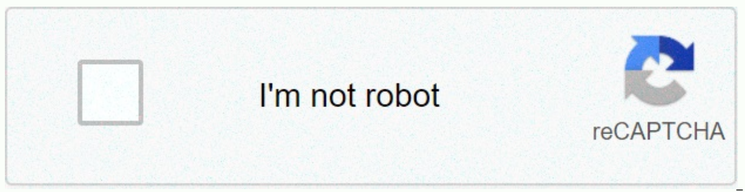

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Reference 51 abbreviations and abbreviations and abbreviations, and abbreviations angiotensin, acute enzyme conversion, cardiovascular care association Aldosterone, serious blocking effects in acute myocardial infarction are treated with or without Reperfusion to improve results and survival at six months. Acute myocardial infarction track angiotensin II ASsessment block receptors of the safety and efficacy of the new Thrombolytic 3 administration of Ticagrelor in the Cath laboratory or in the ambulance for the new ST elevation Myocardial Infarction to open coronary artery cancer Xa Therapy to reduce cardiovascular events, in addition to standard treatment in subjects with acute coronary heart disease. – Thrombolysis in myocardial infarction 51 acute myocardial infarction is treated with primary angioplasty and enOxaparin inTravenous or heparin not diffuse to reduce ischaemic and bleeding events. In short and long-term, follow-up B-type natriuretic coronary artery bypass organ transplant surgery includes Angioplasty and pharmacological interventions with Thrombolytics ALone in acute myocardial infarction in cardiovascular nursing and partner professions for heart failure. , hypertension, age ≥75 (twice), Diabetes, Stroke (Twice) – Vascular disease, ages 65-74 and type sex (female) The Heart Magnetic Resonance Board for Practice countermeasures to reduce pre-PCI-Acute Myocardial Infarction effects of biolimus-eluting stents with biodegradable polymers vs. By comparing acute myocardial infarction trials between FFR and suggested Revascularization compared to the general strategy in acute STEMI patients with multicellular disease trials, Clopidogrel and aspirin, the best use of the drug to reduce recurrence - the seventh organization to evaluate the strategy in ischaemic syndromes completely compared to the primary LESION-ONLY PCI TRIAL DA, the best acute treatment of patients with ST-segment altimeter altimeteration DANAMI 3 – postponed to the A typical stent transplant in patients with elevated ST-segment myocardial infarction DANAMI 3 – complete regeneration compared to the treatment of a specific culprit wound in patients with ST-section, myocardial infarction and multivessel disease, double therapy antiplatelet, european association of the European Cardiovascular Imaging Association of the European Society of Cardiovascular Associations, The European Society of Cardiovascular Interventions, Percutaneous Cardiovascular Intervention in Early Beta-Blockers intravenous intravenous with ST-elevated primary myocardial division. External coronary artery intervention supports membrane oxygenation. Extracorporeal estimates the glomerular filtration rate of the European Heart Rhythm Association Eplerenone Post-AMI Heart Failure Performance and the European Society SUrvival Study of Everolimus-Eluting Stents cardiologists compared to metal nude stents in elevated ST-Segment Myocardial Infarction EnOxaparin and Thrombolysis Reperfusion for the treatment of acute myocarditis – Thrombolysis in Myocardial Infarction dose combines a fixed dose for secondary cardiovascular defense following research of cardiovascular outcomes with PCSK9 inhibitors in subjects with high risk trials. Global registry of acute coronary artery events Grupo de Análisis de la Cardiopatía Isquémica Aguda High Density Lipoprotein Association of Heart Failure Within Aortic Pump Balloon Intensive Heart Care Unit Defibrillator Heart Implant Improvement Reduction Results: Vytorin Efficacy International Low Density Lipoprotein Trials Late cholesterol gadolinium enhancement left ventricle/ventricular left ventricular receptor device, ventricular ejection, fractional adverse heart event, major adverse heart event reduction, haemorrhagic adverse event reduction by TRansradial Access Site, and systemic implementation of the angioX effect of Metoprolol in the heart during acute Myocardial in myocardial heart disease, with coronary artery disease, not obstructing mineralocorticoid arteries, the application antagonist microvascular receptor, non-ST-segmental blockage. Terminal pro-B-type natriuretic peptide organization for evaluating the strategy for Ischemic Syndromes ii primary Angioplas in Myocardial Infarction partial pressure of prostate oxygen, proprotein intervention, convertase subtilisin / kexin type 9, cardiovascular disease prevention in patients with a heart attack before using Ticagrelor compared to placebo on the background of aspirin – Thrombolysis in myocardic ity 54 postronitron. Tomography open-label, random, controlled, multi-center studies explore two treatment strategies of Rivaroxaban and adjust the amount of vitamin K Antagonist treatment strategies in subjects with atrial fibrillation through anti-Angioplasty coronary intervention in my acute Infarction PROlonging Double Antiplatelet Treatment After Scoring Stent-induced Inal hyperplasia studY right branch block group Atim, blindness. Randomized, placebo-controlled trials assessed the safety and efficacy of early treatment with Eplerenone in patients with acute radial myocardial infarction compared to the randomized fetal probe in ST-Elevation Acute Coronary Syndrome Radial Versus Femoral Access for intervention of the right ventricle/ventricular coronary artery, oxygen saturated sodium glucose co-transporting 2 single Reerfusion STrategic early after the myocardial infarction Thro.Mbolysis in myocardial inflammation Tenecteplase tissue plasminogen trial of routinely ambitious Thrombectomy with PCI with PCI alone in patients with STEMI tissue plasminogen activator VALsartan in iNfarcion acute heart death , seven days a week 1. Their guidelines and recommendations should facilitate the decisions of health professionals in their daily practice. However, final decisions on each patient must be made by the health professional responsible for consultation with the patient and the caregiver as appropriate. A number of guidelines have been issued in recent years by the European Heart Association. Due to the impact on clinical practice, quality criteria for development guidelines have been established to make all decisions transparent to the user. Instructions for determining and issuing ESC guidelines can be found on the ESC (website. Selected experts in this field pass comprehensively published evidence for the handling of the conditions set out in accordance with the policy of the Board of Directors. Esc for Best Practices (CPG) provides critical assessment of diagnostic and therapeutic procedures, as well as a benefit risk ratio assessment. The level of evidence and strength of the recommendations. Management options are weighed and rated according to predefined scales as specified in Table 1 and Table 2, Table 1, Class 1 of the Advisory Table 2, the experts of writing and examining the panel, declaring a benefit model for all relationships that may be perceived as a real source or potential conflict of interest. These forms are compiled into a single file and can be found on the ESC (website, any changes to the declaration of interest occurred during the writing period have been notified to ESC and updated, the ad hoc unit receives all financial support from ESC without any involvement from the ESC healthcare industry, CPG oversight and coordination of the preparation of new ESC guidelines. Esc guidelines are extensively reviewed by CPG and external experts. After the appropriate correction, the guidelines are approved by all the experts involved in the ad hoc unit. The summary document was approved by CPG for publication in the European Heart Journal. The guidelines were developed after careful consideration of scientific and medical knowledge and the evidence available at the time of dating. The task of developing ESC guidelines also includes the creation of educational tools and applications for guidance, including models, condensed pocket guidelines, slide summary books with key text, summary cards for non-experts, and electronic versions for digital use (smartphones, etc.) These models are bridged, and therefore, if necessary, should refer to the full text version, which is available freely through the ESC website and hosted on the EHJ website. It is necessary to implement the program, as it shows that the effect of the disease may be influenced by the use of detailed clinical recommendations. Surveys and registrations are needed to determine whether real-life everyday practices are in treatment with what is recommended in the guidelines, thus completing a loop between clinical research, writing guidelines, publishing and conducting clinical practice. Health professionals are encouraged to take into account esc guidelines fully when exercising in their clinical judgment, as well as in determining and implementing preventive, diagnostic or therapeutic medical strategies. However, esc guidelines do not override the individual responsibility of health professionals to make appropriate and accurate decisions in determining the health condition of each patient and in consultation with the patient or the appropriate and/or necessary patient caregiver. Preliminary improvements to the management of patients presented with ST-segment myocardial infarction (STEMI) should be based on sound evidence obtained from well-executed clinical trials whenever possible, or motivated expert reviews, when necessary, need to be recognized that despite excellent clinical trials, results are open to interpretation and treatment may need to be adapted to take into account clinical situations and clinical resources. The current task force has made great efforts to comply with other ESC guidelines1-6 and consensus documents, including simultaneously published updates on the treatment of second-ball electrical protective agents (DAPT), 7 for consistency in esc guidelines strategy, the level of evidence and strengths of the recommendations of specific treatment options have been weighed and rated according to the predefined scales as outlined in Table 1 and 2. Definition of acute myocardial infarction, acute myocardial infarction The value of at least one value above the reference limit on the 99th percentile) should be used in a clinical setting corresponding to myocardial infarction ischaemia.8 For the sake of immediate treatment strategies, such as reperfusion therapy, it is common to prescribe patients with persistent chest discomfort or Other recommended symptoms of ischaemia and st-segment altitude in at least two adjacent leads are STEMI, on the contrary, patients without st-segment elevation in the presentation are often prescribed to have non-ST myocardial infarction (MI) (MI) (NSTEMI) and separate guidelines were recently developed for these 2 patients, some of whom had MI developed Q-waves ((NSTEMI). Mi is also divided into different categories based on clinical pathology and prognostic differences, along with different treatment strategies (see the third universal definition of mi,8 document, which will be updated in 2018), despite the fact that most STEMI patients are classified as type 1 MI (there is evidence of However, some STEMIs fall into mi other types 8 MI even present as STEMI, also occur in the absence of coronary artery disease (CAD) in angiography.9-12 of this type of MI called 'myocardial infarction' (MINOCA) and is mentioned in chapter 9 of this document. 