18th International Congress of Anesthesiology, Critical Care and Pain

Latest ESC & AHA Pre-Up Evaluation in CAD

Dr. Narges Payani

Cardiac Anesthesiologist · Shahid Beheshti University

18–20 November 2026 · Tehran, Iran · From Innovation to Resilience

About the Speaker



- Cardiac Anesthesiologist
- Shahid Beheshti University
- Research in coagulation systems & pre-up bleeding
- Selected Presentation: “PCC Fibrinogen and Other Pharmaceutical Agents in Cardiac Anesthesia Coagulation management” in the 2nd International congress of cardiac anesthesiology extracorporeal membrane oxygenation (ECMO) in 2019
- Selected Presentation: “Management of Coagulation Disorders After Heart Transplantation” in the international congress of heart failure in 2014
- Published Work: “Effect of Local Fibrinogen Administration on Postoperative Bleeding in CABG Patients” in the journal of cellular and molecular anesthesia (GACM) in 2015
- Published Work: “Effect of IV Active Recombinant Factor VII on Post-operative Bleeding in Cardiac Valve reoperation” in the official journal of the Iranian society of regional anesthesia and pain medicine (ISRAPM) in 2015

Outline

1. Presentation Guide
2. Introduction and Overview of ACC/AHA and ESC Guidelines
3. Preoperative Cardiovascular Risk Assessment
4. Stepwise Evaluation and Diagnostic Testing
5. Perioperative Cardiovascular Management and Guideline Recommendations
6. Postoperative Cardiovascular Surveillance
7. Conclusion and Questions

01

Presentation Guide



Level of Evidence

Level of evidence A	Data derived from multiple randomized clinical trials or meta-analyses.
Level of evidence B	Data derived from a single randomized clinical trial or large non-randomized studies.
Level of evidence C	Consensus of opinion of the experts and/or small studies, retrospective studies, registries.

Class of Recommendations

	Definition	Wording to use
Class I	Evidence and/or general agreement that a given treatment or procedure is beneficial, useful, effective.	Is recommended or is indicated
Class II	Conflicting evidence and/or a divergence of opinion about the usefulness/ efficacy of the given treatment or procedure.	
Class IIa	Weight of evidence/opinion is in favour of usefulness/efficacy.	Should be considered
Class IIb	Usefulness/efficacy is less well established by evidence/opinion.	May be considered
Class III	Evidence or general agreement that the given treatment or procedure is not useful/effective, and in some cases may be harmful.	Is not recommended

02

Introduction and Overview of ACC/AHA and ESC Guidelines



Timing of surgery

In general, acute procedures carry a higher risk of complications than elective procedures. Uniform timing definitions are unfeasible, as the time spans may vary between diseases. These guidelines use the timing definitions below.

- **Immediate:** surgery/intervention should be performed without any delay to save life or organ function.
- **Urgent:** surgery/intervention should be performed without un-necessary delay to save life, limb, or organ function.

Timing of surgery

- **Time-sensitive:** surgery/intervention should be performed as soon as possible as there is a time-dependent risk of losing limb or organ function, or increased risk of complications. Cancer surgery is typically time-sensitive, as is carotid surgery to prevent stroke in a symptomatic case. The time window for time-sensitive surgery will vary depending on the underlying disease.
- **Elective:** surgery/intervention can be performed electively (not further defined) without significant risk of losing limb, or organ function, or increased risks of complications.

Timing of surgery

Clinical situation	ACC/AHA approach reported in the review	ESC approach reported in the review and ESC guideline
Elective surgery after DES for chronic coronary disease	At least 6 months is reasonable.	At least 6 months after elective PCI.
Time-sensitive surgery after DES	May be considered after 3 months when the risk of delay exceeds the perioperative risk.	May be considered after a minimum of 1 month of DAPT after elective PCI; at least 3 months should be considered in high-risk patients.
DES after ACS	At least 12 months for elective surgery.	At least 12 months after ACS.

Recent stent with interruption of antiplatelet therapy | Elective surgery requiring interruption of antiplatelet therapy within 30 days of stent placement is described as [text cut off in the image]. | The ESC guideline emphasizes deferral, thrombotic risk, and the duration of DAPT, with recommendations for recent PCI and high-risk clinical contexts.

03

Preoperative Cardiovascular Risk Assessment



The ACC/AHA emphasis on structured functional assessment

The ACC/AHA review identifies functional capacity as an important component of the preoperative algorithm but questions the reliability of unstructured clinician assessment. It discusses evidence from the Measurement of Exercise Tolerance Before Surgery (METS) study, in which self-reported exercise capacity did not correlate with measured metabolic equivalents or predict postoperative complications as effectively as the Duke Activity Status Index (DASI).

The ESC approach

The ESC guideline uses functional capacity as one element of a larger clinical evaluation. Its recommendation tables identify the Duke Activity Status Index and inability to climb two flights of stairs as measures relevant to the assessment of patients referred for intermediate- or high-risk surgery.

The review reports the following DASI-related thresholds:

Measure	Interpretation reported in the review
DASI>34	Associated with low risk
DASI 25-34	An intermediate range discussed as a possible practical threshold

Key Message

Biomarkers: Troponin and Natriuretic Peptides

This is one of the most clinically significant **differences** between the two documents.

ESC: biomarkers for risk prediction and perioperative myocardial injury

The ESC guideline assigns a prominent role to both high-sensitivity cardiac troponin and BNP/NT-proBNP.

