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Principales Enseñanzas para el Cardiólogo Clínico de las Guías de Evaluación y Manejo Cardiovascular de Pacientes sometidos a Cirugía No Cardiaca

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Magnitud del Problema

- 22.000.000 cirugías mayores/año en Europa (población 448.000.000)[1]
- 85% cirugía no cardiaca
- ≥ 45 años sometidos a cirugía no cardiaca en EEUU[1]
  - 50%: FRCV
  - 18%: cardiopatía isquémica
  - 4,7%: ictus

LMWH, low molecular weight heparin; NCS, non-cardiac surgery; NOAC, non-vitamin K oral anticoagulant.
a Class of recommendation.
b Level of evidence.

¿Qué hay de nuevo?

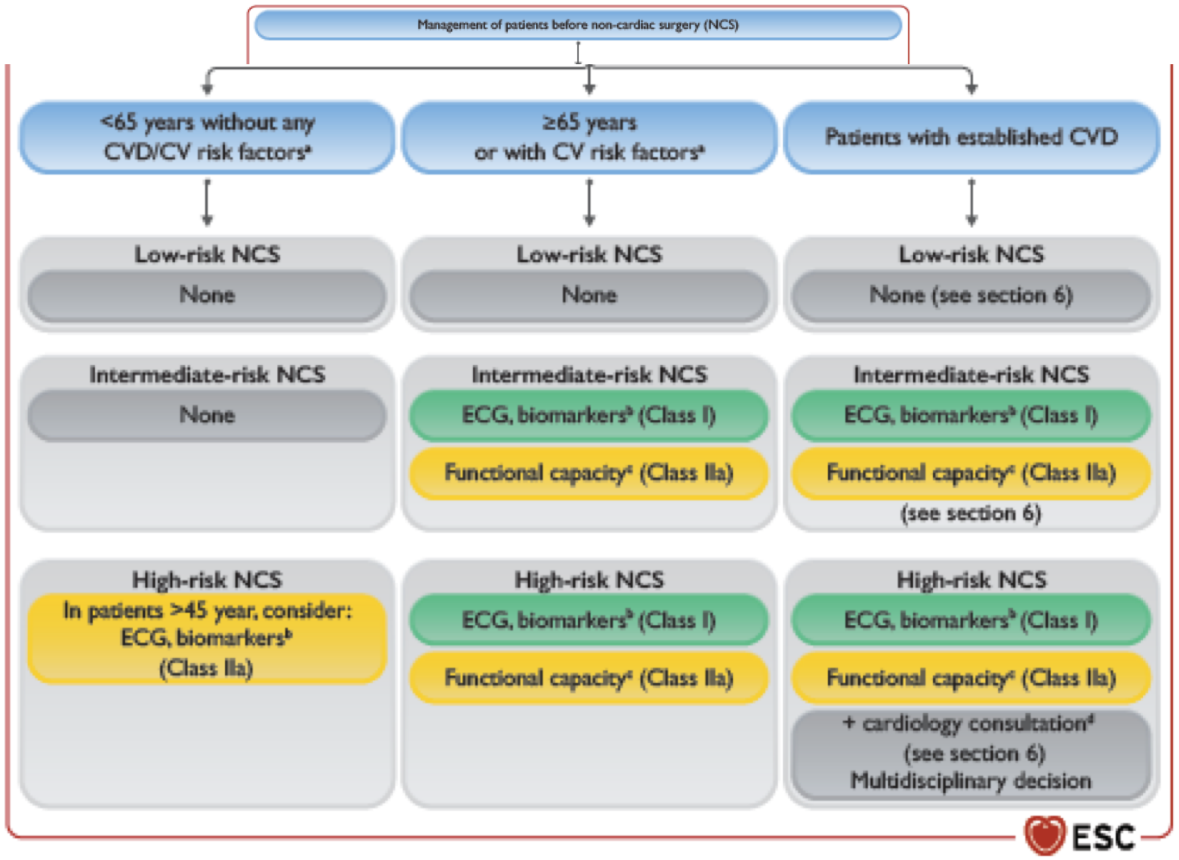
2.1. What is new

Table 3 **New concepts and sections in the current guidelines**

A new flowchart for general assessment of patients before NCS.
A new section on pre-operative assessment of patients with newly detected murmurs, dyspnoea, oedema, or angina.
A new section on the patient perspective.
A new section on assessment of frailty.
A revised and expanded focus on use of biomarkers in NCS
A revised and expanded section on peri-operative management of antiplatelet therapy.
A revised and expanded section on peri-operative management of oral anticoagulants.
A new section on peri-operative thromboprophylaxis.
A dedicated section on patient blood management.
A new section on management of cardiovascular risk in patients with cancer undergoing NCS.
A small section on NCS in patients with recent COVID-19.
A new section on diagnosis and management of post-operative complications during NCS.