2.2 Epidemiology of ST-segment myocardial infarction globally, ischaemic heart disease is the single most common cause of death and its frequency increases. However, in Europe, It is an overall trend for reducing the rate of ischaemic heart disease mortality over the last three decades.13 Ischaemic cardiac disease now accounts for nearly 1.8 million cases per year, or 20% of all deaths in Europe, although there is a large international change.14 Relative incidence of STEMI and NSTEMI is declining and increases, respectively, 15.16, probably the most comprehensive European STEMI registry found in Sweden. StemI incidence rates were 58 per 100 000 per year in 2015.17 In other European countries, incidence rates ranged from 43 to 144 per 100 000 per year. The report revised the incidence rate from the United States from 133 per 100 000 in 1999 to 50 per 100 000 in 2008, while the incidence of NSTEMI remained steady or increased slightly.19 There are corresponding patterns for STEMI that are somewhat more common in children than in the elderly, and more common in men than in women.17,20 Mortality in STEMI patients is influenced by many factors, among them advanced age, Killip classes, delayed treatment time, the presence of emergency-based STEMI networks, treatment strategies, history of MI, diabetes, renal failure, the number of coronary arteries, and left coronary artery cavity. Several recent studies have highlighted a decrease in acute and long-term mortality following STEMI, coupled with the use of more reperfusion treatments, primary percutaneous coronary intervention (PCI), modern antithrombotic treatments, and secondary protection.14,21,22 However, mortality rates continue to materialize; the death of undesle patients in hospitals with STEMI in the national register of ESC countries varies between 4 and 12%,23 while reports of one-year mortality among STEMI patients on the angiography register are approximately 10%. Acute coronary artery disease (ACS) occurs three to four times more often in men than in women under the age of 60, but after 75 years, women representing the majority of patients, 26 women are more likely to be present with ischemia, up to 30% in certain registers and more likely to present men more slowly than men 28,29, so it is important to maintain high levels of awareness for MI in women with potential symptoms of ischaemia. With several studies indicating that poor results were associated with older people and more comorbidities among women suffering MI.26,30,31, some studies have indicated that women are more likely to receive less intervention than men and receive less frequent reperfusion treatment. Must be handled in a similar way. Open in new tab downloadwhat slide what is new in 2017 STEMI guidelines BMS = nude metal stent; Drugs eluting stent; IRA = infarct related arteries; i.v. = intravenous; LDL = Low Density Lipoprotein PCI = Coronary Artery Intervention; Oxygen saturation in STEMI arteries = myocardial infarction ST-elevation; View the list of .aOnly For experienced halo operators, bBefore release the hospital (either immediately or staged)cRoutine thrombus Ambition (bailout in some cases may be considered)dIn 2012 Premature release is considered after 72h, in 2017 the early release is 48-72h.eIf symptoms or haemodynamic uncertainty ira should be turned on regardless. In the left and center panel below the instructions, each of the most representative trials (abbreviations and references) driven indicators are discussed. This usually depends on symptoms consistent with myocardial infarction, ischaemia (such as persistent chest pain) and signals [such as 12 conductive heart (ECG)]. Some patients have less common symptoms such as shortness of breath, nausea/vomiting, mental fatigue or syncope.34 Decrease in chest pain after administration nitroglycerin (glyceryl trinitrate) can be misleading and is not recommended as a diagnosis of manoeuvre.35 In the case of symptom relief after the administration of nitroglycerin, another complete restoration of the altitude of ST-segment after administering nitroglycerin, along with complete symptomatic relief, as well as the introduction of cardiovascular spasms or without involved MI. In these cases, early coronary angiography is recommended (within 24 hours) in case of st-segment altitude or chest pain, angiography is required immediately, it is recommended to start an ECG examination as soon as possible in all patients suspected of STEMI to detect life-threatening arrhythmia and allow for rapid electric shock if indicated. When suspected STEMI, 12 ECG leads must be received and interpreted as soon as possible in the time of FMC to facilitate early STEMI diagnosis and triage.36-40 in patients with clinical doubts of myocardial infarction, ischaemia and ST-segment, reperfusion therapy must begin as soon as possible41 if ECG is equivocal or does not provide evidence to support clinical suspicion of the ECGs should be repeated and, It is possible compared to the previous record. If the interpretation of ECG before the hospital is not possible in place, it is recommended to use a field delivery of ECG 42ECG threshold, depending on the change in the current of the heart (measured in millivol). The ECG's calibration is 10mm/mV, so 0.1 mV is 1mm square on the vertical axis. In a proper clinical context, st-segment elevation (measured at J-point) is considered the introduction of continuous acute coronary occlusion in the following cases: at least two consecutive leads to ST-segment altitudes ≥ 2.5 mm in men < 40 years ≥2. In men ≥ 40 years or ≥ 1.5 mm in women in lead V2-V3 and / or ≥ 1mm in other leads [in the absence of left ventrial hypertrophy (LV) or block left branch LBBB).] It is recommended to record accurate upfront leads (V3R and V4R) looking at st-segment altitude to identify 8,43 simultaneously 8,43 right vents (RV) in the lead V1–V3. It is recommended that heart failure, especially when the T-wave terminal is positive. ≥ 0.5mm recorded in the V7-V9 lead should be considered as a way of identifying after MI.8, the presence of Q waves on the ECG should not change the decision,the reperfusion strategy, the instructions for preliminary diagnosis, ECG diagnosis may be difficult in some cases, which still deserves to be handled quickly and triage among these: the group branch block in the presence of LBBB ECG diagnosis of AMI is difficult, but often possible, st-diagnostics are often considered to be a marked segment disorder. A relatively complex algorithm has been offered to help diagnose 50,51, but they do not provide diagnostic confidence.52 in the lead-up to positive QRS deflection). 53 Patients with clinical suspicion of ongoing heart condition ischaemia and LBBB should be handled in a similar way to STEMI patients, without prior thought that LBBB was previously known. It is important to say that the presence of the new LBBB (presumably). UN-FORECAST MI per se.54Patients with MI and the Right Branch Block (RBBB) have poor forecasts55 It may be difficult to detect transmural ischaemia in patients with chest pain and RBBB.55, so the main PCI strategy (emerging coronary artery angiography and PCI, if identified) should be considered when persistent ischaemic symptoms occur in the presence of RBBB in the pedestrian vents. Re-programming defibrillators —enables the evaluation of ECG changes between internal hearts. Some patients with acute coronary artery disease may have an initial ECG without the altitude of ST, sometimes because they are seen very early after the onset (in this case, we should look for high acute T waves, which may precede the altitude of the ST-segment),It is important to repeat the ECG or monitor for dynamic ST-segment changes. There are also concerns that some patients with acute coronary artery and MI ongoing, such as those with occluded coronary artery, 58,59 acute occlusion of venous transplantation or left-leaning primary disease, may present without st-segment elevation and are denied treatment with standard 12 extended reerfusion adopted ECG with V7-V9 lead may identify some of these patients. In any case, the suspicion of ongoing cardiac death ischaemia is an indication for the core PCI strategy, even in patients without altitude diagnosis, ST-segment.8,38,46-49Table 3 lists the presentation of abnormal ECG that should inform the primary PCI strategy in patients whose symptoms are consistent with a cardiac dying. Table 3: Atypical electromagnetic presentation that should inform primary coronary artery intervention strategies in patients with ongoing myocardial infarction table 4Definitions of terminology associated with the treatment of reperfusion isolation after MI in AMI of inferior parts and basalt of the heart often corresponds to the left circumference territory, solitary ST-segment depression, ≥ 0.5 mm in lead V1-V3. These should be handled as STEMI, it is recommended to use additional back chest walls, bringing [altitude V7-V9 ≥ 0.5 mm (≥1 mm in men aged 40 years)]. It is recommended to detect the altitude of st-segment corresponding to the inferior primary coronary artery blockage and mi.Left basis, the presence of ST depression ≥ 1 mm. In eight or more lead surfaces (ST inferolateral depression), coupled with st-segment elevation in aVR and/or V1, suggest multiple ischemia or left primary coronary artery obstruction, especially if the patient presents with haemodynamic compromise.60Blood sampling for serum markers is routinely stated but should not delay the strategy/treatment of reperfusion if there is doubt about the possibility of developing mi acute emergency imaging assisted supply therapy. Instructions for the use of echocardiography for initial diagnosis are described in Section 6.6.2, if there is no echocardiography, or if doubts remain after the echo of the primary PCI strategy is identified (including immediate transfer to the PCI center if the patient is being treated in a non-PCI center) in an emergency setting, STEMI does not have a role for routine computed x-ray examination (CT). In cases where suspected acute aortic surgery or pulmonary embolism is not recommended, if STEMI diagnosis is likely, some non-AMI conditions can be presented with symptoms and ECG findings similar to STEMI. Pain relief, suffocation and anxiety relieve pain are of paramount importance not only for comfort reasons, but because pain is associated with sympathetic activation, which causes vasoconstriction and increases the workload of the heart, intravenous opioids, titration (such as v.) opioids (such as morphine) are the most commonly used painkillers in this context. However, the use of morphine is associated with slower absorption. Delay of action, and the reduced effect of oral antiplatelet agents (e.g. clopidogrel, ticagrelor, oral antiplatelet, oral antiplate agents, oral agents, oral antiplate agents, oral agents There is some evidence suggesting that hyperoxia can be dangerous in patients with uncomplicated MI, presumably because myocardial injury increases 64-67, so it is not recommended to use regular oxygen when SaO2 ≥ 90% anxiety is a natural cause of death row. The confidence of patients and those close to them is very important. Mild tranquility should be considered (usually benzodiazepine) in anxious patients. Many cardiac arrest deaths occur very quickly after STEMI begins due to atrial fibrillation (VF)68, since this arrhythmia occurs frequently in the early stages, these deaths usually occur from the hospital. It has been stated that all medical personnel and doctors who care for suspected MI patients have access to defibrillators and are trained in heart life support, and at fmc's point, ECG monitoring must be carried out immediately for all patients there. MI.Patients suspected of chest pain suggested MI should be guided through a public awareness program to contact EMS and wait for transfer to hospital by EMS in patients who track cardiac arrest and st-segment elevation on ECG, pci primary is a strategy of choice.69-74Given High prevalence of coronary heart disease and difficulty interpreting ECG in patients after cardiac arrest, urgent angiography (within 2 hours). When there is a high index of suspicion of ongoing infarction (such as the presence of chest pain before arrest, the history of established CAD and abnormal or unstable ECG results). However, in patients without st-segment elevation, a rapid assessment at the emergency department or intensive cardiac care unit (ICCU) to exclude non-coronary causes (stroke) And to carry out urgent echocardiography is reasonable. The decision to carry out urgent coronary angiography and PCI, if identified, should take into account factors associated with poor neurological outcomes. Unfavorable hospital settings in advance indicate remote opportunities for neurological recovery [such as unfavorable cardiac arrests]. The delayed arrival of the team before the hospital without putting up basic life support (>10 minutes), the presence of an unlingy rhythm, begins more than 20 minutes of advanced life support without returning to natural circulation.] 