It distinguishes their physiological significance:

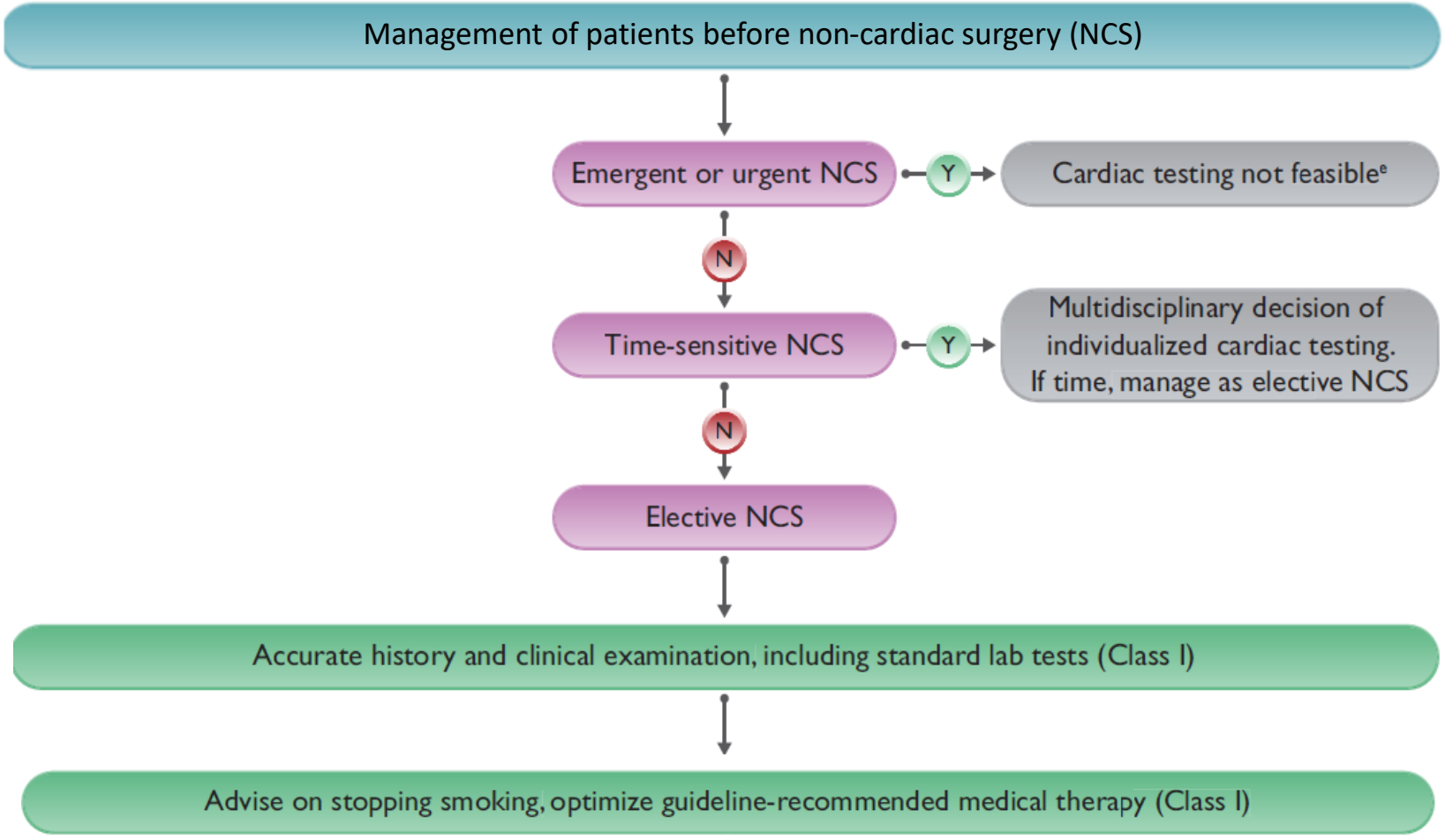
- High-sensitivity cardiac troponin T/I quantifies myocardial injury.
- BNP and NT-proBNP quantify hemodynamic cardiac wall stress.