COVID-19, coronavirus 2019; NCS, non-cardiac surgery

Evaluación Clínica del Riesgo y Prequirúrgica



Evaluación Clínica del Riesgo y Prequirúrgica

Table 4B **Revised recommendations**

Recommendations in 2014 version	Class	Recommendations in 2022 version	Class
Preoperative assessment tools—*Section 4*			
Electrocardiography and biomarkers			
Pre-operative ECG is recommended for patients who have risk factor(s) and are scheduled for intermediate- or high-risk surgery.	I	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- or high-risk NCS.	I
Assessment of cardiac troponins in high-risk patients, both before and 48–72 h after major surgery, may be considered.	IIb	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
NT-proBNP and BNP measurements may be considered for obtaining independent prognostic information for peri- operative and late cardiac events in high-risk patients.	IIb	In patients who have known CVD, CV risk factors (including age ≥65 years), or symptoms suggestive of CVD, it should be considered to measure BNP or NT-proBNP before intermediate- and high-risk NCS.	IIa
Universal pre-operative routine biomarker sampling for risk stratification and to prevent cardiac events is not recommended.	III	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

Evaluación Clínica del Riesgo y Prequirúrgica

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**

Patients aged <65 years without signs, symptoms, or history of CVD	
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**

Estrategias de Reducción del Riesgo FRCV y Fármacos

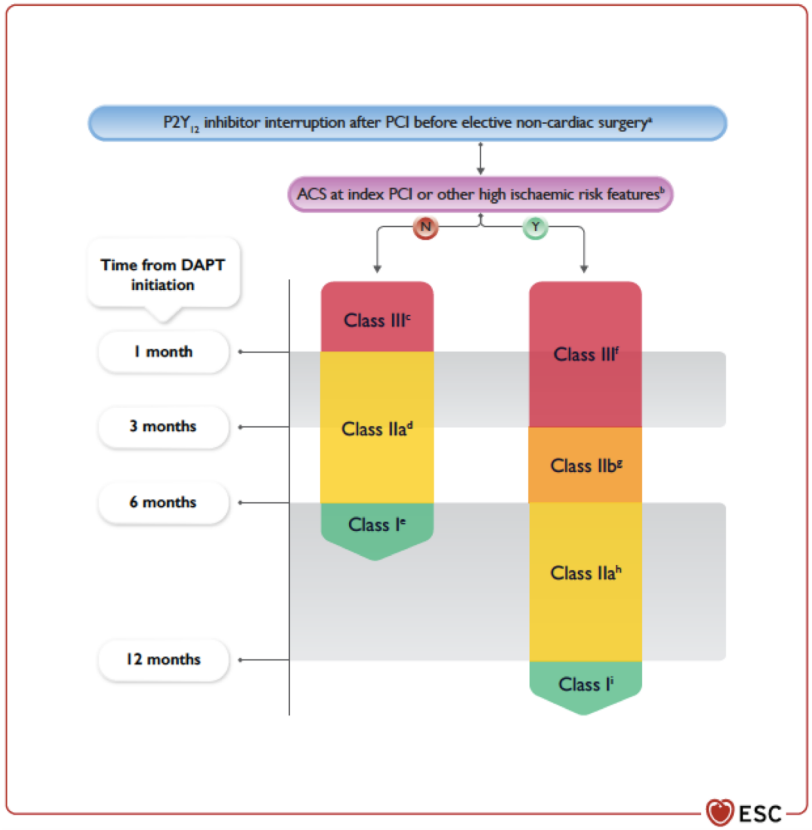
Recommendation Table 11 — Recommendations for lifestyle and cardiovascular risk factors

Recommendations	Class[a]	Level[b]
Smoking cessation >4 weeks before NCS is recommended to reduce post-operative complications and mortality.[181,182]	I	B
Control of CV risk factors—including blood pressure, dyslipidaemia, and diabetes—is recommended before NCS.[173,176–178,183]	I	B