76 (also known as treatment temperature) with a constant temperature between 32 and 36 °C for at least 24 hours, identified in patients who remained unconscious after resuscitation from cardiac arrest (of presumed heart causes). However, temperature conditions are associated with slow absorption, delayed onset of action and reduced effects of oral electrical agents (such as clopidogrel, ticagrelor and prasugrel) in addition to the metabolic conversion of clopidogrel in the liver may decrease in temperature conditions. Close attention to blood clotting must be paid in patients to low temperatures.84prevention and improving treatment of cardiac arrest outside the hospital is important to reduce CAD-related deaths for more detailed discussions on these issues, citing the European Lifesaving Council's latest guidelines for life-saving 74 4.4 Before hospital logistics of care 4.4.1 delayed treatment is the simplest monitoring index of quality of care in STEMI; Components of ischaemic time, delay of initial management and selection of reperfusion strategies are displayed in Figure 2, open in the new tab, download slideModes of patient presentations, components of ischaemia time and flowchart for choosing ems reperfusion strategy = FMC emergency medical system = first medical exposure PCI = coronary intervention; The recommended mode of patient presentation is an EMS alert (national emergency number: 112 or similar numbers by region). When STEMI diagnostics are made in an out-of-hospital setting (via EMS) or in a non-PCI center, the decision to choose a reperfusion strategy is: At the time of evaluation from STEMI diagnosis to REPERFUSION PCI mediation (crossing line), system delays for patients alerting EMS start at the time of the phone notification, even if FMC occurs when EMS arrives at the scene (see Table 4)' refers to the minute. Patients with fibrinolysis should be transferred to the PCI center immediately after the administration of lytic bolus to reduce patient delays, it is recommended to increase public awareness of how to recognize the general symptoms of AMI and call emergency services. All components of system delays represent the quality of care and are recommended to be measured as quality indicators (see Chapter 10) in hospitals and EMS participating in STEMI patient care, the goal is to reduce delays between FMC and STEMI diagnosis to ≤ 10 minutes. The system delay can be easily adjusted by organizational measures rather than patient delays, and as a predictor of STEMI diagnostic results 87When STEMI made in pre-hospital (EMS) setting, garden laboratory activation immediately not only reduces treatment delays, but may also reduce patient mortality rate88–91 when STEMI diagnosis is made by EMS in pre-hospital settings, and patients are triaged for the main PCI strategy. Bypassing emergency departments involves saving 20 minutes from FMC to skipping 92 calls for patients offered in non-PCI centers ≤. The 30-minute speeding care reperfusion.93 4.4.2 EMS emergency medical system with a unique medical delivery number that is easily restored and well published (112 for most medical emergencies across Europe) is critical to accelerating activation. Parallel circuits for the reference and transport of patients with STEMI who avoid EMS should be avoided. The ambulance system plays an important role in managing STEMI patients early and not only as a mode of transport, but also a system to increase triage initial diagnosis and treatment. The quality of care provided depends on the training of the employees involved. It indicates that all ambulance personnel are trained to recognize the symptoms of AMI, manage oxygen when appropriate, relieve pain, and provide basic life support, 95 ambulance staff should be able to record the ECG for diagnosis and interpret or transmit it to be able to. By experienced staff in the coronary care unit (CCU)/ICCU or elsewhere and create STEMI diagnosis, doctors trained to manage fibrinolytics do it safely and efficiently.96 is fibrinolysis before the hospital identified in the patient presented in the early present when expected TO STEMI diagnosis with PCI-mediating reperfusion time is > 120 minutes, 97-99 continuous training to perform these function physicians is recommended, even in the current setting of PCI. The organization of st-segment elevated myocardial infarction treatment in STEMI's best treatment network should be based on the implementation of inter-hospital networks. With various levels of technology linked by ambulance services, priority and efficiency. The goal of these networks is to provide the best care while reducing delays, thereby improving clinical outcomes. Cardiologists should collaborate with all stakeholders, especially emergency physicians, to build such networks. The main features of such networks are: ▪ a clear definition of a geographical area of responsibility ▪ shared writing protocols based on risk stratification and transport by doctors, nurses or medical staff trained in ambulances or properly equipped helicopters. ▪ pre-hospital triage of STEMI patients to the appropriate institutions. Bypassing a hospital or non-PCI hospital without spending 24 hours a day, 7 days a week (24/7), the main PCI program ▪ when it comes to the appropriate hospital, the patient should be immediately taken to the garden laboratory through the emergency department. ▪ patients offered to non-PCI hospitals and waiting for transport for primary or PCI assistance are required. If stemi diagnosis is not made by ambulance crews and ambulance crews arrive at hospitals that cannot be PCI, ambulances should wait for diagnosis, and if STEMI is diagnosed, should continue to pci competent hospitals to enhance the experience of staff, the main PCI center should be systematically carried out on a 24/7 basis point for all STEMI patients. ▪ Other models, though not suitable, may include weekly or daily rotations of the main PCI center or several major PCI centers in the same region. Hospitals that cannot provide 24-hour service for primary PCI should be allowed to perform primary PCI in patients already admitted for other reasons that develop STEMI during hospital stays. However, these hospitals should be discouraged from starting services that are limited to the main PCI in the daytime or within a few hours, as this can cause confusion to operators. Therefore, EMS transports STEMI patients to hospital with a 24-hour cardiac intervention program, if necessary, to bypass hospitals that cannot pci. The transfer time is within the recommended time window for the main PCI, see Figure 3) open in the new time-target slideMaximum tab based on the selection of reperfusion strategies in patients offered via EMS or in non-PCI CENTER ECG = ECG; Coronary artery intervention; St's Brain Death Upgrade STEMI Diagnosis Is 0 For Strategy Clock The decision to select a reperfusion strategy in patients offered through EMS (non-hospital settings) or in non-PCI centers is based on the estimated time from STEMI diagnosis to REPERFUSION PCI mediation.aif. It is a direct contrast for the main PCI strategy, regardless of the PCI.b10 minutes time is delayed, the maximum target from STEMI diagnosis to bolus fibrinolytic administration, however should be given as soon as possible after stemi diagnosis (after judging the indication). The geographical area where the expected transfer time to the main PCI center makes it impossible to achieve the maximum delay stipulated in the instructions (Figure 2), the system for fast fibrinolysis should be developed in place of stemi diagnostics, with immediate transfer to the main PCI center. Such networks increase the proportion of patients receiving reperfusion with the shortest possible treatment delays 100-102 quality of care, delay of time, and patient results should be measured and compared at regular intervals for improvement. If general practitioners respond quickly, they can be very effective, since they often recognize the patient and can perform and interpret ECG. Their first task after a STEMI diagnosis should alert EMS. However, in most settings, consultation with a general practitioner, rather than a direct call to EMS, will increase delays before the hospital. Therefore, in general, the public should be educated to call EMS rather than primary care physician for the recommended symptoms of MI logistics of pre-hospital care. 5. Reperfusion Therapy 5.1 Selection of reperfusion strategy Table 4 lists definitions of the terminology associated with therapy. The main PCI reperfusion is a preferred reperfusion strategy in patients with STEMI within 12 hours of onset symptoms, if it can be carried out urgently (e.g. 120 minutes from STEMI diagnosis, numbers 2 and 3) by an experienced team. Experienced teams not only include cardiac intervention doctors, but also skilled support staff. Lower mortality rates in patients who passed the main PCI are observed in the center. High doses of PCI.111 real-life data confirm that the main PCI is performed faster and results in a lower mortality rate if carried out in zero volume 112 randomized clinical trials in large quantities, experienced centers have repeatedly shown that if the delay in treatment is similar, the main PCI is better than fibrinolysis in reducing reinfarction mortality or stroke.113-116. The extent to which pci-related delays reduce pci advantages rather than fibrinolysis has been widely debated, since there are no studies specifically designed to address this issue, precautions are needed when interpreting existing data from the latter analysis. The time delay associated with PCI may mitigate the benefits of PCI being calculated as 60 minutes 117, 110 minutes, 118 and 120 minutes 119 in different studies. This time-limited information is approximately 114 minutes for hospital patients 107 and 120 minutes in patients presented in non-PCI.120 centers All these old data and patients who undergo fibrinolysis surgery do not receive angiography early routine, which improves the results in patients receiving Recently, STrategic Reperfusion early after Myocardial infarction (STREAM) randomly trialed early STEMI presenters, with no possibility of instant PCI to immediately fibrinolysis (followed by an early angiography regularly) or transferred to PCI.121 core PCI associated with delays in this trial was 78 minutes, and there was no difference in clinical results. This ad hoc unit is aware of the lack of information generated to limit PCI selection rather than fibrinolysis, to the exact time simplicity from STEMI diagnosis to the mediating PCI reperfusion [such as wire crossing of infarct arteries (IRA)]] over relative PCI-related delays rather than fibrinolysis being selected. This limit is set to 120 minutes, with a maximum limit of 10 minutes from STEMI diagnosis to bolus of fibrinolytics (see below), the absolute time of 120 minutes corresponds to pci-related delays in the range of 110-120 minutes. If the reperfusion strategy is fibrinolysis, the goal is to inject bolus of fibrinolytics within 10 minutes of stemi diagnosis. The median time selected from random is the bolus recorded in the STREAM trial, which is 9 minutes 121 in the previous ESC STEMI guideline, 122, the target time is 30 minutes, but calculated from FMC (as opposed to STEMI diagnosis), STEMI diagnosis should take place within 10 minutes of FMC. Figure 3 summarizes the target time for patients presented in pre-hospital settings or in non-PCI centers to reduce the duration of treatment of fibrinolysis should be handled in pre-hospital settings if possible. After the bolus of management lytics, PCI rescue was identified in the case of fibrinolysis failure (e.g. ST-segment resolution < 50% within 60-90 minutes of fibrinolytic administration), or in the case of haebrinoynamic or worsening electrical uncertainty. While early PCI strategies are routinely identified after successful fibrinolysis (especially 2-24 hours after fibrinolysis) (see section 5.3)125–130Patients with clinical presentation compatible with AMI and ST sections that cannot be achieved in the ECG interpretation section, such as those with group block branches or venticular pacing, 55,131,132 should be given the main PCI strategy, there is a general agreement that the main PCI strategy should be followed for patients with symptoms that last >12 hours in the presence of: (1) (2) Continuous or recurring pain and dynamic ecg changes; and (3) continuous or exacerbated pain symptoms and signs of heart failure, shock or atrial fibrillation However, there is no consensus that PCI is also beneficial in patients offered >12 h from the onset symptoms in case there is no clinical evidence and /or heart electricity of ongoing ischaemia. In patients without permanent symptoms 12-48 hours after the onset of symptoms, a small randomized study (n = 347) showed improved heart muscle recovery and 4-year survival in patients treated with primary PCI compared to conservative treatment alone.133,134 However, in patients who are stable with permanent occlusion of the IRA 3-28 days after MI, The Occluded Artery Trial (OAT) revealed no clinical benefit from routine coronary intervention with medical management, other than that of medical management alone, 135,136 meta-analysis of the experimental test that the slow incorporation of the OBSCURED IRA showed no benefit to reperfusion.137. These patients should be dealt with the same as all patients with chronic total occlusion, in which rehabilitation should be considered in the presence of symptoms or objective evidence of viability / ischaemia in the territory of occluded arteries.1 Recommendations for the treatment of reperfusion Table 5 summary key time targets in acute STEMI. Table 5Summary's Prime Time Key Targets 5.2 Primary Coronary Intervention and Complementary Treatment 5.2.1 Side Stage of Primary Coronary Intervention 5.2.1.1 Access Path in recent years, several studies have provided strong evidence in favor of how radiation radiates as an initial access site in patients. ACS through Haemorrhagic Adverse event reduction by the TRansradial access website and the system deployment of angioX (MATRIX)143 trials to recruit ACS 8404 (48% STEMI) patients randomly allocated to access transradial or transfemoral radial access is linked to lower levels. Access to bleeding sites, vascular complications, and the need for transfusion of vital There were significant mortality benefits in patients allocated to the transradial access site, which supplemented previous observations from