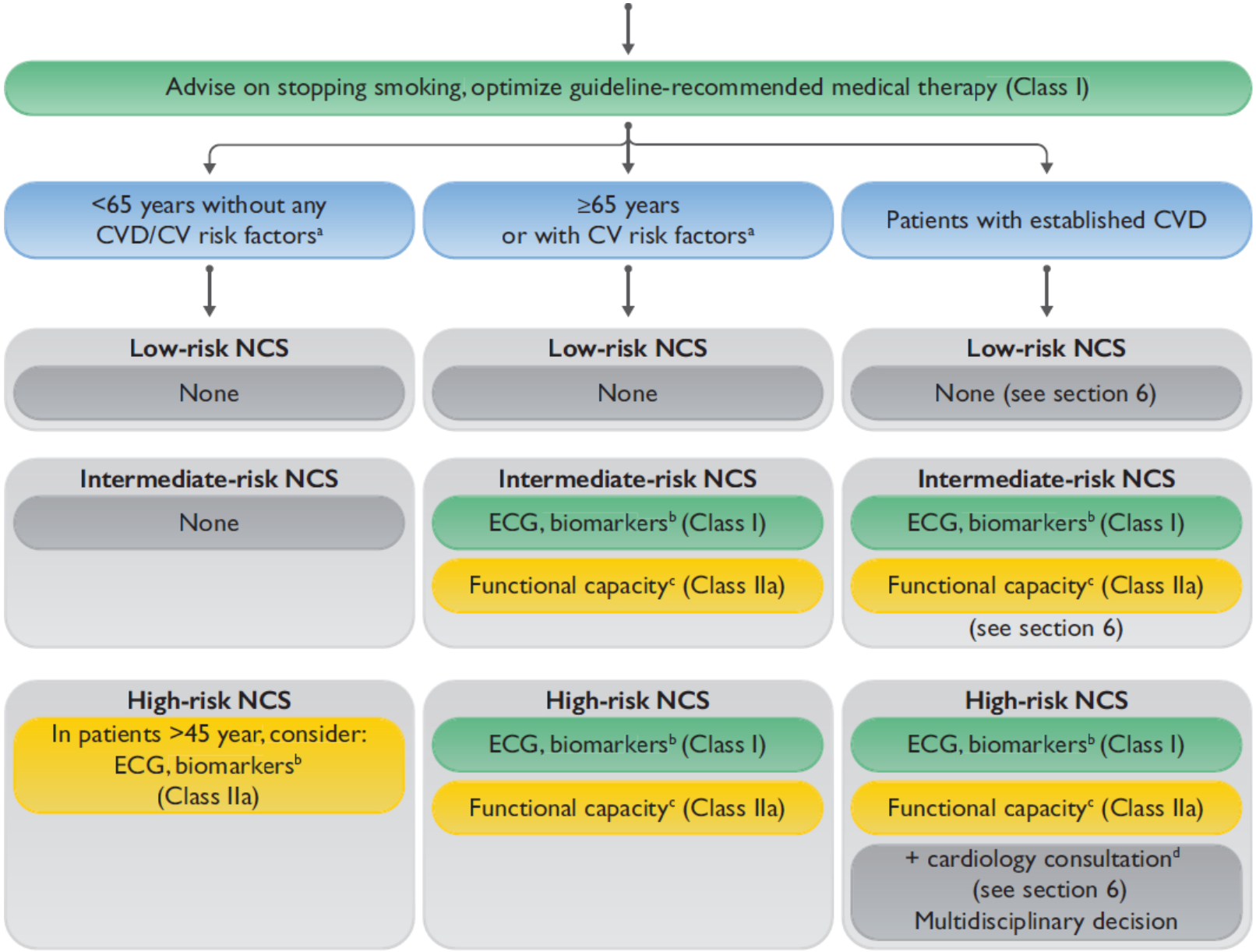
The ESC guideline recommends measuring high-sensitivity troponin before intermediate- and high-risk noncardiac surgery, and at 24 and 48 hours afterward, in patients with established cardiovascular disease, cardiovascular risk factors (including age ≥65 years), or symptoms suggestive of cardiovascular disease. It also recommends considering BNP or NT-proBNP before intermediate- and high-risk surgery in the relevant patient groups.