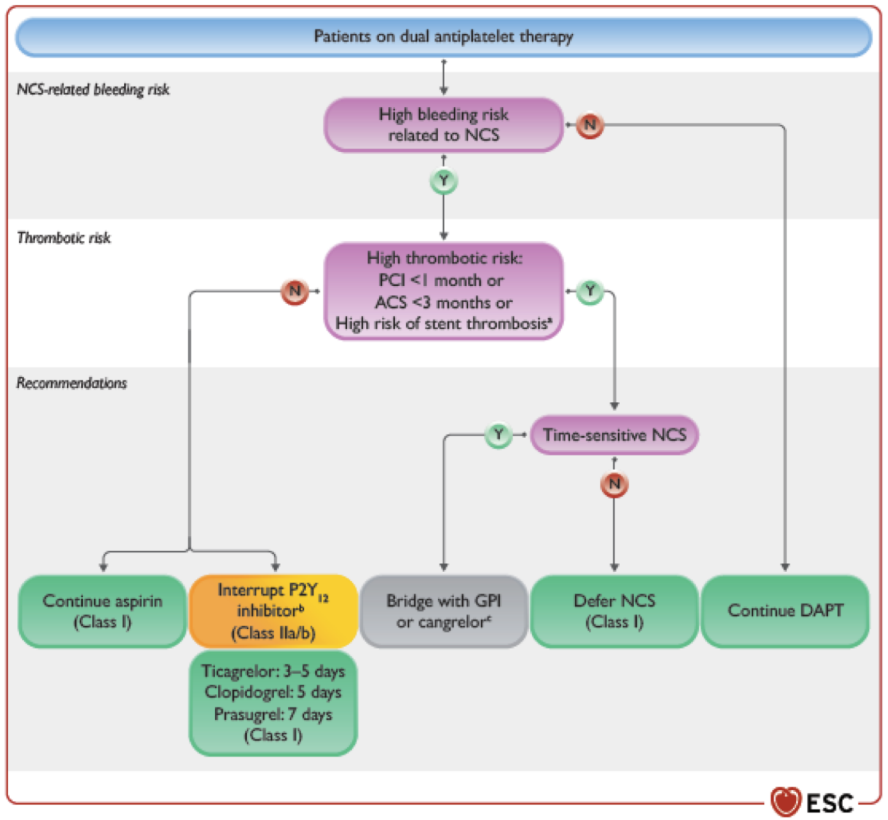
Recommendation Table 12 — Recommendations for pharmacological treatment

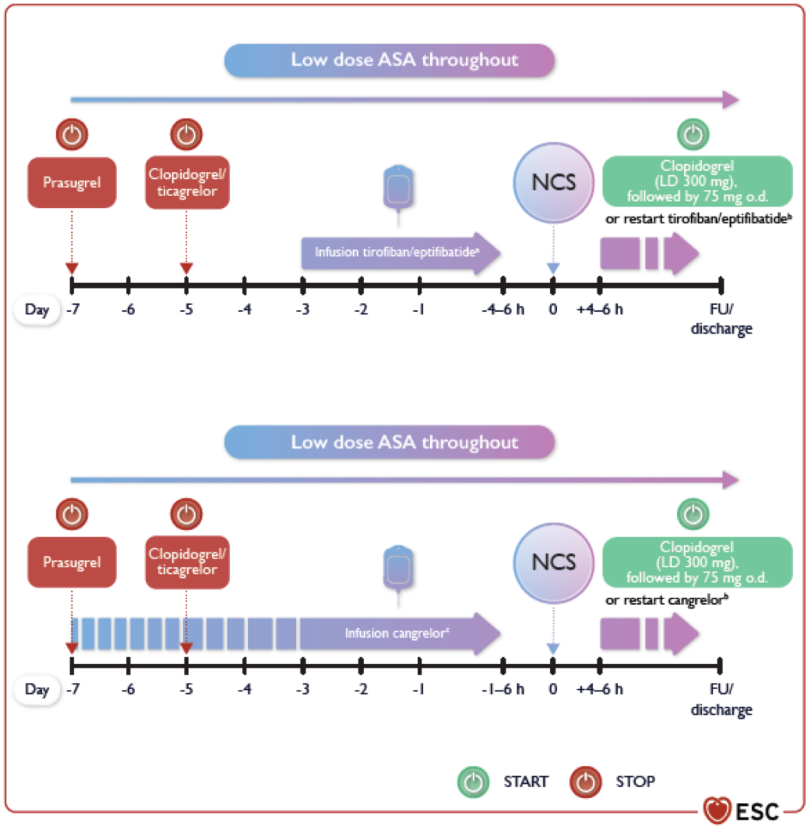
Recommendations	Class[a]	Level[b]
Initiation		
Routine initiation of beta-blocker peri-operatively is not recommended.[185,187,189,233,234]	III	A
It should be considered to interrupt SGLT-2 inhibitor therapy for at least 3 days before intermediate- and high-risk NCS.	IIa	C