Radial Versus Femoral Access for Coronary Artery Intervention (RIVAL) for coronary artery intervention trials, 144 and Radial Versu Femoral Randomized Examination in st-Elevation Acute Coronary Syndrome (RIFLE-STEACS) trials.145 It suggests that the results of this examination can be amplified with confidence in the treatment of patients with the disease. STEMI 5.2.1.2 stenting in the main percutaneous intervention of coronary artery sting is a technique of choice during the main PCI, compared to balloon angioplasty alone, stenting with bare metal stent (BMS) is associated with a lower risk of reinfarction and target vessel regeneration, but is not associated with reducing mortality rates in the main PCI, stsent. Eluting (DES) drug reduces risk of repetitive target boat restoration Compared to BMS.148New-generation DES has shown superior safety and treatment, or even better performance compared to the first generation DES, especially regarding reducing the risk of thrombosis. Stent and MI repeated in two recent trials - the effects of eluting biolimus stents with biodegradable polymers compared to bare metal stents in cardiovascular events among patients with AMI (comfortable AMI) trials 149 and Everolimus-Eluting Stents vs. Stents Bare-Metal Stents in st-segment elevated Myocardial Infarction (Review) trials. In the latter trial, a 5-year follow-up results released recently showed a decrease in total cause mortality by DES compared to BMS.151 in the Norwegian Coronary Artery Stent (NORSTENT), 152 9013 patients who passed PCI (26% with STEMI) were randomly assigned to DES or BMS. After a median trace of 5 years, however, DES is associated with a lower rate of absolute venous thrombosis (0.8% vs. 1.2%; P = 0.0498) and any target lesions and regeneration (16.5% vs. 19.8%; P<0.001) 152Deferring stenting in the main PCI has been examined as an option to reduce microvascular blockage (MVO) and maintain microbiotaps. Two recent small studies found the opposite effect on the effect of sledging stenting in the electromagnetic heart (CMR) imaging measure MVO.153,154 in a large DANish study of the best acute treatment of patients with ST-segment myocardial infarction – postponed compared to a general stent transplant in elevated patients with ST-segment myocardial infarction (DANAMI 3-DEFER) trial, 155 per cent of patients with myocardial infarction. In 1215 STEMI Deferred stenting (48 hours after index procedure) It does not affect the main clinical outcomes (a composite of all non-fatal MI cause deaths or non-IRA wound recovery driven ischaemia), a routine deferred sting associated with higher demand for targeted ship reconstruction. Based on these findings, it is not recommended to use routinely deferred stenting 5.2.1.3 Thrombus ambitions, a small number of studies or a single center, and one meta-analysis of 11 small trials. It is recommended that it may benefit from regular self-ambition during the main PCI range, recently two large (> 10 000 and >7000 patients). Randomized controlled trials, which were sufficiently driven to regularly monitor the superiority of manual ambitions compared to the typical PCI, showed no benefit to the clinical results of the overall ambition strategy of 157-160 safety concerns raised in the routine Thrombectomy ambitious experiment with PCI with PCI alone in patients with STEM trials. I (TOTAL) (n = 10 732) with an increase in the risk of stroke 161 in the subgroup with a high thrombus load [TIMI (Thrombolysis in myocardia) thrombus grade ≥3], Ambition of thrombus was associated with fewer cardiovascular deaths [170 (2.5%) vs. 205 (3.1%); Hazard ratio (HR) 0.80, confidence range 95% (CI) 0.65–0.98; P = 0.03] and there are more tempo or temporary attacks [55 (0.9%) vs. 34 (0.5%); odds ratio 1.56, 95% CI 1.02–2.42, P =0.04] However, the interaction P values were 0.32 and 0.34, respectively, 162 in the Taste157 and TOTAL159 trials, 1-5% of randomized patients skipped from PCI alone to ambition. Based on these data and the results of recent meta-analysis, it is not recommended to use the ambition of routine thrombus 162, but in the case of a large residual trombus load after opening the boat with a navigation wire or balloon, the ambition of thrombus may be considered 5.2.1.4 cardiovascular disease, multi-cycle multivessel disease is normal (approximately 50%) in patients with STEMI.163,164, while it is always recommended that IRA treatment is always supported immediately (preventive of the prevention of additional coronary artery stenos). There have been reports that patients with extensive CAD in remote vessels from the IRA had a lower ST-segment recovery rate and adverse prognosis after pci.163 core data from the U.S. National Cardiovascular Data Registry and new York State Coronary Intervention Reporting System suggested an increase in adverse events, including deaths in patients treated with multiple immediate cycles of rehabilitation compared to AN PCI, while diabetes shock patients were excluded from the analysis of 165,166Randomized clinical trials that addressed this small problem (each of which included 69 to 885 patients). One study allocated 214 STEMI patients with multiple-cell dysleveles to three arms: IRA angioplasty, only concurrent non-IRA treatment. In the follow-up average of 2.5 years, patients allocated to ira angioplasty only had more significant adverse heart events (MACE) (eg. Death, reinfarction, rehospitalization for ACS, and repeated coronary artery regeneration) After this study, four randomized clinical trials compared the PCI's IRA only against complete rehabilitation: Angioplasty. Prevention in acute Myocardial Infarction (PRAMI) trials (n= 465 , 23 months track),168 complete compared to Lesion-Only Core PCI Trial (CvLPRIT) (n= 296, follow-up 12 months), 169 Complete regeneration compared to the treatment of culprit wounds only in patients with elevated ST-segment myocardial infarction and multiple diseases (DANAMI-3–PRIMULTI) trials (n=627, follow-up 27 months), 170 and comparisons between FFR recommended regeneration compared to a general strategy in acute STEMI patients with multicellular disease (acute comparison, n = 885, 12 months follow-up) trial.171 OF NON-IRA's PCI-NON-IRA patients have been diagnosed with acute disease (n= 885, 12 months follow-up) trial.171 Stage stage during hospitalization (DANAMI-3–PRIMULTI) or any time before discharge (immediate or periodic) (CVLPRIT) Indications for PCI in non-IRA are angiography recommended in wounds with ≥50%. Narrowing (PRAMI), >70% narrowing (CVLPRIT) or fractional flow reserve (FFR) navigation (DANAMI-3-PRIMULTI and acute comparison) Main results (composite of different destinations) Significant reduction in the complete regeneration group in the four trials. The total mortality rate was not statistically different in all four trials. Repeated regeneration decreased significantly in the complete regeneration arm in PRAMI, DANAMI-3-PRIMULTI, and non-fatal MI acute trial comparisons decreased in non-IRA PCI groups only in PRAMI. The lack of significant therapeutic effects of non-IRA wound interventions against death, or MI, was confirmed by three meta-analyses172-174 (none of these meta-analyses included acute comparative trials and one173 excluding DANAMI-3-PRIMULTI) from these data should consider restoring non-IRA wounds in STEMI patients with multiple-cell pre-discharged diseases in hospitals. As the best period of restoration (immediately vs. procedures) has not been adequately reviewed, no instructions in favor of the immediate versus multi-stage PCI multi-stage can be formulated 5.2.1.5 balloon pumps within the aortic argument to reduce the infarct size of pre-PCI-Acute Myocardial Infarction (CRISP AMI). In addition, a recent randomized trial showed that IABP did not improve results in MI with 177 Haemodynamic cardiac shocks in patients with heart disease shock. In Chapter 8, the stage side of primary coronary artery intervention strategy 5.2.2 Periprocedural Pharmacokinetics 5.2.2.1, platelet inhibition, patients who undergo primary PCI should receive DAPT, a combination of aspirin and p2Y12 inhibitors and parental anticoagulants. Aspirin can be eaten, including chewing or i.v. to ensure complete inhibition of platelet-dependent combinations of thromboxane A2. With 50% oral bioavailability of oral aspirin, the corresponding dose is 75-150 mg. Pharmacological data suggest that this lower dose range avoids cyclooxygenase-2 inhibitors based on prostacyclin. A recent randomized study showed that a single dose of 250 or 500 mg i.v. acetylsalicylic acid compared to 300 mg orally was associated with faster and more complete inhibition of thromboxane formation and platelet inclusion at 5 minutes, with an comparable rate of bleeding complication.181 is limited evidence about when P2Y12 inhibitors should begin in patients. STEMI. The administration of Ticagrelor in the Cath laboratory or in the ambulance for the new ST elevation myocardial infarction to launch coronary artery trials (ATLANTIC) 182 is the only randomized study that tested the safety and efficacy of different times of P2Y12 inhibition initiated in STEMI in this trial. The median difference between the two strategies maintained a test load of just 31 minutes. The rate of major and slightly identical bleeding events in both treatment arms. While evidence of the clinical benefits of P2Y12 inhibiting pre-treatment in this deficiency setting, premature initiation of P2Y12 inhibitors while patients are transported to the main PCI centers is a common practice in Europe and consistent with pharmacokinetic data. In addition, early treatment with high-dose clopidogrel is superior to laboratory treatment in the catheter, in observational studies and one small randomized trial, all 183-185, the data suggests that the fastest administration may be better at achieving early efficacy, especially for long delays. However, in the event that the diagnosis of STEMI is not clear, p2Y12 inhibitors should be delayed until the anatomy is known. The preferred P2Y12 inhibitors are prasugrel [60 mg load dose and 10 mg maintenance dose once a day per os (p.o.)] or ticagrelor (180 mg p.o. loading dose and 90 mg maintenance dose twice daily). These drugs have the onset of rapid action, greater strength and superiority to clopidogrel in clinical results. In patients with previous /temporary stroke, ischaemic attacks and general use are not recommended in patients aged ≥75. Years or in patients with decreased body weight (<60 kg) because they are not associated with the net clinical benefit in these subsets. In the case of the use of prasugrel in these patients, it is recommended to take a dose (5 mg). When none of these agents (or if they are contraindicated), clopidogrel 600 mg p.o. Should have been replaced.190 Clopidogrel Not being evaluated with a placebo in any large results study in the setting of the main PCI, but a higher regimen of load doses of 600 mg / 150 mg maintenance dose in the first week is better than the 300/75 mg regimen in a subset of patients receiving PCI in Clopidogrel and aspirin take the best dose to reduce. Recurring events – The seventh organization to evaluate the strategy in ischaemic syndromes (CURRENT-OASIS 7) trials, 190 and the use of high clopidogrel load volumes has been shown to achieve a more rapid inhibition of receptors. All P2Y12 inhibitors should be used with caution in patients at high risk of bleeding or significant anemia. Cangrelor is a potent P2Y12 inhibitor with a quick start and action compensation. It was evaluated in three randomized controlled trials, registering patients with PCI for stable angina, or ACS, with clopidogrel or placebo load.191–193 Pool analysis of these three trials shows that cangrelor reduces ischaemic periprocedural complications at the expense of increased risk of bleeding194 The fact that no potent P2Y12 inhibitors (prasugrel or ticagrelor) are used in patients with ACS, and only