04

Stepwise Evaluation and Diagnostic Testing



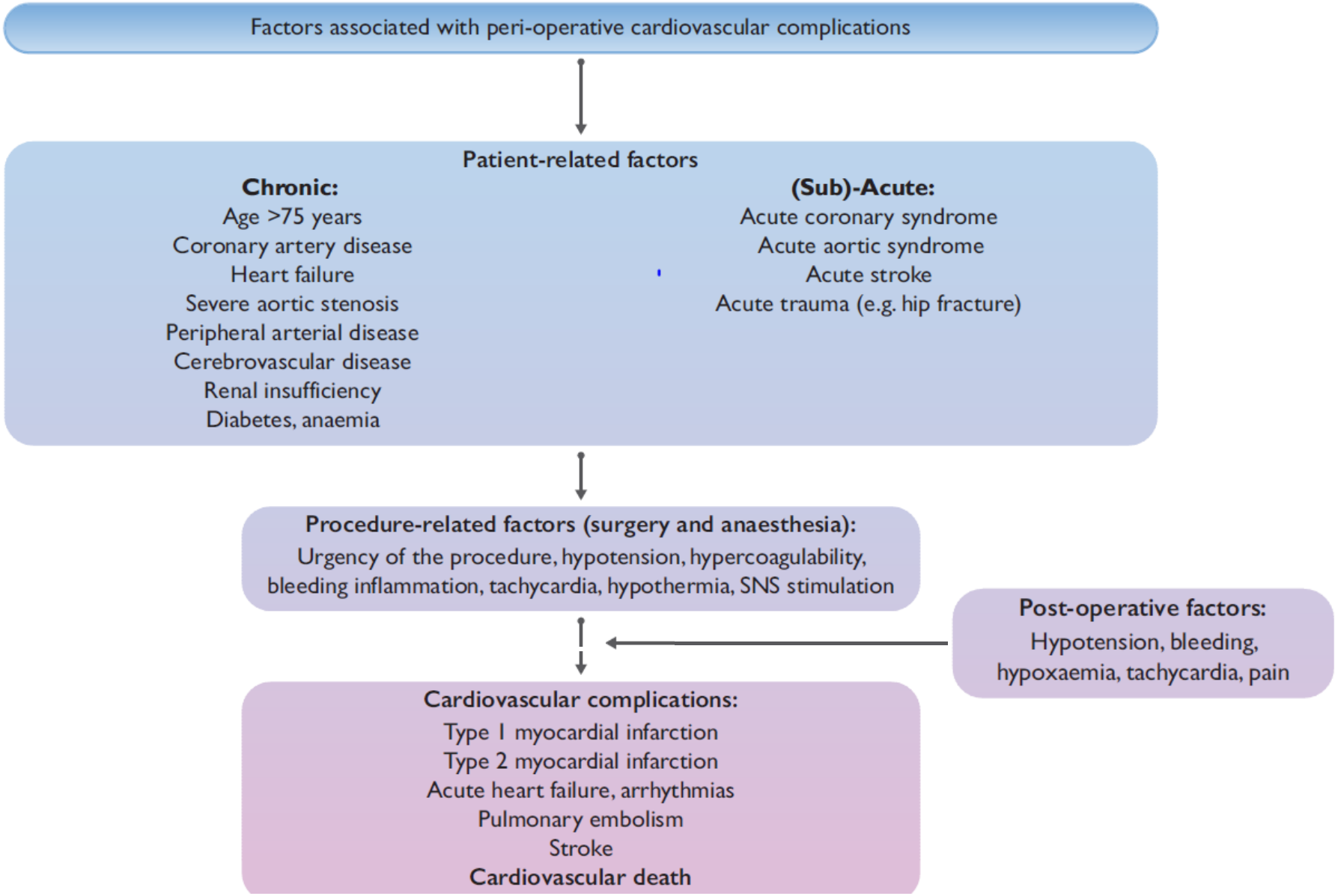

Management of patients before non-cardiac surgery (NCS)
Emergent or urgent NCS
Y
Cardiac testing not feasible[e]
N
Time-sensitive NCS
Y
Multidisciplinary decision of individualized cardiac testing. If time, manage as elective NCS
N
Elective NCS
Accurate history and clinical examination, including standard lab tests (Class I)
Advise on stopping smoking, optimize guideline-recommended medical therapy (Class I)


Advise on stopping smoking, optimize guideline-recommended medical therapy (Class I)
<65 years without any CVD/CV risk factors[a]
≥65 years or with CV risk factors[a]
Patients with established CVD
Low-risk NCS
None
Low-risk NCS
None
Low-risk NCS
None (see section 6)
Intermediate-risk NCS
None
Intermediate-risk NCS
ECG, biomarkers[b] (Class I)
Functional capacity[c] (Class IIa)
Intermediate-risk NCS
ECG, biomarkers[b] (Class I)
Functional capacity[c] (Class IIa)
(see section 6)
High-risk NCS
In patients >45 year, consider: ECG, biomarkers[b] (Class IIa)
High-risk NCS
ECG, biomarkers[b] (Class I)
Functional capacity[c] (Class IIa)
High-risk NCS
ECG, biomarkers[b] (Class I)
Functional capacity[c] (Class IIa)
+ cardiology consultation[d] (see section 6) Multidisciplinary decision

Surgical Risk Estimate According to Type of Surgery or Intervention

Low surgical risk (<1%)	Intermediate surgical risk (1–5%)	High surgical risk (>5%)
• Breast • Dental • Endocrine: thyroid • Eye • Gynaecological: minor • Orthopaedic minor (meniscectomy) • Reconstructive • Superficial surgery • Urological minor: (transurethral resection of the prostate) • VATS minor lung resection	• Carotid asymptomatic (CEA or CAS) • Carotid symptomatic (CEA) • Endovascular aortic aneurysm repair • Head or neck surgery • Intraperitoneal: splenectomy, hiatal hernia repair, cholecystectomy • Intrathoracic: non-major • Neurological or orthopaedic: major (hip and spine surgery) • Peripheral arterial angioplasty • Renal transplants • Urological or gynaecological: major	• Adrenal resection • Aortic and major vascular surgery • Carotid symptomatic (CAS) • Duodenal-pancreatic surgery • Liver resection, bile duct surgery • Oesophagectomy • Open lower limb revascularization for acute limb ischaemia or amputation • Pneumonectomy (VATS or open surgery) • Pulmonary or liver transplant • Repair of perforated bowel • Total cystectomy

CAS, carotid artery stenting; CEA, carotid endarterectomy; CV, cardiovascular; MI, myocardial infarction; VATS, video-assisted thoracic surgery.
Surgical risk estimate is a broad approximation of 30 day risk of CV death, MI, and stroke that takes into account only the specific surgical intervention, without considering the patient's comorbidities.
Adapted from data in Glance *et al.*, Muller *et al.*, Bendixen *et al.*, and Falcoz *et al.*[18–23]


Factors associated with peri-operative cardiovascular complications
Patient-related factors
Chronic:
Age >75 years
Coronary artery disease
Heart failure
Severe aortic stenosis
Peripheral arterial disease
Cerebrovascular disease
Renal insufficiency
Diabetes, anaemia
(Sub)-Acute:
Acute coronary syndrome
Acute aortic syndrome
Acute stroke
Acute trauma (e.g. hip fracture)
Procedure-related factors (surgery and anaesthesia):
Urgency of the procedure, hypotension, hypercoagulability, bleeding inflammation, tachycardia, hypothermia, SNS stimulation
Post-operative factors:
Hypotension, bleeding, hypoxaemia, tachycardia, pain
Cardiovascular complications:
Type I myocardial infarction
Type 2 myocardial infarction
Acute heart failure, arrhythmias
Pulmonary embolism
Stroke
Cardiovascular death