Estrategias de Reducción del Riesgo DAP

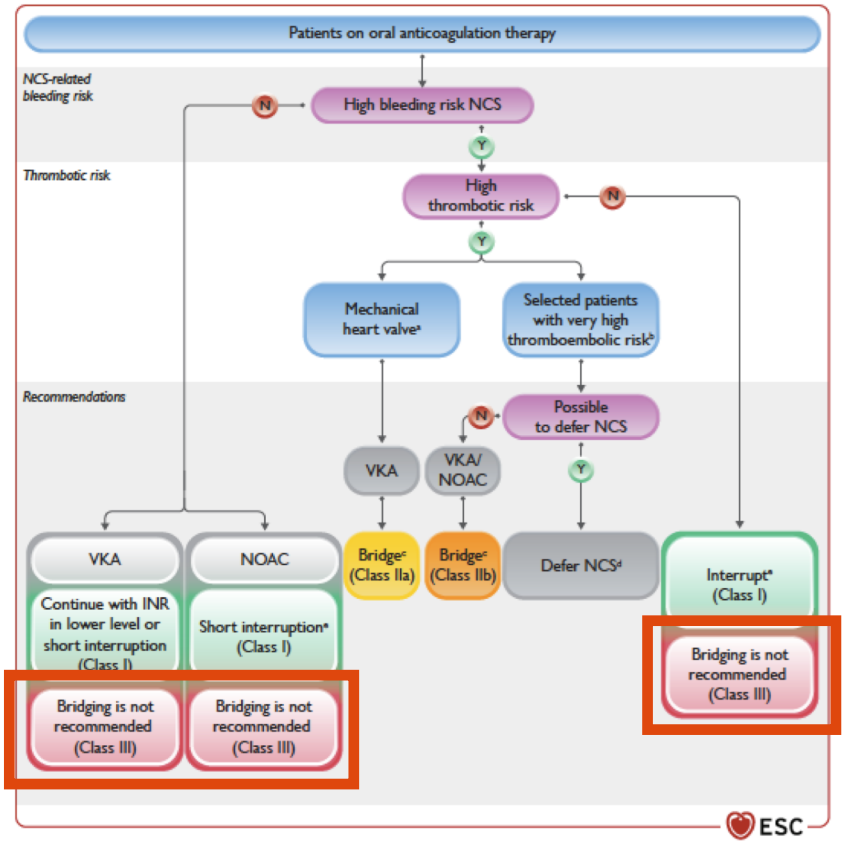


Estrategias de Reducción del Riesgo DAP

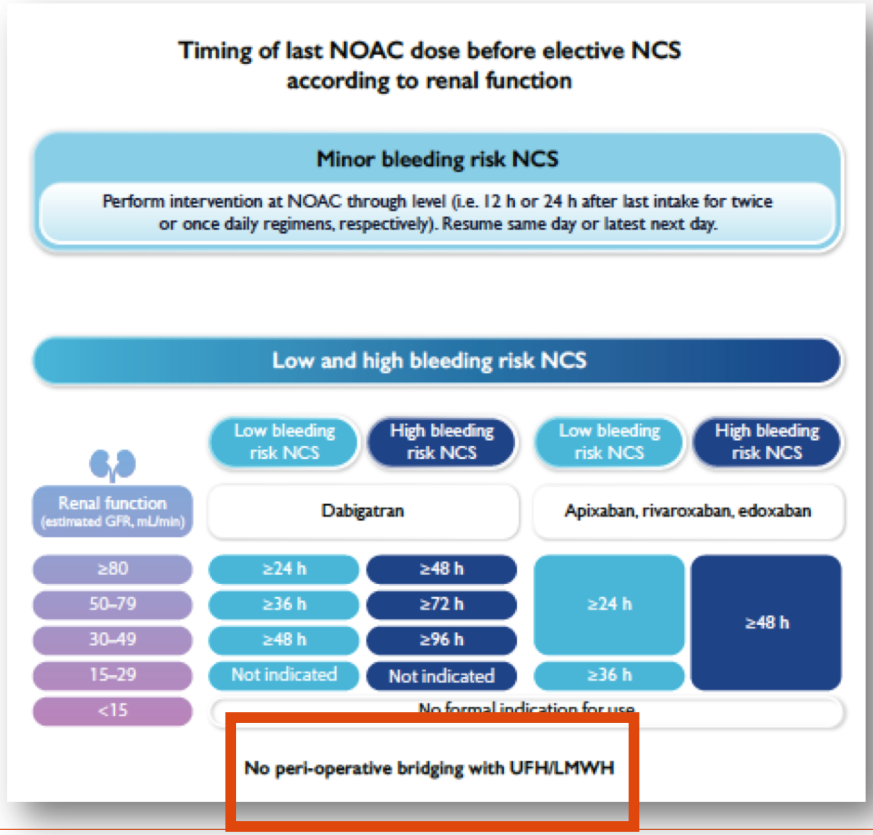




Estrategias de Reducción del Riesgo Anticoagulación



Estrategias de Reducción del Riesgo Anticoagulación. ACOD



Estrategias de Reducción del Riesgo Tromboprofilaxis

Recommendation Table 15 — Recommendations for thromboprophylaxis

Recommendations	Class[a]	Level[b]
It is recommended that decisions about peri-operative thromboprophylaxis in NCS are based on individual and procedure-specific risk factors.[328,332]	I	A
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.[328,332]	I	A
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.[334–337]	IIa	A