about 18% of registered patients presented with STEMI,193 limits. Enforcement of the current practical results of the management of the patient. However, cangrelors may be considered in patients who are not treated in advance with oral P2Y12 receptor inhibitors, while PCI or in those deemed unable to absorb oral agents. Pre-hospital routines using glycoprotein inhibitors (GP) IIb/IIIa before primary PCI have not been shown to benefit and increase bleeding risk compared to regular use in garden laboratories195,196. Plus, heparin (UFH) does not spread the benefits compared to bivalirudin.197 using GP IIb/IIIa inhibitors as a bailout treatment in the case of angiographic evidence of large thrombus, slow or no reflow, and other thrombotic complications are reasonable. There is no evidence to suggest regular use of GP IIb/IIIa inhibitors for primary PCI. Administration of GP inhibitors IIb / IIIa does not prevail over the use of i.v. 198 5.2.2.2 Anticoagulant options for core PCI include UFH, enoxaparin and bivalirudin using fondaparinux in the context of the main PCI is associated with potential hazards in the organization for strategic evaluation for Ischemic Syndromes 6 (OASIS 6) trials and does not recommend.199 No placebo trials evaluate UFH in the main PCI, but there is a large body of experience with this agent. No strong data suggests using activated coagulation to refine the dose or UFH detection, and if the erection is activated, it should not delay the recanalization of IRA i.v. bolus of enoxaparin 0.5 mg / kg was compared with UFH in the open open myocardial infarction label. Primary angioplasty and enOxaparin inTravenous or heparin are not complicated to reduce ischaemic and short-term bleeding events and long-term follow-up (ATOLL) trials, Including 910 STEMI patients, 200 primary composite endpoints of MI 30-day deaths, stage failure or significant bleeding were not significantly reduced by enoxaparin (relative risk reduction 17% P =0.063), but there was a decrease in the primary secondary endpoint of RECURRENT MI or ACS deaths or urgent reconstruction of no evidence that increased bleeding after the use of enoxarinap over UFH.200 in the subsequent analysis of ATOLL protocol (88% of the population). enoxaparin prevails over UFH in the main endpoint reduction, Ischaemic end, mortality, and major bleeding.201 In meta-analysis of 23 PCI trials (30 966 patients, 33% PCI Main), enoxaparin This effect is particularly significant in the main PCI context and is associated with a significant reduction in bleeding 202 depending on these considerations, enoxaparin. Five particularly randomized controlled trials have compared bivalirudin with UFH with or are not planned to use GP IIb/IIIa inhibitors in patients with STEMI.197,203-207 Meta-analysis of these trials showed no mortality advantage with bivalirudin and reduced the risk of major bleeding, but at the expense of increased risk of acute blood clots. Bivalirudin did not reduce the incidence of primary endpoints (composite of death, MI, or stroke) compared to UFH. Education.210 MATRIX experiments showed that immersion in bivalirudin for a long time after PCI did not improve results compared to limited bivalirudin infusion. However, an ad hoc post analysis suggests that prolonging bivalirudin life with full PCI doses after PCI is associated with the lowest risk of ischaemic and bleeding events, which are based on the current label of the drug 209 based on these data, bivalirudin should be considered in STEMI, especially in patients with high blood yceging risk.197,211,212 Biivalrudin Treatment with anticoagulant drugs after routine procedures is not specified after the main PCI, except when there are separate indications for full-dose anticoagulants. [Due to, for example, the arrhythmia (AF), mechanical valve or LV thrombus), or prophylaxis dose to prevent venous thrombosis in patients who need to stay in bed for a long time. Periprocedural antimicrobial therapy and post-stage treatments in patients through primary coronary intervention, table 6Doses of antiplatelet and anticoagulant cotherapies in patients who undergo primary cardiovascular intervention or do not reperfused 5.2.2.3 therapy to reduce size and microflora size, and MVO is a major independent predictor of long-term mortality and heart failure in STEM survivors. I.216,217 MVO is defined as insufficient myocard perfusion after successfully opening the IRA's machine, and caused by several factors, 218 MVO is diagnosed immediately after PCI when the flow of ANGIOGRAPHIC TIMI after the procedure is < or in the case of TIMI's flow of 3 when the myocardial blush grade is 0 or 1, or when the ST resolution is within 60-90 minutes of the procedure< 70% Other non-invasive techniques in MVO diagnostics are late gadolinium optimization (LGE) CMR (current state of the art for identifying MVO and dosage), contrast echocardiography, Single photon computed tomography (SPECT) and positron emission x-ray (PET) 218 different strategies such as post-coronary artery conditioning, early remote ischaemic conditioning, early i.v. metoprolol, GP IIb/IIIa inhibitors, drugs targeting mitochondrial integrity or nitric oxide pathways, adenosine, Glucose modulators, hypothermia, and others, have been shown to be useful in pre-clinical trials and small, 217,219 clinical trials. But there are still treatments aimed at reducing ischaemia/reperfusion (MI-sized) injuries associated with improved clinical outcomes. The reduction of ischaemia/reperfusion injuries in general and MVO in particular remains an unwanted requirement to improve long-term vascular function in STEMI 5.3 Fibrinolysis and the National Pharmacokinetic Strategy 5.3.1 Benefits and indications of fibrinosis fibrinolytic therapy are key reperfusion strategies in the main PCI settings, unable to present in a timely manner and prevent premature death 30 per. ผู้ป่วยที่ได้รับการรักษาภายใน 6 ชั่วโมงหลังจากอาการเริ่มมีอาการ 220 ผลประโยชน์สัมบูรณ์ที่ใหญ่ที่สุดจะเห็นในหมู่ผู้ป่วยที่มีความเสี่ยงสูงสุดรวมถึงผู้สูงอายุและเมื่อได้รับการรักษา <2 h= after= symptom= onset.138,221= fibrinolytic= therapy= is= recommended= within= 12= h= of= symptom= onset= if= primary= pci= cannot= be= performed= within= 120= min= from= stemi= diagnosis= (see= figure= 3)= and= there= are= no= contraindications.= the= later= the= patient= presents= (particularly= after= 3= h),98,120,121= the= more= consideration= should= be= given= to= transfer= for= primary= pci= (as= opposed= to= administering= fibrinolytic= therapy)= because= the= efficacy= and= clinical= benefit= of= fibrinolysis= decrease= as= the= time= from= symptom= onset= increases.120= in= the= presence= of= contraindications= for= fibrinolytic= treatment,= it= is= important= to= weigh= the= potentially= life-saving= effect= of= fibrinolysis= against= potentially= life-threatening= side= effects,= taking= into= account= alternative= treatment= options= such= as= delayed= primary= pci.= doses= of= fibrinolytic= agents= and= antithrombotic= co-therapies= are= listed= in= table= 7.= table= 7doses= of= fibrinolytic= agents= and= antithrombotic= co-therapies= 5.3.2= pre-hospital= fibrinolysis= in= a= meta-analysis= of= six= randomized= trials= (n=6434) , pre-hospital= fibrinolysis= reduced= early= mortality= by= 17%= compared= with= in-hospital= fibrinolysis,123= particularly= when= administered= in= the= first= 2= h= of= symptom= onset.138= these= and= more= recent= data= support= pre-hospital= initiation= of= fibrinolytic= treatment= when= a= reperfusion= strategy= is= indicated.97,99,100,237= the= stream= trial= showed= that= pre-hospital= fibrinolysis= followed= by= an= early= pci= strategy= was= associated= with= a= similar= outcome= as= transfer= for= primary= pci= in= stemi= patients= presenting= within= 3= h= after= symptom= onset= who= could= not= undergo= primary= pci= within= 1= h= after= fmc.121,238if= trained= medical= or= paramedical= staff= are= able= to= analyse= the= ecg= on-site= or= to= transmit= the= ecg= to= the= hospital= for= interpretation,= it= is= recommended= to= initiate= fibrinolytic= therapy= in= the= pre-hospital= setting.= the= aim= is= to= start= fibrinolytic= therapy= within= 10= min= from= stemi= diagnosis.= 5.3.3= angiography= and= percutaneous= coronary= intervention= after= fibrinolysis= (pharmacoinvasive= strategy)= following= initiation= of= lytic= therapy ,= it= is= recommended= to= transfer= the= patients= to= a= pci= centre= (figure= 3).= in= cases= of= failed= fibrinolysis,= or= if= there= is= evidence= of= reocclusion= or= reinfarction= with= recurrence= of= st-segment= elevation,= immediate= angiography= and= rescue= pci= is= indicated.124= in= this= setting,= re-administration= of= fibrinolysis= has= not= been= shown= to= be= beneficial= and= should= be= discouraged.124= even= if= it= is= likely= that= fibrinolysis= will= be= (st-segment= resolution=> is offered 50% at 60-90 minutes; general re-beating and disappearance of chest pain). The strategy of early angiography routinely suggests that if there are no contraindications. Multiple randomized trials 126–128,234,239,240 and meta-analysis 129,130 have shown that early routine angiography with subsequent PCI (if necessary) </2> </2> Fibrinolysis reduces the rate of reinfarction and recurrent ischaemia compared to the 'wait-for-surveillance' strategy, in which angiography and revascularization examinations are identified only in patients with anemia or induced severe ischaemia or LV disorders, or in those with positive outpatient anemia tests. The benefits of PCI routine early after seeing fibrinolysis in the absence of an increased risk of adverse events (stroke or major bleeding) and in a subset of patients 241, so the early angiography with subsequent PCI, if also identified, is the recommended standard of care after successful fibrinolysis (see Figure 3) the key problem is the appropriate time to delay between a successful breakdown and PCI; There was a widespread change in the delay in the trial, from the median of 1.3 h in total Angioplasty intervention and pharmacology compared to Thrombolytics ALone in acute myocardial infarction (CAPITAL AMI) trials 24 0 Up to 17 hours in Grupo de Análisis de la Cardiopatía Isquémica Aguda (GRACIA)-1234 and THE STREAM.121 trial in an integrated patient-level analysis of six randomized trials, very fast angiography (<2 h) After fibrinolysis is not associated with an increased risk of 30-day death/reinfarction or significant bleeding in the hospital, and a shorter time of onset is angiography (<4 hours), associated with a decrease of 30 days and 1 year of death/reinfarction and 30 days. The repetition of ischaemia.125 is based on this analysis, as well as the trial, with a median delay between the onset of lysis and angiography of 2-17 h ,121,126–128 5.3.4 fibrino compound comparison. Lytic specific fibrin agents should be preferred of 224 single bolus weight-adjusting tenecteplase tissue plasminogen activator (TNK-tPA) equivalent to tPA accelerated in reducing mortality for 30 days, but it is safe to prevent non-brain blood and blood transfusions, and easy to use in pre-hospital settings.223 5.3.5 Anti-brain augmentation and anticoagulant therapy Early studies have shown that the benefits of aspirin and fibrinolytics (eg. streptokinase) as an additive.213 The first dose of aspirin should be chewed or given, such as v. and low doses (75–100 mg). Let be eaten every day after that. Increasing aspirin reduces the risk of cardiovascular events and overall mortality in patients treated with There is no evidence that administering GP IIb/IIIa inhibitors increases myocardial perfusion or results in patients treated with fibrinolysis, and bleeding may increase.242 Blood clotting in the abdomen should be given until restoration (if carried out). Otherwise, it should be given at least 48 hours or throughout the maximum stay period of 8 days, despite the increased risk of major bleeding, net clinical benefits favor enoxaparin rather than UFH in its ASsessment. And the efficacy of the new Thrombolytic 3 (ASSENT 3) trial (n= 6095)227 in Large Enoxaparin and Thrombolysis Reperfusion for the treatment of acute myocardial infarction – Thrombolysis In Myocardial In Experiments 25 (ExTRACT–TIMI 25) (n = 20 506) Lower enoxaparin dose to patients aged ≥75 Years and those with impaired renal function (estimated creatinine clearance <30 mL / min) Enoxaparin is associated with a lower risk of death and reinfarction at 30 days compared to weight-adjusted UFH doses, but the cost of a significant increase in non-brain blood complications. Net clinical benefits (eg. Lack of death, infarction (not serious, and haemorrhage intracranial) favors enoxaparin.229230 in the end, In large oasis-6 trials