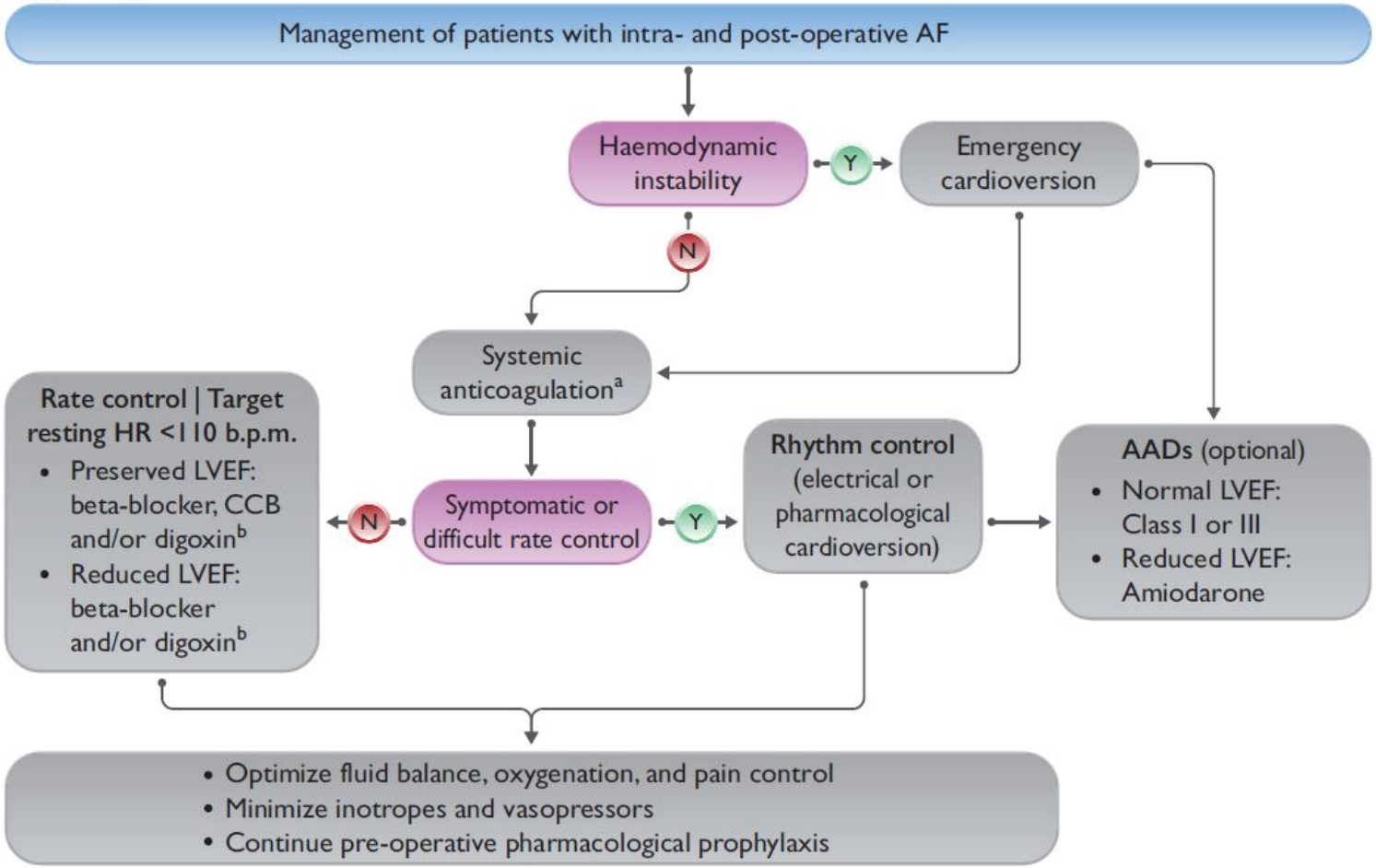
Pre-operative prevention of AF

- Optimize haemodynamics
- Correct electrolyte imbalance
- Identify patients at increased risk for post-operative AF

Pharmacological AF prophylaxis:

- Continue beta-blockers (if chronic therapy)
- Other AADs in selected patients

Peri-operatively



05

Perioperative Cardiovascular Management and Guideline Recommendations



Perioperative Cardiovascular Management and Guideline Recommendations

05-1 Coronary Artery Disease and Coronary Revascularization

05-2 Coronary CT Angiography and Invasive Coronary Angiography

05-3 Perioperative Management of Arrhythmias and Anticoagulation

05-4 Perioperative Antiplatelet Management and Timing of Surgery After PCI

05-5 Cardiac Imaging and Echocardiography

05-6 Perioperative Cardiovascular Complications and Postoperative Management

IRANIAN SOCIETY OF ANAESTHESIOLOGY AND CRITICAL CARE

General risk-reduction strategies

Cardiovascular risk factors and lifestyle interventions	
Smoking cessation >4 weeks before NCS is recommended to reduce post-operative complications and mortality.	I
Control of CV risk factors including blood pressure, dyslipidaemia, and diabetes is recommended before NCS.	I
Pharmacological treatment	
For patients on diuretics to treat hypertension, transient discontinuation of diuretics on the day of NCS should be considered.	IIa
For patients on diuretics to treat hypertension, transient discontinuation of diuretics on the day of NCS should be considered.	IIa

Recommendation for patients aged <65 years without signs, symptoms, or history of cardiovascular disease

Recommendations	Class[a]	Level[b]
In patients with a family history of genetic cardiomyopathy, it is recommended to perform an ECG and TTE before NCS, regardless of age and symptoms.	I	C
In patients aged 45-65 years without signs, symptoms, or history of CVD, ECG and biomarkers should be considered before high-risk NCS.	IIa	C

ECG, electrocardiogram; NCS, non-cardiac surgery; TTE, transthoracic+ echocardiography.

a: Class of recommendation.

b: Level of evidence.