NOACs in thromboprophylaxis dose may be considered as alternative treatments to LMWH after total knee and hip arthroplasty.[333]	IIb	A

LMWH, low molecular weight heparin; NCS, non-cardiac surgery; NOAC, non-vitamin K oral anticoagulant.
a Class of recommendation. b Level of evidence.

Enfermedades Específicas
Cardiopatía Isquémica

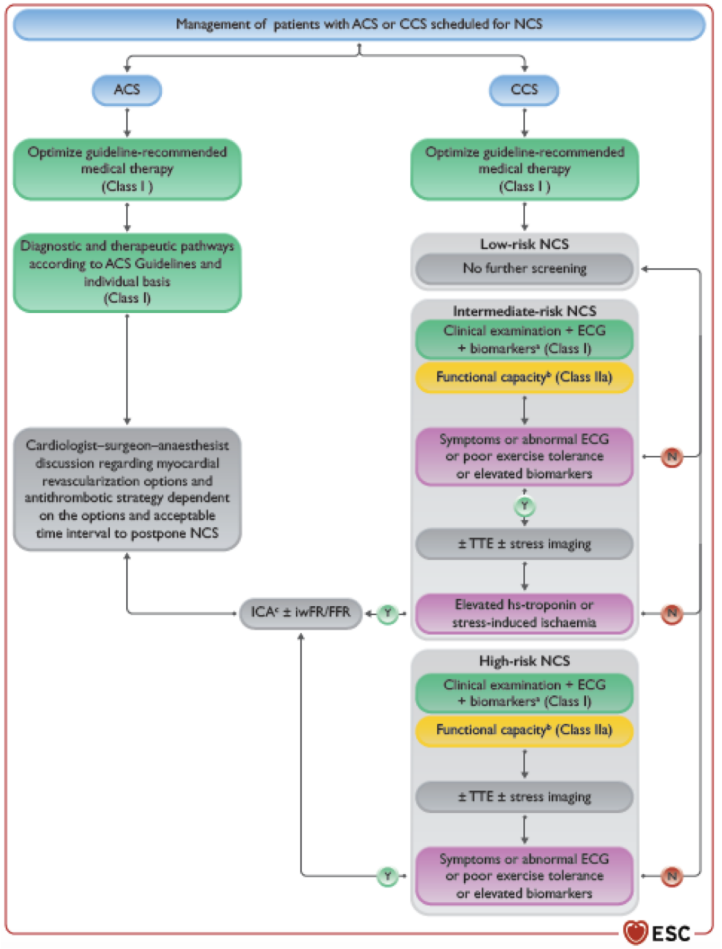
Recommendation Table 9 — Recommendations for stress imaging

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.[e,146,156–158]	I	B
Stress imaging should be considered before high-risk NCS in asymptomatic patients with poor functional capacity,[d] and previous PCI or CABG.[147]	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,152,157,158]	IIb	B
Stress imaging is not recommended routinely before NCS.	III	C