that would prevail in this placebo or UFH setting in the prevention of death and reinfarction, 199,233, especially in patients receiving streptokinase. It has not been studied with a specific agent. Therefore, there is no evidence to support thrombin inhibitors directly as an adjunct of fine weight fibrinolysis i.v. tenecteplase, aspirin, and oral clopidogrel, and enoxaparin i.v. followed by .c The administration until the time of PCI (revascularisation) consists of the most widely studied antithrombotic cocktail as part of the pharmacokinetics strategy. The dangers of fibrinosis fibrinolytic therapy are associated with small but significantly excess strokes, mainly caused by bleeding in the brain, with excess harm appearing in the first day after treatment of 220 advanced age, lower weight than females, previous strokes and systolic hypertension and diastolic in admission as a major predictor of intracranial haemorrhage.245 in the last trial of internal bleeding in 0.9–1.0% of the total population studied.121,22222222266.6 In the STREAM trial, the initial surplus in intracranial haemorrhage in patients ≥75. Data from a number of studies suggest that significant non-cerebral bleeding occurs in 4-13% of patients treated 121,223,224,246 administered streptoasekin may be associated with hypertension, but severe allergic reactions are rare. 5.3.7 Contraindications to the treatment of fibrinolytic, life-saving, short successful, not contraindicated therapy. Fibrinolytic in patients with refractory cardiac arrest, lytic treatment does not effectively increase the risk of bleeding, so it is not recommended for a long time, or But successfully, resuscitation increases bleeding risk and is a relative contraindication with fibrinolysis.247Table 8 lists the exact and relative contraindications to the therapy. Table 8 indicates fibrinolytic treatment for 5.4 coronary arteries, bypass surgery, rebirth, bypass surgery, graft (CABG) should be considered for patients with IRA patents, but with improper anatomy for PCI, And whether it's a large dangerous heart muscle area or heart shock248 in patients with mi-related mechanical complications that require coronary artery rehabilitation, cabg recommended while repairing of STEMI patients who fail PCI or coronary artery obscurity can not be amenable to PCI, the emerging CABG is performed infrequently because the benefits of reconstructive surgery in this setting are uncertain. In the absence of random data, the optimal timing for non-reborn CABG in patients after a stable MI should be considered individually. A review of California release data compared patients receiving early (<3 days n=4676) compared to delays (≥3 days n = 4800) patients after MI CABG.249 through early CABG had a higher mortality rate (an unfair mortality rate of 5.6% vs. 3.8%; The trend-adjusted odds ratio was 1.40, 95% CI 1.12–1.74; P< 0.001), with the highest mortality rate observed in patients performing surgery on MI (8.2%). Patients with blood deterioration or those at high risk of recurrent ischaemic events (e.g. patients with large areas of heart muscle die at a dangerous risk due to major coronary artery stenoses or recurrent ischaemia) should be carried out as soon as possible without waiting for a full recovery of platelet function after the cedterage of DAPT for other patients, a 3-7-day waiting period may be the best compromise (at least 3 days after the interruption of ticagrelor,187,250 5 days for clopirie. While it is recommended that aspirin continue.251, the first aspirin administration after CABG is recommended 6-24 hours after surgery in the absence of continuous bleeding. Management between hospitalization and discharge 6.1 cardiovascular care unit / intensive cardiac care unit after reperfusion is recommended to accept STEMI patients to CCU/ICCU or equivalent units that can provide ongoing monitoring and specialized care. Employees should be familiar with the management of ACS, arrhythmia, heart failure, mechanical circulatory support, invasive and non-invasive haemodynamic monitoring (arterial and pulmonary pressure), Respiratory monitoring, mechanical ventilation and target temperature management The unit should be able to Patients with severe kidney and lung disease Organizations that require the structure and criteria of CCU/ ICCU are described in the ESC-Acute Cardiovascular Care Association (ACCA) position paper 254 6.2 ECG monitoring for atrial fibrillation and ST deviations are recommended at least 24 hours after symptoms begin in all STEMI patients. Longer monitoring should be considered in middle-to-intermediate patients at high risk for arrhythmia (those with more than one of the following criteria: haemodynamically. ไม่เสถียรนำเสนอภาวะหัวใจเต้นผิดจังหวะที่สำคัญ LVEF <40%, failed= reperfusion,= additional= critical= coronary= stenoses= of= major= vessels,= or= complications= related= to= pci).= further= monitoring= for= arrhythmias= depends= on= estimated= risk.= when= a= patient= leaves= the= ccu/iccu= or= equivalent,= monitoring= may= be= continued= by= telemetry.= it= is= recommended= that= personnel= adequately= equipped= and= trained= to= manage= life-threatening= arrhythmias= and= cardiac= arrest= accompany= patients= who= are= transferred= between= facilities= during= the= time-window= in= which= they= require= continuous= rhythm= monitoring.= 6.3= ambulation= early= ambulation= (day= 1)= is= recommended= in= the= majority= of= patients= and= is= facilitated= by= using= the= radial= access= for= pci.= patients= with= extensive= myocardial= damage,= heart= failure,= hypotension,= or= arrhythmias= may= initially= rest= in= bed= before= assessment= of= myocardial= function= and= achievement= of= clinical= stabilization.= prolongation= of= bed= rest= and= limitation= of= physical= activity= may= occasionally= be= needed= for= patients= with= large= infarcts= or= with= severe= complications= depending= on= symptoms= and= ability.= 6.4= length= of= stay= the= optimal= length= of= stay= in= the= ccu/iccu= and= hospital= should= be= determined= on= an= individual= basis,= according= to= the= patient's= cardiac= risk,= comorbidities,= functional= status,= and= social= support.= generalization= of= successful= reperfusion= and= knowledge= of= coronary= anatomy= has= led= to= progressive= reductions= in= length= of= stay= after= stemi,= with= significant= reductions= in= 30= day= mortality,= suggesting= that= earlier= discharge= is= not= associated= with= late= mortality.255,256= several= studies= have= shown= that= low-risk= patients= with= successful= primary= pci= and= complete= revascularization= can= safely= be= discharged= from= hospital= on= day= 2= or= day= 3= after= pci.256–262= candidates= for= early= discharge= after= stemi= can= be= identified= using= simple= criteria= [e.g.= the= second= primary= angioplasty= in= myocardial= infarction= (pami-ii)= criteria,= the= zwolle= primary= pci= index,= or= other= criteria].257,258= the= pami-ii= criteria= designate= as= low= risk= patients= aged=></40%,> <70 years,= with= an= lvef=>45%, One or two vessels, a successful PCI and no permanent arrhythmia. Short-term hospital stays mean a limited time. Therefore, these patients should have a post-release consultation with a cardiologist, primary care physician or designated specialist nurse, and register quickly in the official.</70> Therefore, these patients should have a post-release consultation with a cardiologist, primary care physician or designated specialist nurse, and register quickly in the official.</70> In hospitals or outpatients. Early transfers (e.g. same days) to local hospitals after a successful primary PCI is routinely practiced, this can be done safely under adequate monitoring and supervision in selected patients, such as those who do not have signs or symptoms consistent with ongoing atrial fibrillation without atrial fibrillation, which is haemodynamically stable, does not require vasoactive or mechanical support and is not prescribed for further rehabilitation.263 Biological problems for hospital stay. 6.5 Special patients, several specialized subsets of patients should be specifically considered 6.5.1 patients who take oral anticoagulant drugs, many patients presented with STEMI previously in the fight against oral blood clotting or the need for long-term anticoagulant drugs afterwards. Adding DAPT to oral coagulation increases the risk of bleeding complications two to three times compared to blood clotting alone 266–269 management during STEMI: due to oral blood clotting prevention is a relative contraindication for fibrinolysis, when these patients are accompanied by STEMI, they should be triaged for the main PCI strategy regardless of the expected time of mediation PCI reperfusion. The patient should receive additional anticoagulant drugs in the colon, regardless of the duration of the last anticoagulant drug in the oral cavity. GP IIb/IIIa inhibitors should be avoided as aspirin loads should be the same in all STEMI patients, and clopidogrel is a P2Y12 inhibitor of choice (600 mg load dose) before or recently in the time of PCI. Proton pump inhibitors are recommended, maintenance after STEMI: in general, continuity of oral clotting in patients with indications for DAPT (e.g. after STEMI) should be carefully evaluated and continue only if there is compelling evidence. While there is a greater overlap of ischaemic-related risk factors with bleeding effects, many rated bleeding risk better than CHA2DS2-VASc [heart failure, hypertension, age ≥75 (twice), Diabetes, Stroke (Twice) – Vascular disease, ages 65-74 and gender type (female)] To predict bleeding risk 270,271 for most patients, treatment three times (in the form of oral blood clotting, aspirin, and clopidogrel) should be considered for 6 months. Then it is important to consider oral blood clotting plus aspirin or clopidogrel for an additional 6 months, after 1 year is indicated to treat oral blood clotting only. In case of very high bleeding, the treatment three times can be reduced to 1 month after STEMI continues to receive double treatment (oral coagulation plus aspirin or clopidogrel) up to 1 year, and after that only prevents blood clotting.5,7 Part of the recommended target range When using oral anticoagulant drugs that are non-vitamin K, the lowest effective test drug should be used for stroke prevention. In general, lower doses are lower than approved doses are not recommended. More recently, open-label, randomized, controlled, multi-center studies explored two treatment strategies of Rivaroxaban and a modified vitamin K antagonist treatment strategy in subjects with atrial fibrillation through coronary artery intervention (PIONEER AF-PCI) Randomized study of 2124 patients with non-valvular AF, AF receiving PCI with stenting (~12%) STEMI patients), are given low doses of rivaroxaban [15 mg o.d. (once a day)] plus P2Y12 inhibitors (93% clopidogrel) and no aspirin for 12 months, rivaroxaban Very low dosage (2.5 mg.b.i.d.) plus DAPT (95% clopidogrel) for 1, 6, or 12 months, or standard treatment with vitamin K, adjusted DaPT dose (96% clopidogrel) for 1, 6 or 12 months 272 primary safety endpoints (TIMI clinically significant bleeding) decreased in two groups receiving rivaroxaban, no difference in major bleeding or blood transfusions observed across the group. However, this study was encouraged for assessing differences in ischaemic events such as blood clots or stroke rates. Therefore, uncertainty remains about the comparative efficacy of three antithrombotic regimens tested in patients with high stroke risk and/or stent blockage 6.5.2 elderly patients due to the age of the population, a higher proportion of elderly patients are expected to be presented with STEMI. MI's diagnosis may be delayed or missed.27 In addition, older people had more comorbidities and were less likely to receive reperfusion treatment compared to 273,274 younger patients, elderly patients were also at particular risk of bleeding and other complications from acute treatment because the risk of bleeding increased as renal function tended to decrease and the prevalence of high comorbidities, observational studies have shown, frequent excess medications of antithromromtic treatment in elderly patients 275, They are at high risk of mechanical complications. It is key to maintaining a high suspicion index for MI in elderly patients with abnormal complaints, treating them as recommended and using specific strategies to reduce bleeding risk. These include paying attention to the appropriate dose of antithrombotic treatment, especially in relation to renal function, frailty, or comorbidities, and using radial access whenever possible. There are no limits. Upper age associated with reperfusion, especially with pci.276 core 6.5.3 renal disorders, renal dysfunction [estimated glomerular filtration rate (eGFR) <30 mL / min / 1.7 3 m2] is present in approximately 30-40% of patients with ACS and is associated with worsening prognosis and increased risk of hospital complications. Although decisions about reperfusion in patients with STEMI must be made before any renal function assessment, it is important to evaluate GFR as soon as possible. The type and dosage of antibody anti-disease agents (see Table 9) and the dose of contrast agents should be considered according to renal function 277 ACS patients with chronic kidney disease (CKD) were given frequent excess medications with antithrombotics, having contributed to an increased hemorrhage risk of 275 so, in patients known or expected to reduce renal function, several antithrombotic agents should be properly suspended or their doses reduced appropriately. Ensuring proper hydration during and after pci core and limited The amount of contrast agent contrast agent of osmolality is particularly low, an important step in reducing the risk of nephropathy that causes contrast.1Table 9 Recommended The amount of antimicrobials in the care of acute patients with chronic kidney disease. 