Pre-operative assessment tools

Frailty and functional capacity	
In patients aged ≥70 years, being scheduled to undergo intermediate- or high-risk NCS, frailty screening should be considered using a validated screening tool.	IIa
Adjusting risk assessments according to self-reported ability to climb two flights of stairs should be considered in patients referred for intermediate- or high-risk NCS.	IIa

This is a central feature of the ACC/AHA approach: the diagnostic test is justified by its potential to influence a clinical decision.

The ESC guideline also rejects routine stress imaging before noncardiac surgery. However, it provides more detailed indications for stress imaging, including high-risk elective surgery in patients with poor functional capacity and high likelihood of coronary artery disease or high clinical risk. It also considers stress imaging in selected patients with previous PCI or CABG and in some intermediate-risk cases.

Pre-operative assessment in patients with a newly detected murmur, chest pain, dyspnoea, or peripheral oedema

In patients with a newly detected murmur and symptoms or signs of CVD, TTE is recommended before NCS.	I
In patients with a newly detected murmur suggesting clinically significant pathology, TTE is recommended before high-risk NCS.	IIa
In patients with a newly detected murmur, but without other signs or symptoms of CVD, TTE should be considered before moderate and high-risk NCS.	I
If a patient scheduled for elective NCS has chest pain or other symptoms suggestive of undetected CAD, further diagnostic work-up before NCS is recommended.	I
If a patient in need of acute NCS also has chest pain or other symptoms suggestive of undetected CAD, a multidisciplinary assessment approach is recommended to choose the treatment with lowest total risk for the patient.	I
In patients with dyspnoea and/or peripheral oedema, an ECG and an NT-proBNP/BNP test is indicated before NCS, unless there is a certain non-cardiac explanation.	I
In patients with dyspnoea and/or peripheral oedema and elevated NT-proBNP/BNP, TTE is recommended before NCS.	I

The ESC approach

The ESC guideline provides a more granular recommendation framework. It identifies poor functional capacity, elevated BNP/NT-proBNP, and murmurs as indications for TTE before high-risk surgery, while also distinguishing situations in which TTE may be considered before intermediate-risk surgery. Routine preoperative evaluation of left ventricular function is not recommended.

Recommendations for management of patients with specific diseases undergoing NCS

A) Patients with CAD		
If PCI is indicated before NCS, the use of new-generation DES is recommended over BMS and balloon angioplasty.	I	A
If NCS can safely be postponed (e.g. at least 3 months), it is recommended that patients with ACS being scheduled for NCS undergo diagnostic and therapeutic interventions as recommended for ACS patients in general.	I	A
Routine myocardial revascularization before low- and intermediate-risk NCS in patients with CCS is not recommended.	III	B
B) Patients with heart failure		
In patients with suspected or known HF scheduled for high-risk NCS, it is recommended to evaluate LV function with echocardiography and measurement of NT-proBNP/BNP levels, unless this has recently been performed.	I	B
It is recommended that patients with HF undergoing NCS receive optimal medical treatment according to current ESC Guidelines.	I	A
In patients with HF undergoing NCS, it is recommended to regularly assess volume status and signs of organ perfusion.	I	C

The ACC/AHA review states that prophylactic revascularization is indicated only as it would be in the nonsurgical setting, including acute coronary syndrome and left-main coronary artery obstruction greater than 50%. It emphasizes that very few patients require CABG or PCI solely to enable noncardiac surgery.

Pre-operative ICA may be considered in stable CCS patients undergoing elective surgical CEA.	IIb	B
Routine pre-operative ICA is not recommended in stable CCS patients undergoing low- or intermediate-risk NCS.	III	C

CAD, coronary artery disease; CCS, chronic coronary syndrome; CCTA, coronary computed tomography angiography: CEA, carotid endarterectomy: ICA, invasive coronary angiography; NCS, non-cardiac surgery; NSTE-ACS, non-ST-segment elevation acute coronary syndrome.

a: Class of recommendation.

b: Level of evidence.

Coronary CT angiography

Both documents recognize coronary CT angiography as an option within the diagnostic pathway.

The ACC/AHA review explicitly lists CCTA as an alternative to pharmacologic stress testing.

