

Selected Updates on ESC Guidelines

The New Guidelines Are Here

At its annual congress in Vienna, the European Society of Cardiology presented several new treatment guidelines. The following is an overview of the changes.

Coronary Heart Disease (CHD) Prevention

The new guidelines are more rigorous for both primary and secondary prevention of stroke and myocardial infarction. The formula "0-3-5-140-5-3-0" should be applied in healthy individuals (primary prevention).

- 0 cigarettes
- 3 km of walking or 30 minutes of moderate physical exercise daily
- 5 servings of fruit or vegetables daily
- 140 mmHg as the upper limit for systolic blood pressure
- 5 mmol/l as the limit for total cholesterol (approximately 190 mg/dl)
- 3 mmol/l as the limit for LDL cholesterol (approximately 116 mg/dl)
- 0 excess weight, no diabetes

Lower target values apply to high-risk individuals (secondary prevention):

- BP <130/80 mmHg
- Total cholesterol <175 mg/dl (ideally <155 mg/dl)
- LDL cholesterol <100 mg/dl (ideally <75 mg/dl)
- Glucose <110 mg/dl
- HbA1c <6.5%

The new recommendations place greater emphasis on the importance of exercise and body weight. Accordingly, the BMI/waist circumference parameter has been included in the individual risk assessment tables. Heart rate, renal function and risk factors considered as CHD equivalents represent additional new parameters.

Hypertension

The new hypertension guidelines also place increased emphasis on exercise and weight reduction as key treatment elements. The decision on pharmacological treatment is primarily based on the risk category. The recommended target blood pressure depends on the patient's risk profile. While some blood pressure levels (eg, 130/85 mmHg) are still considered normal in healthy individuals, these values may be excessive for patients with higher risk levels (eg, diabetes or renal insufficiency). Increased attention is paid to the early detection of hypertensive end-organ damage. In this context, the sonographic determination of the intima-media thickness and the identification of microcalcifications via high-resolution CT have gained in importance. The goal no longer is restricted to reducing cardiovascular events, but now extends to preventing the occurrence and progression of subclinical end-organ damage.

NSTE-ACS Diagnosis and Therapy

Guideline changes affect the indication and timing of invasive evaluation. Immediate coronary angiography is recommended in patients exhibiting dynamic ST changes, life-threatening arrhythmia or hemodynamic instability unresponsive to treatment.

Highlights from the
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Angiography should be performed within 72 hours in high- and intermediate-risk patients with stable heart rhythm and hemodynamic status. Elective angiography or no angiography is recommended in patients at low risk. This recommendation emphasizes that not all patients with NSTEMI-ACS necessarily require angiography. Another new aspect is reporting the “number-needed-to-treat” for all pharmacological measures, permitting a cost efficiency calculation. For the first time, special issues such as hemorrhagic complications, chronic renal disease, anemia and female gender are raised, as these factors significantly influence outcome. The indications for the use of basic medications - antianginal drugs, ASA, and clopidogrel - remain largely unchanged from the previous iteration. New guidelines are presented regarding anticoagulation therapy after the introduction of new agents tested in the ACS setting such as fondaparinux and bivalirudin. The type of anticoagulant and the indication for GPIIb/IIIa blocker therapy depend on the individual risk and selected strategy.

Universal Definition of Myocardial Infarction

The efforts to achieve a universal definition and classification of myocardial infarction, which began in 1999, have now come to fruition. The ESC, ACC and WHO all contributed to the process. Globally, the term myocardial infarction should only be used when at least one biomarker is elevated above the upper reference limit in the context of sustained ischemia, and, at least one of the following criteria is met: typical symptoms, new ST elevation (or new left bundle branch block), new Q-wave formation or imaging evidence of new necrosis or a new regional wall motion disturbance. In terms of classification, five types of myocardial infarction are differentiated:

- Type 1: Spontaneous infarction based on stenosing/occluding plaques
- Type 2: Infarctions due to increased oxygen demand or decreased supply not caused by occluding plaques (eg, coronary spasm)
- Type 3: Infarctions with cardiac arrest or sudden cardiac death
- Type 4a: Infarctions associated with PCI or angiography
- Type 4b: Infarctions associated with stent thrombosis
- Type 5: Infarctions associated with bypass surgery

The evaluation of the cardiac biomarker increase in the context of PCI and bypass surgery has changed. The event is only to be classified as an infarction if the levels are three times (PCI) or five times (CABG) higher than

the upper reference limit. Events with lower levels are now to be identified as periprocedural necrosis. Imaging diagnostics have clearly become more important in the new definition. Troponin was confirmed as the most important biomarker.

Valvular Heart Disease

For the first time, European guidelines are now available for the diagnosis and therapy of valvular heart disease (VHD). They are important, since older, multimorbid individuals are increasingly affected by VHD, rendering decisions regarding the further approach difficult at times. The guidelines address the classification of severity, required examinations, indications for valve replacement, possibilities of reconstruction and target values for antithrombotic medication. They support the key role of echocardiography. At the same time, all echocardiographic findings are to include quantitative parameters and an exact description of the lesion. The invasive assessment of valvular function should be reserved for rare cases where echocardiography findings and clinical findings do not correlate. Age represents only one of many factors to be considered when deciding on an intervention. The decision process should be multidisciplinary, including cardiologists, surgeons and anesthesiologists. Less invasive techniques are preferred wherever possible. In mitral insufficiency, the therapy of choice is surgical reconstruction, while percutaneous commissurotomy is preferred in mitral stenosis. In aortic valve disease, valvular replacement continues to be the gold standard.

Cardiac Pacing

For the first time, the European guidelines now include recommendations for cardiac resynchronization therapy in patients with cardiac insufficiency. Indication criteria are persistent symptoms despite optimal basic therapy (NYHA III-IV), and additionally EF \leq 35%, LVEDD $>$ 55mm, QRS width \geq 12 ms with maintained sinus rhythm. Compared with the American guidelines published in 2002, the European guidelines establish a lower QRS width. In addition, the overall available data are considered better (recommendation class I, level of evidence A). Together with the guidelines for the management of ventricular arrhythmia and the prevention of sudden cardiac death (published in 2006), the new guidelines for cardiac pacing ensure the correct use of pacemakers and ICDs.

For the complete version of all new guidelines, please visit the ESC website at www.escardio.org.