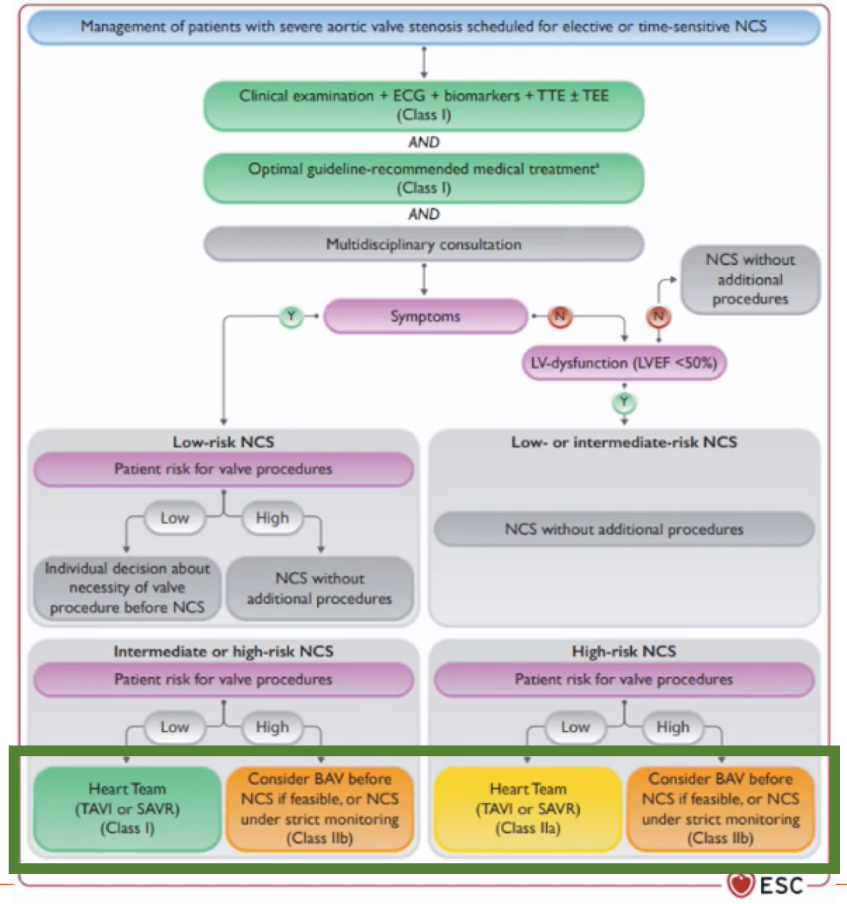
Recommendation Table 10 — Recommendations for coronary angiography

Recommendations	Class[a]	Level[b]
It is recommended to use the same indications for ICA and revascularization pre-operatively as in the non-surgical setting.[98,146]	I	C
CCTA should be considered to rule out CAD in patients with suspected CCS or biomarker-negative NSTE-ACS in case of low-to-intermediate clinical likelihood of CAD, or in patients unsuitable for non-invasive functional testing undergoing non-urgent, intermediate-, and high-risk NCS.	IIa	C

Recommendations	Class[a]	Level[b]
Patients with CCS		
If PCI is indicated before NCS, the use of new-generation DES is recommended over BMS and balloon angioplasty.[268]	I	A
Pre-operative evaluation of patients with an indication for PCI by an expert team (surgeon and cardiologist) should be considered before elective NCS.	IIa	C
Myocardial revascularization before high-risk elective NCS may be considered, depending on the amount of ischaemic myocardium, refractory symptoms, and findings at coronary angiography (as in the case of left main disease).[399,402,403]	IIb	B
Routine myocardial revascularization before low- and intermediate-risk NCS in patients with CCS is not recommended.[399,400]	III	B



Enfermedades Específicas
Estenosis Aórtica



Enfermedades Específicas
HTA

Recommendation Table 27 — Recommendations for pre-operative management of hypertension

Recommendations	Class[a]	Level[b]
In patients with chronic hypertension undergoing elective NCS, it is recommended to avoid large peri-operative fluctuations in blood pressure, particularly hypotension, during the peri-operative period.[528,531]	I	A
It is recommended to perform pre-operative screening for hypertension-mediated organ damage and CV risk factors in newly diagnosed hypertensive patients who are scheduled for elective high-risk NCS.	I	C
It is not recommended to defer NCS in patients with stage 1 or 2 hypertension.	III	C