Recommendations for stress imaging

Recommendations	Class[a]	Level[b]
Stress imaging is recommended before high-risk elective NCS in patients with poor functional capacity (c) and high likelihood of CAD (d) or high clinical risk	I	B
Stress imaging should be considered before high-risk NCS in asymptomatic patients with poor functional capacity (d), and previous PCI or CABG.	IIa	C
Stress imaging may be considered before intermediate-risk NCS when ischaemia is of concern in patients with clinical risk factors and poor functional capacity(d).	IIb	B
Stress imaging is not recommended routinely before NCS.	III	C

CABG, coronary artery bypass graft: CAD. coronary artery disease: ECG, electrocardiogram: LV, left ventricular; NCS, non-cardiac surgery: PCI, percutaneous coronary intervention.
a: Class of recommendation.
b: Level of evidence.
c:Physical capacity based on Duke Activity Status Index (DASI) or inability to climb two flights of stairs.
d: Pre-test probability > 15% based on age, sex, and nature of symptoms, or two or more risk factors for CVD (dyslipidaemia, diabetes, hypertension, smoking, family history of CVD), or resting ECG changes (Q wave or ST-segment/T wave changes), or LV dysfunction suggestive of CAD.

Patients with VHD

Clinical and echocardiographic evaluation (if not recently performed) is recommended in all patients with known or suspected VHD who are scheduled for elective intermediate- or high-risk NCS.	I	C
AVR (SAVR or TAVI) is recommended in symptomatic patients with severe AS who are scheduled for elective intermediate- or high-risk NCS.	I	C
In patients with symptomatic severe AR or asymptomatic severe AR and LVESD >50 mm or LVESDI (LVESD/BSA) >25 mm/m² (in patients with small body size) or resting LVEF ≤50%, valve surgery is recommended prior to elective intermediate- or high-risk NCS.	I	C
In patients with symptomatic severe AR or asymptomatic severe AR and LVESD >50 mm or LVESDI (LVESD/BSA) >25 mm/m² (in patients with small body size) or resting LVEF ≤50%, valve surgery is recommended prior to elective intermediate- or high-risk NCS.	I	C

Recommendations for transthoracic echocardiography

Recommendations	Class[a]	Level[b]
TTE is recommended in patients with poor functional capacity and/or high NT-proBNP/BNP, or if murmurs are detected before high-risk NCS, in order to undertake risk-reduction strategies	I	B
TTE should be considered in patients with suspected new CVD or unexplained signs or symptoms before high-risk NCS	IIa	B
TTE may be considered in patients with poor functional capacity, abnormal ECG, high NT-proBNP/BNP, or ≥1 clinical risk factor before intermediate-risk NCS.	IIb	B
To avoid delaying surgery, a FOCUS exam performed by trained specialists may be considered as an alternative to TTE for pre-operative triage	IIb	B
Routine pre-operative evaluation of LV function is not recommended	III	C

BNP, B-type natriuretic peptide: CVD, cardiovascular disease; ECG, electrocardiogram: FOCUS, focused cardiac ultrasound; LV, left ventricular; NCS, non-cardiac surgery; NT-proBNP, N-terminal pro-B-type natriuretic peptide: TTE, transthoracic echocardiography.

Valvular heart disease

In patients with symptomatic severe AR or asymptomatic severe AR and LVESD >50 mm or LVESDI (LVESD/BSA) >25 mm/m² (in patients with small body size) or resting LVEF ≤50%, valve surgery is recommended prior to elective intermediate- or high-risk NCS.	I
In patients with moderate-to-severe rheumatic MS and symptoms or SPAP >50 mmHg, valve intervention (PMC or surgery) is recommended before elective intermediate- or high-risk NCS.	I
In asymptomatic patients with severe AS who are scheduled for elective high-risk NCS, AVR (SAVR or TAVI) should be considered after Heart Team discussion.	IIa
In patients with symptomatic severe primary MR or asymptomatic severe primary MR with LV dysfunction (LVESD ≥40 mm and/or LVEF ≤60%), valve intervention (surgical or transcatheter) should be considered prior to intermediate- or high-risk NCS, if time allows.	IIa
In patients with severe secondary MR who remain symptomatic despite guideline-directed medical therapy (including CRT if indicated), valve intervention (transcatheter or surgical) should be considered before NCS, in eligible patients with an acceptable procedural risk.	IIa
In patients with severe symptomatic AS in need of time-sensitive NCS or in whom the TAVI and SAVR are unfeasible, BAV may be considered before NCS as a bridge to definitive aortic valve repair.	IIb

Patients with pulmonary hypertension

It is recommended to continue chronic therapy for PAH in the peri-operative phase of NCS.	I	C
It is recommended that haemodynamic monitoring of patients with severe PAH continues for at least 24 h in the post-operative period.	I	C
In the case of progression of right HF in the post-operative period in patients with PAH, it is recommended that the diuretic dose be optimized and, if necessary, i.v. prostacyclin analogues be initiated under the guidance of a physician experienced in the management of PAH.	I	C

Pericardial diseases

In patients with acute pericarditis, deferring elective NCS until complete resolution of the underlying process should be considered.	IIa
Avoiding elective NCS procedures under general anaesthesia until colchicine or the immunosuppressive treatment course for pericardial disease is completed may be considered.	IIb