6.5.4 For specific reasons (e.g. long delays) Failure to be treated with reperfusion within the recommended time (12 hours first) should be immediately clinically evaluated to distinguish the presence of haemodynamic clinical or electrical uncertainty. 141 and should be considered in patients with no stable symptoms between 12-48 hours after symptoms of onset 133,142 after that time, both non-invasive tests for the presence of residual cardiac arrest. However, the PCI routinely is not listed in the IRA, which is totally obscured beyond the first 48 hours from the initial symptoms due to the increased risk of delayed complications (see Figure 4). In the arteries associated with infarct, according to the time from symptoms, start PCI = coronary artery intervention; Elevating st brain death in early presenters (e.g. those diagnosed with STEMI within 3 hours of initial symptoms), the main PCI strategy is the reperfusion strategy of choice. If the expected time from STEMI diagnosis to PCI-mediated reperfusion > 120 minutes, then fibrinolysis will immediately be identified after 3 hours (and up to 12 hours) of symptoms at the onset, later the patient presents, more consideration should be given to the main PCI strategy compared to administering therapy. In the development of STEMI (12-48 hours after the onset of symptoms), the usual main PCI strategies (urgent angiography and subsequent PCI, if specified) should be considered in all patients. After 48 hours (the latest STEMI) should be executed, but the pci routine of the total IRA occluded is not. Regardless of the time from the onset of ongoing symptoms, the introduction of ischaemia, haemodynamic uncertainty or arrhythmia is an indicator for the core PCI strategy, early echocardiography with the LVEF assessment identified in all patients. Medical treatment should include DAPT, blood clotting, and secondary preventive therapy. In patients who were eventually taken ticagrelor or prasugrel in need of 186,187, while in patients who did not receive PCI, clopidogrel is identified.225 Anticoagulation, especially with fondaparinux, is indicated until coronary artery rehabilitation is done or hospital release.199 These patients are usually treated. Therefore, it is important to emphasize that they should receive secondary preventive medical treatment, as well as those given. 6.5.5 diabetic diabetics are known to be presented with atypical chest pain more often than patients without diabetes and therefore may receive a delayed start of treatment278 additions, Although diabetics have a higher risk of death and complications (including regeneration after PCI), the selection of antithrombotic treatment and reperfusion treatment is the same as in patients without diabetes. It is recommended to evaluate blood sugar status in all STEMI patients with and without a known history of diabetes or hyperglycaemia, and to monitor it frequently in diabetics and patients with hyperglycemia. In seriously ill patients, there is a high risk of hypoglycemia-related events when using intensive insulin therapy281 in the absence of strong data to guide optimal glucose management (such as treatment criteria and glucose targets). In STEMI patients, intimate glucose control, but not too strict, appears to be the best way. In the acute phase, it is reasonable to manage hyperglycemia (e.g. maintain blood sugar concentrations of ≤11.0 mmol/L or 200 mg/dL), but avoid hypoglycemia 282 to assess the risk of renal insufficiency, it is recommended to measure eGFR in patients on metformin and / or sodium glucose co-transport 2 (SGLT2) inhibiting the management of hyperglycemia. 6.6. Risk Assessment 6.6.1 Clinical risk assessment All patients with STEMI should have an early short-term risk assessment, including an assessment of the extent of heart muscle damage, the emergence of successful reperfusion, and the presence of clinical markers with a higher risk of additional events, including older, rapid heart rate, low blood pressure, Killip >I, anteriorior mi previously MI elevated serum creatinine begins. Developed multiple risk scores based on identifiable parameters in the acute phase before reperfusion.264,283 global risk score of acute coronary heart events. 283,284 all patients should have a long-term risk assessment before discharge, including LVEF, CAD severity and the integrity of coronary artery regeneration, residual ischaemia of complications during hospitalization, and levels of metabolic risk markers, As well as total cholesterol, low-density lipoprotein cholesterol (LDL-C), high density cholesterol lipoprotein (HDL-C), triglycerides dieting, and plasma glucose, as well as kidney function. Patients who do not achieve reperfusion have a higher risk of early complications and death. These patients should be assessed for the presence of residual ischaemia and if appropriate, heart-death viability. Therefore, it is recommended to prescribe LVEF before hospital discharge in all STEMI patients, the emergency echocardiography presenting is expressed in patients with cardiac arrest, heart shock, blood uncertainty or questionable mechanical complications, and if the diagnosis of STEMI is uncertain. Regularly, after the main PCI, it is recommended to evaluate the LV resting function, as well as rv function and valve function to isolate mechanical complications after early infarction and LV thrombus. Patients with multicellular disease who receive IRA wound treatment only, or patients with delayed proposed STEMI, may benefit from additional assessments for ischemia or viability. The treatment of non-IRA ulcers in patients with multivessel disease is mentioned in section 5.2.1.4 in patients presented the day after an acute event with MI is completed, the presence of recurrent angina or ischaemia document, and proving viability in large myocardial territories may help determine the strategy of the planned reconstruction of THE IRA,135,285,286, although the evidence is controversial. The timing of the best imaging techniques (echocardiography, SPECT, CMR or PET) to detect dehydration and life of myocardial infarction is still determined, but will depend on local availability and expertise. Tests that have been widely validated and available are stress echocardiography and SPECT (in combination with exercise or pharmacological stress), but PET and CMR are equal. However, in post-MI patients, the detection of ischaemia left by echocardiography is challenging due to the abnormalities of the existing wall movements. However, the ability to detect viability and predict the recovery of wall movements does not significantly surpass other imaging techniques. It was shown to be associated with improved shrinkage and resolution of thinning walls after regeneration, stressing the importance of viability in addition to wall thickness and heart muscle regeneration to improve the prognosis291 PET. It is also a high-resolution technique, but its use is limited by cost and availability. Randomized clinical trials with PET imaging showed that patients with a large number of disorders but viable heart attacks were more likely to benefit from myocardial infarction and may show improvements in regional and global contraction function, symptoms, exercise ability, and long-term prognosis292 the relationship between life and survival improved after rehabilitation was also demonstrated by meta-analysis.293In patients with LVEF before release ≤40% The reassessment of LVEF 6-12 weeks after complete rehabilitation and best medical treatment is recommended to assess the potential requirements for early prevention of heart transplantation (ICD) 3 additional parameters measured by imaging in these patients and that can be used as an end point in clinical trials are: (1). Infarct (CMR, SPECT, PET) (2) risky heart muscle (spect, cmr); (3) MVO (CMR); and (4) in-heart hemorrhage (CMR) Infarct and MVO doses are long-term mortality and heart failure in STEMI.216,217,294Summary of imaging indicators for test and stress in patients. Long-term therapy for elevating ST-segment myocardial infarction 7.1 Lifestyle interventions and risk control Important lifestyle interventions, including stopping smoking, optimal blood pressure control, dietary advice and weight control, and promoting exercise. Detailed guidance is provided from esc guidelines on prevention4 during hospitalization, time for secondary prevention operations is limited, and close cooperation between cardiologists and general practitioners, rehabilitation nurses, specialists, pharmacists and physiotherapists is extremely important. The habits of life are not easily changed, and the use and tracking of these changes is a long-term action. Smoking 7.1.1 Smoking has a strong pro-thrombotic effect, and quitting smoking may be the most (costly). Of all secondary preventive measures 301 abstinence interventions should begin during hospitalization, when smoking is not allowed and continue during the follow-up period after discharge, 302,303 benefits of abstinence in CAD patients, including the majority of mi suffering have been shown in meta-analysis (20 observational studies, including 12 603 patients). The 36% report on mortality reductions in quitters.304A shows the addictive nature of smoking habits305 has strong evidence for short intervention, with a combination of behavioral support and pharmacists including nicotine replacement treatment, bupropion, and varenicline.305,306 e-cigarettes may also be helpful in achieving smoking cessation, as there is

some evidence from two randomized clinical trials. (662 patients) It showed that e-cigarettes containing nicotine had higher abstinence or reduced smoking rates compared to placebo.307 7.1.2 Diet, alcohol and weight control Current guidelines on prevention are recommended: (i) A diet similar to the Mediterranean diet, which includes a total energy intake of up to 10% from saturated fats, is replaced by minimal polyunsaturated and trans fatty acids. (ii) Salt Content < 5 (iii) grams per day; 30-45 grams of fiber per day (iv) ≥200 200 grams of vegetables and vegetables per day (v) fish 1-2 times a week (especially its varieties); 30g unsalted beans daily (vii) Limited alcohol content [up to 2 glasses (20g alcohol) daily for men and 1 for women]; and (viii) deprived sugar-sweetened beverage4 moderate alcohol consumption in abstinence is not recommended. Overweight and obesity [Body Mass Index (BMI) ≥25 kg/cu.m.] It is associated with all causes mortality higher compared to a healthy weight (BMI between 20 kg/sq.m. and <25 kg/sq.m.). Abdominal fat is particularly dangerous and weight loss has benefits in cardiovascular risk factors. Therefore, maintaining a healthy weight or weight loss is recommended for all subjects. However, it has not been established that weight loss per se reduces mortality rate by 7.1.3 exercise based on cardiac rehabilitation. Taking into account their age, pre-infarction levels of activity, and physical limitations. Particular cardio rehabilitation programs include exercise training, risk factor modification, education, stress management, and psychological support309 in large-scale meta-analysis, exercise training as part of a cardiac rehabilitation program is associated with a 22% reduction in heart mortality rates in patients with CAD.309 the benefits of heart rehabilitation seem to go through the direct physiological effects of exercise and through direct exercise. Additional benefits in the context of short-term hospital stays are to ensure proper titration and monitoring of key evidence-based treatment after STEMI. Younger women are particularly vulnerable not to return to work, providing evidence of their worse recovery after MI than men of a similar age 313 decisions should be individualized, based on LV function, completeness of regeneration and stroke control, and job characteristics. Extended sick leave is often not helpful and light to moderate exercise should be exercised after discharge should be encouraged. Sexual activity can resume quickly if adapted to physical abilities. Advice on air travel, including repatriation for mi patients abroad, is limited. With limited data Factors related to the clinical situation, including the length of the trip, whether accompanied by it, and the degree of anxiety also play a role. For MI who is not completely complicated with LVEF >40%, the risk is low and the trip is considered safe after discharge from the hospital (from 3 onwards) in complex STEMI, including patients with lvmi failure LVEF <40% ischaemia and atrial fibrillation should be postponed until the condition is stable. STEMI and therefore blood pressure should be well regulated. In addition to lifestyle changes, including reduced salt intake, increased physical activity and weight loss, pharmacokinetic studies that target blood pressure. Systolic (SBP) < 140 mmHg should start in elderly patients, targeted frail may be more benign, while in patients with a very high risk of resistance to many antihypertensive drugs, the target of < 120 mmHg may be considered 4,315,316, despite the proven effectiveness of this treatment, does not adhere to lifestyle interventions and medications may affect the therapeutic effect. 