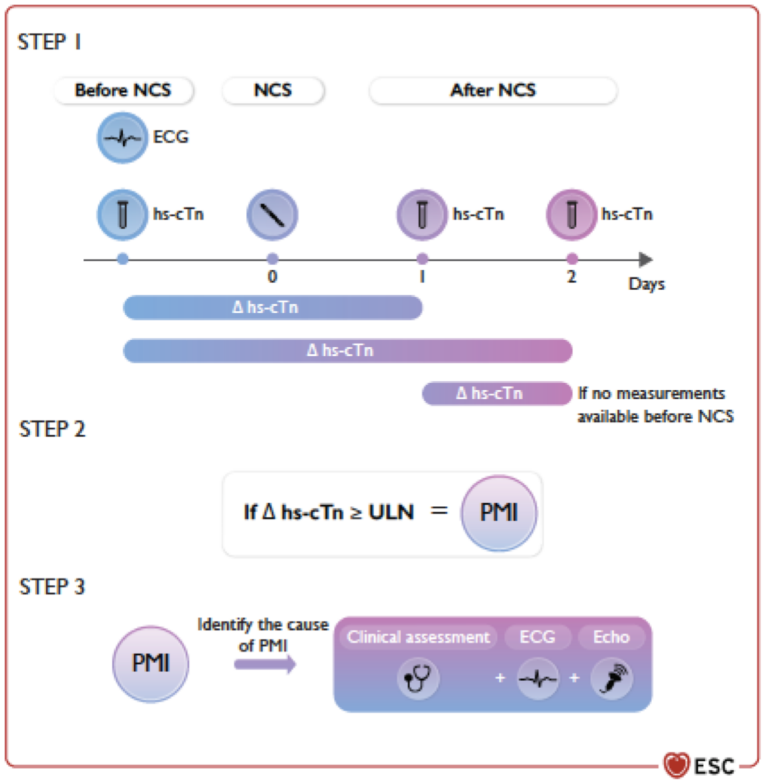
Enfermedades Específicas
IC

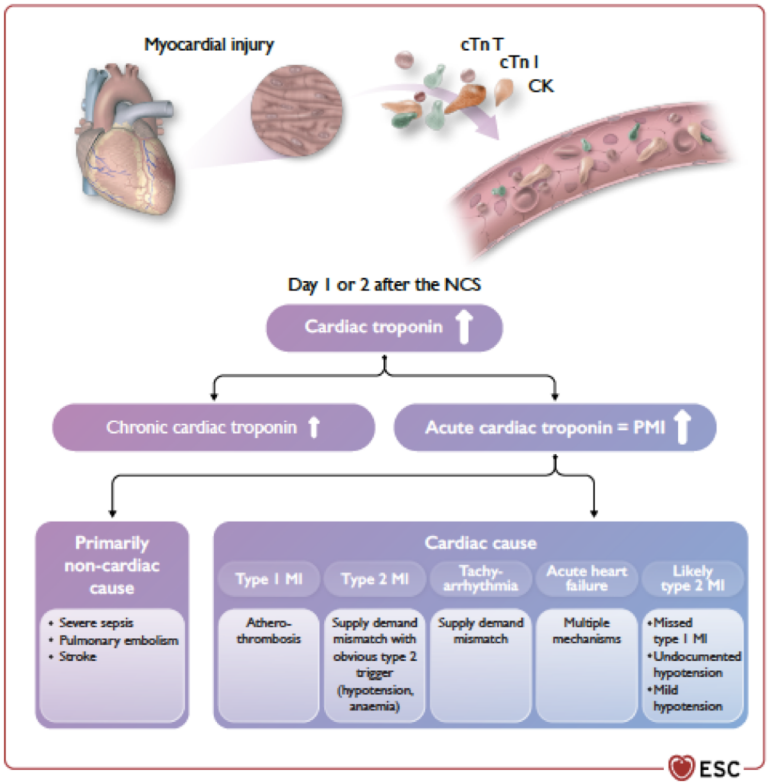
Heart failure	
In patients with HF undergoing NCS, it is recommended to regularly assess volume status and signs of organ perfusion.	I
A multidisciplinary team including VAD specialists is recommended for peri-operative management of patients with HF receiving mechanical circulatory support.	I

Enfermedades Específicas
Arritmias

Arrhythmias	
In AF patients with acute or worsening haemodynamic instability undergoing NCS, emergency electrical cardioversion is recommended.	I
In patients with symptomatic, monomorphic, sustained VT associated with myocardial scar, recurring despite optimal medical therapy, ablation of arrhythmia is recommended before elective NCS.	I
It is recommended that all patients with CIEDs that are reprogrammed before surgery have a re-check and necessary reprogramming as soon as possible after the procedure.	I