Recommendations for treatment of post-operative cardiovascular complications

It is recommended to have high awareness of peri-operative CV complications, combined with surveillance for PMI in patients undergoing intermediate- or high-risk NCS.	I	B
Systematic PMI work-up is recommended to identify the underlying pathophysiology and define therapy.	I	B
It is recommended to treat post-operative STEMI, NSTE-ACS, acute HF, and tachyarrhythmias in accordance with guidelines for the non-surgical setting, after interdisciplinary discussion with the surgeon about bleeding risk.	I	C
In patients with post-operative PE of high or intermediate clinical probability, initiation of anticoagulation is recommended without delay, while diagnostic work-up is in progress, if bleeding risk is low.	I	C
Post-operative oral anticoagulation for PE is recommended to be administered for a period of at least 3 months.	I	C
In patients with a post-operative indication for OAC, NOAC is generally recommended over VKA.	I	A
Routine use of beta-blocker for the prevention of post-operative AF in patients undergoing NCS is not recommended	III	B

06

Postoperative Cardiovascular Surveillance



Troponin surveillance

The ACC/AHA review identifies postoperative troponin surveillance in high-risk patients as a change from the 2014 guideline. Previously, surveillance was considered primarily when patients demonstrated signs or symptoms of ischemia; the updated approach permits consideration of postoperative troponin measurement in high-risk patients even in the absence of such symptoms.

Thromboprophylaxis

It is recommended that decisions about peri-operative thromboprophylaxis in NCS are based on individual and procedure-specific risk factors.	I
If thromboprophylaxis is deemed necessary, it is recommended to choose the type and duration of thromboprophylaxis (LMWH, NOAC, or fondaparinux) according to type of NCS, duration of immobilization, and patient-related factors.	I
In patients with a low bleeding risk, peri-operative thromboprophylaxis should be considered for a duration of up to 14 or 35 days, for total knee or hip arthroplasty, respectively.	IIa
NOACs in thromboprophylaxis dose may be considered as alternative treatments to LMWH after total knee and hip arthroplasty.	IIb

Recommendations for use of risk assessment tools

Recommendations for peri-operative thromboprophylaxis		
In patients who have known CVD or CV risk factors (including age ≥65 years), or symptoms or signs suggestive of CVD it is recommended to obtain a pre-operative 12-lead ECG before intermediate- and high-risk NCS.	I	C
In patients who have known CVD, CV risk factors (including age ≥65 years), or symptoms suggestive of CVD it is recommended to measure hs-cTn T or hs-cTn I before intermediate- and high-risk NCS, and at 24 h and 48 h afterwards.	I	B
TTE is recommended in patients with poor functional capacity and/or high NT-proBNP/BNP, or if murmurs are detected before high-risk NCS, in order to undertake risk-reduction strategies.	I	B
Stress imaging is recommended before high-risk elective NCS in patients with poor functional capacity and high likelihood of CAD or high clinical risk.	I	B
It is recommended to use the same indications for ICA and revascularization pre-operatively as in the non-surgical setting.	I	C
In low-risk patients undergoing low- and intermediate-risk NCS, it is not recommended to routinely obtain pre-operative ECG, hs-cTn T/I, or BNP/NT-proBNP concentrations.	III	B
Routine pre-operative evaluation of LV function is not recommended.	III	C
Stress imaging is not recommended routinely before NCS.	III	C
Routine pre-operative ICA is not recommended in stable CCS patients undergoing low- and intermediate-risk NCS.	III	C

Risk Score Calculators

	Revised Cardiac Risk Index (RCRI) (1999)[a]	Surgical Risk Calculator (2011)	The American College of Surgery National Surgical Quality Improvement Program (ACS NSQIP) (2013)	Surgical Outcome Risk Tool (SORT) (2014)	The American University of Beirut (AUB)-HAS2 Cardiovascular Risk Index (2019)[b]
Variables	Ischaemic heart disease Cerebrovascular disease History of congestive heart failure Insulin therapy for diabetes Serum creatinine level ≥2 mg/dL High-risk surgery (each assigned 1 point)	Age ASA–PS grade Pre-operative dependent functional status Creatinine >1.5 mg/dL Type of surgery	Age Sex Functional status Emergency case ASA class Current steroid use Ascites within 30 days Systemic sepsis within 48 h Ventilator dependence Disseminated cancer Diabetes Hypertension on treatment Congestive HF Dyspnoea Current smoker History of severe COPD Dialysis Acute renal failure Body mass index Surgery code	ASA–PS grade Urgency of surgery High-risk surgical specialty Surgical severity (from minor to complex major) Cancer Age ≥65 years or over	History of **H**eart disease Symptoms of **H**eart disease (angina or dyspnoea) **A**ge ≥75 years **A**naemia (haemoglobin <12 g/dL) Vascular **S**urgery Emergency **S**urgery (2 H, 2 A and 2 S) (each assigned 1 point)

07

Conclusion and Questions

References

1. Halvorsen et al. 2022 Guidelines on Cardiovascular Assessment and Management of Patients Undergoing Non-cardiac Surgery. European Heart Journal. Vol. 43. 2022.

2. Thompson et al, 2024 AHA/ACC/ACS/ASNC/HRS/SCA/SCCT/SCMR/SVM Guideline for Perioperative Cardiovascular Management for Noncardiac Surgery: A Report of The American College Of Cardiology/ American Heart Association Joint Committee On Clinical Practice Guidelines. Circulation. Vol. 150. no. 19. September 2024

3. Cohn, Steven. L. 2024 ACC/AHA Guideline on Perioperative Cardiovascular Management Before on Cardiac Surgery: What's New? Cleveland Clinic Journal Of Medicine, Vol. 92. no. 4. April 2015.

Thank You for Your Attention

Questions and Discussion

email · Dr.NargesPayani@yahoo.com