndrome due to the presence of predisposing conditions (Marfan syndrome, family history of aortic disease, known aortic valve disease, known aneurysms of the thoracic aorta, a history of procedures in the aorta), the characteristics of the pain (sudden onset, intense, tearing), and the clinical examination (absence of pulses and arterial pressure difference, focal neurological defects, newly developed aortic diastolic murmur, hypotension or shock) and classifies patients as having a low (0 factors), intermediate (1 factor), or high (>1 factor) clinical probability. In the case of aortic dissection, intramural aortic haematoma, or calcifying aortic ulcer, apart from the immediate regulation of arterial blood pressure and treatment of the pain, surgical repair is recommended for type A aneurysms and haematomas, and drug treatment alone or in combination with intravascular repair for type B. Surgical repair of a thoracic aortic aneurysm is recommended in patients with Marfan syndrome and high-risk features (family history of dissection or rapid rate of growth >3 mm/year), in patients with a bicuspid aortic valve and the same risk factors, and in patients without elastic tissue disorders, when the aortic diameter is ≥ 45 , ≥ 50 and ≥ 55 mm, respectively. Percutaneous repair is recommended for aneurysms of both the ascending thoracic aorta and the abdominal aorta, if the diameter of the aneurysm is ≥ 55 mm.

Patients with diseases of the aorta require periodic monitoring throughout their lives, regardless of the initial therapeutic approach (pharmaceutical, percutaneous, or surgical). This monitoring should include a clinical examination, re-evaluation of medication, and aortic imaging. There is a class IA indication for an echocardiographic examination for abdominal aortic aneurysm in all men aged >65 years, and in women smokers of the same age (class IIBc). For all aneurysms, the guidelines recommend strict control of arterial hypertension, cessation of smoking, and radical treatment of the remaining risk factors, while the administration of statins and angiotensin-converting enzyme inhibitors has a class IIB

indication with level of evidence B. The periodic imaging examination for aneurysms should be repeated every 0.5-4 years, depending on the original size and the risk characteristics of the aneurysm, while in patients with congenital aortic diseases genetic and imaging examinations of first-degree relatives are recommended.

The new guidelines for myocardial reperfusion were based on a systematic review of 100 clinical trials with more than 90,000 patients altogether.³ One basic change is a reduction in the duration of dual antiplatelet medication for patients who undergo non-emergent or elective PCI to 6 months for drug-eluting stents (DES), while a shorter interval (<6 months) may be considered in patients with a high haemorrhagic risk (IIB) who receive new-generation DES. For bare-metal stents, double antiplatelet medication is recommended for only one month. In non ST-elevation acute coronary syndromes, special emphasis is placed on the risk stratification of patients and the timing of the invasive procedure, while at the same time the wide use of GPIIb/IIIa receptor inhibitors is deprecated, with their use being limited only to cases where other antithrombotic therapies fail. In patients with ST-elevation myocardial infarction, the most significant change is the downgrading of bivalirudin from a class I to a class IIa indication, as a result of the HEAT PPCI and EUROMAX trials. There is also a change in the recommended reperfusion technique, given that the new-generation DES have proved comparable to coronary artery bypass grafting (CABG) in isolated proximal lesions of the left anterior descending artery, main-stem lesions with a SYNTAX score ≤ 32 , and in three-vessel disease with a SYNTAX score ≤ 22 . The guidelines stress that the treatment of "complex" cases should be individualised and that therapeutic decisions should be the result of discussions among the cardiac specialist team, mainly represented by the interventional and non-interventional cardiologist and the cardiac surgeon, as well as the patient's own choice. Special reference is made to diabetic patients; since the BARI 2D, MASS II, and the more recent FREEDOM trials, CABG is recommended in all patients with stable multivessel coronary artery disease and acceptable surgical risk. Given that the prevalence and the severity of extracranial carotid artery disease increase with the severity of coronary artery disease, carotid artery imaging is recommended in

all patients who undergo CABG and have a history of stroke or transient ischaemic attack, as well as in patients with multivessel coronary artery disease, peripheral artery disease, or age >70 years. The timing (simultaneous or staged) and the type of intervention (carotid endarterectomy versus carotid artery stenting) depend on the clinical severity and the local experience of the centre. Symptomatic carotid stenoses >50% and asymptomatic bilateral or contralateral stenoses >70%, especially in the case of an ipsilateral silent cerebral infarct, should be repaired.

The recent guidelines of the European society of cardiology summarise all the modern information from large clinical trials and registers and provide us with an invaluable source of documented knowledge over a wide range of cardiovascular diseases and procedures. However, the guidelines are recommendations and not commands.

“Οὐκ ἔνι ἰατρικὴν εἰδέναι, ὅστις μὴ οἶδεν ὅ τι ἐστὶν ἄνθρωπος”

“No-one can know medicine without knowing what it is to be human”

Hippocrates, 460-377 BC

References

1. Elliott PM, Anastasakis A, Borger MA, et al; Authors/Task Force members. 2014 ESC Guidelines on diagnosis and management of hypertrophic cardiomyopathy: the Task Force for the Diagnosis and Management of Hypertrophic Cardiomyopathy of the European Society of Cardiology (ESC). *Eur Heart J.* 2014; 35: 2733-2779.
2. Erbel R, Aboyans V, Boileau C, et al; ESC Committee for Practice Guidelines. 2014 ESC Guidelines on the diagnosis and treatment of aortic diseases: Document covering acute and chronic aortic diseases of the thoracic and abdominal aorta of the adult. The Task Force for the Diagnosis and Treatment of Aortic Diseases of the European Society of Cardiology (ESC). *Eur Heart J.* 2014; 35: 2873-2926.
3. Windecker S, Kolh P, Alfonso F, et al; Authors/Task Force members. 2014 ESC/EACTS Guidelines on myocardial revascularization: The Task Force on Myocardial Revascularization of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS). Developed with the special contribution of the European Association of Percutaneous Cardiovascular Interventions (EAPCI). *Eur Heart J.* 2014; 35: 2541-2619.