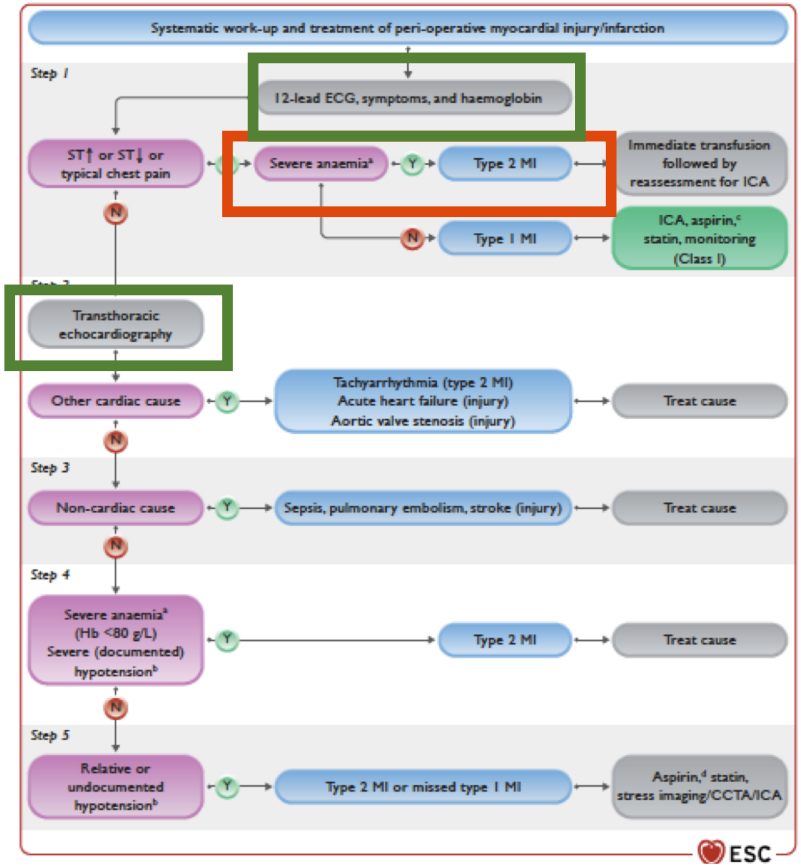
Complicaciones CV Perioperatorias
IAM



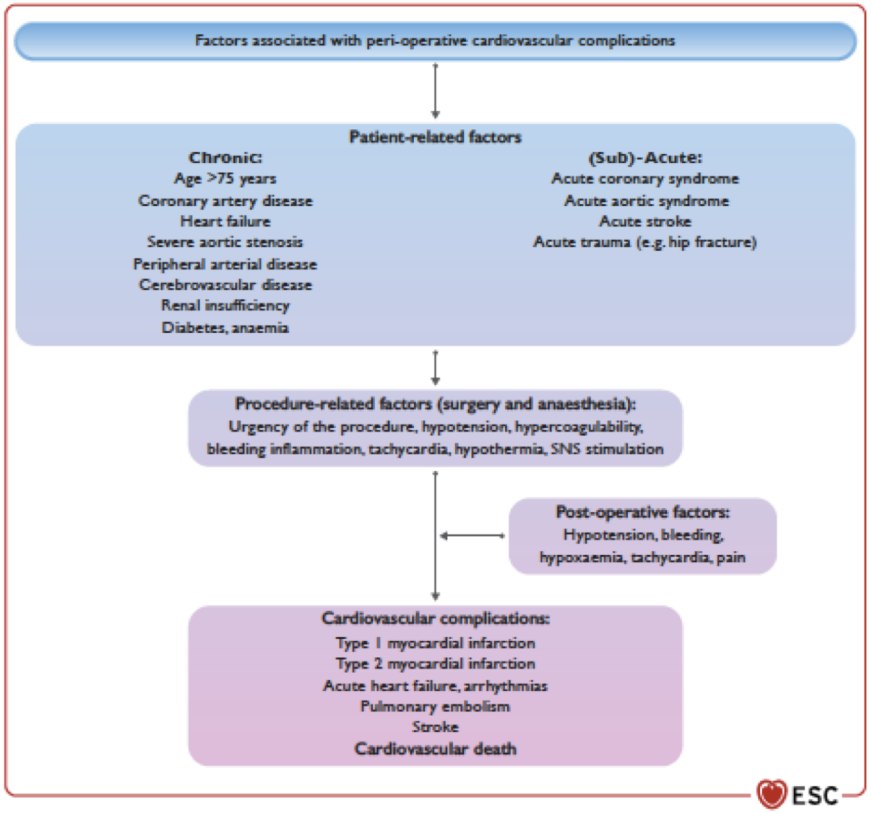


PMI: daño miocárdico perioperatorio

Complicaciones CV Perioperatorias
IAM



Complicaciones CV Perioperatorias
Factores Asociados




¡Gracias!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