7.1.6 Adherence to low treatment is a major barrier to achieving optimal treatment goals and involves worse outcomes. 320 Strategies to reduce poor adherence are to use a combination of fixed doses or polypill, including key medications to reduce cardiovascular risk, as well as a one-time dose per day.321,322 A single study devoted to patients after MI is the last phase 2. The mixed dose for secondary cardiovascular protection (FOCUS), 323 of which 695 patients after MI were randomized for routine care or a strategy that used polypill [polypill containing aspirin, converted angiotensin enzyme (ACE) inhibitors, and statins] in this trial after 9 months of follow-up polypill group performance showed better adherence compared to groups receiving separate medications. A large-scale trial is needed to confirm clinical benefits in secondary prevention. Although low adherence has qualifies as a widespread problem, 324 healthcare professionals and patients should be aware of this challenge and optimize communication by providing clear information, simplifying treatment systems aimed at mutual decision-making and conducting repetitive checks and recommendations. The full text about long-term antimicrobial therapy can be found in the Online Addenda Web. Long-term low aspirin doses (75-100 mg) are identified due to similar anti-ischaemic and less adverse events than higher doses, as demonstrated in the current OASIS 7.330 7.2.2 duration of double antimicrobial therapy and antimicrobial therapy DAPT including aspirin and P2Y12 inhibitors (eg. Prasugrel, ticagrelor or clopidogrel) is recommended in patients with STEMI between primary PCI (up to 12 months)186,187 Clopidogrel. Recommended for 1 month in patients treated with fibrinolysis without PCI.225,226 extended duration of DAPT to 12 months for patients receiving fibrinolysis and subsequent PCI recommended to use DAPT for 12 months Clopidogrel as a P2Y12 inhibitor of alternative as a joint supplement and after fibrinolysis. It's not acceptable. However, in patients receiving PCI after fibrinolysis after a safety period (arbitrarily considered 48 hours), there is no biological reason to consider that potential P2Y12 inhibitors increase the risk and do not exert more benefits than clopidogrel, as in the main PCI settings, while there are no specific studies on the appropriate DAPT period in high-risk patients bleeding, Several studies have shown that shortening DAPT is 6 months, compared to 12 months or longer, reducing the risk of major bleeding complications, there is no clear trade in ischaemic events.331,332Two Major studies have shown benefits to reducing non-fatal ischaemic events in patients who have been given more than 12 months of DAPT.3333 ,334 DAPT studies totaling only about 10% of STEMI patients and so far no data. Respect the benefits of prolonging clopidogrel or prasugrel life from 12 to 30 months in this subset of patients, so there is no official recommendation for the use of clopidogrel or prasugrel over 1 year334More. More recently, prevention of cardiovascular events in patients with heart attack before using Ticagrelor compared to placebo on the background of aspirin –Thrombolysis. In myocardial infarction 54 (PEGASUS-TIMI 54) the trial examined two doses of ticagrelor (60 mg and 90 mg b.i.d.) compared to. A placebo in patients with a history of MI 1-3 years earlier and has high risk properties; studies have shown that a reduction in MACE with 90 mg ticagrelor.333 does not reduce the total mortality rate, but there are borderline signs towards reducing cardiovascular mortality (when both doses are consolidated) consistent with a non-fatal reduction.333 ticagrelor (plus aspirin) also reduces the risk of stroke compared to aspirin. Ticagrelor regimen is associated with a significantly increased bleeding risk. Patients with STEMI previously comprised more than 50% of the pegasus-TIMI population of 54 overall, and subgroup analysis showed consistent results in patients with previous STEMI vs. NSTEMI.333 based on existing data, DAPT expansion over 1 year (up to 3 years) in the form of positive aspirin. ticagrelor 60 mg b.i.d. may be considered in patients who are DAPT resistant without bleeding complications, and there are one additional risk factors for ischaemic events, it is recommended to use gastric bypass prevention with PPI for patients with a history of gastrointestinal bleeding and is suitable for patients with several risk factors for bleeding. For example, advanced age, simultaneous use of anticoagulant drugs, steroids or non-steroidal anti-inflammatory drugs, including high-dose aspirin and helicobacter pylori.335–337 infections. In acute coronary artery disease – Thrombolysis in myocardial infarction 51 (ATLAS ACS 2–TIMI 51) Trials , 50% STEMI), low doses of rivaroxaban (2.5 mg twice daily), on top of aspirin plus clopidogrel, reduced the main endpoint of cardiovascular death, MI, or stroke, but also all the cause of death, rather than the follow-up average of 13 months.338 Stent thrombosis decreased by one-third. However, this is associated with a three-fold increase in non-CABG-related non-CABG blood and intracranial haemorrhage.338 based on the ATLAS ACS 2–TIMI 51 trial, In patients who chose low bleeding risk, 2.5%. Maintenance antitrust strategy after ST-elevation myocardial infarction 7.3 beta block 7.3.1 Beta block early intravenous block in patients through fibrinolysis, early block beta-block treatment reduces the incidence of acute atrial fibrillation, although there is no clear evidence of long-term clinical benefits344–346In patients. Primary PCI, the effect of Metoprolol on Cardioprotection during acute myocardial infarction trials (METOCARD-CNIC) trial (n = 270) showed very fast administration of i.v. metoprolol (15 mg) at the time of diagnosis in patients with front cardiac arrest, no signs of heart failure, And SBP >120 mmHg involves reducing infarct size measured by CMR at 5-7 days (25.6 g vs. 32.0 g; P = 0.012) and higher LVEF at P = 0.018) compared to controlled treatment 347,348 all patients without contraindications receiving oral metoprolol within 24 hours. The incidence of MACE (composite of death, admission as a result of heart failure, reinfarction, or retinopathy disorder) at 2 years was 10.8% compared to 18.3% in i.v. metoprolol and control arm (P=0.065). And the extent of MVO.349 early intravenous beta blockers in patients with ST-Segment elevated myocardial infarction before primary coronary artery intervention (EARLY-BAMI) randomized 683 patients with STEMI within 12 hours i.v. metoprolol (5 mg, who recruited and added an additional 5 mg immediately before PCI) or placebo.350 Administering metoprolol early does not show any benefit in reducing CMR size according to infarct, the main experimental destination, available only in 342 patients (55%) or levels of heart biomarker release. Early i.v. metoprolol was associated with a border reduction of cancerous arrhythmia (3.6% vs. 6.9%; P = 0.050) patients treated with i.v. metoprolol showed no increased risk of haemodynamic uncertainty, atrioventricular block (AV) or MACE at 30 days. After hoc analysis from the main PCI trials, other hypothesis tests have suggested that early i.v. beta-block administration may be associated with clinical benefits, but selective bias cannot be excluded even after correction for imbalance in a fundamental way.351,352 Based on the evidence currently available, the administration of i.v. beta block while presenting followed by oral beta blockers should be considered in patients with haemodyically stable through primary PCI. The last registered 7057 consecutive patients with AMI showed benefits in terms of reducing the median tracking mortality rate of 2.1 years associated with beta-block prescriptions released, although no correlation between the dose and results could be identified using registry data, the effects of beta-block treatment recently released in cardiovascular events in 19 843 patients with ACS or receiving PCI were studied.355. Of the 3.7 years of tracking, beta-block use was associated with a significant reduction in mortality rates (adjusted HR 0.90, 95% CI 0.84–0.96). The relationship between beta-block and results differed significantly between patients with and without the latest MI (HR for death 0.85 vs. 1.02; pint = 0.007) objections to these results in studies promising long-term observations, including patients. 6758 cases with previous MI beta-block use were not associated with a reduced risk of cardiovascular events or mortality.356 According to current evidence, Routine administration of beta blockers in all post-STEMI patients should be considered as described in detail in the heart failure guidelines; 6 beta blockers are recommended in patients with reduced LV systolic function (LVEF ≤40%). In the absence of contraindications such as acute heart failure, high blood instability or higher levels of AV blocking. 357-361, since no studies have corrected the beta-block period to date, no recommendations in this section can be made. About the duration of the onset of oral block beta therapy in patients does not get early. i.v. Beta blocked retrospective registry analysis in 5259 patients suggesting that early (e.g. <24 hours) beta-block administration inherited survival benefits compared to one delayed. Therefore, in patients with haemodynamically stable beta-blockincation should be considered within the first 24 hours 7.4 fat loss treatment the benefits of statins in secondary prevention have been shown informally, and trials have shown the benefits of early statin treatment and concentrated in ACS.364,365 meta analysis of more comparative trials- compared with less. Reducing LDL-C concentrations with statins indicates that more concentrated statin treatment produces a greater risk of cardiovascular death, MI said. Non-fatal, ischaemic stroke, and coronary artery revascularization.366 for every 1.0 mmol/L reduction in LDL-C reduces these additional risks similar to a disproportionate reduction in the trial of statins compared to control. It is recommended in all patients with AMI, regardless of the cholesterol concentration in the presentation. Fat loss treatment should begin as soon as possible, since this increases the patient's adherence after discharge and is treated with high intensity, since it involves early and lasting clinical benefits4 the intensity of statin therapy should be increased in those who are treated. Low or moderate-intensity statin in the presentation, unless they have a history of intolerance to therapy. High-intensity statin or other characteristics that may affect safety 366-3 68 The therapeutic goal is ldl-c concentration < 1.8 mmol/L (<70 mg/dL) or at least 50% reduction in LDL-C if the baseline LDL-C level is 1.8–3.5 mmol / L.4,367,369. The use of low-intensity statin therapy should be considered in patients with increased risk. Side effects from statins (such as elderly, liver or kidney deficiency, previous side effects, or the potential for simultaneous interaction with the necessary treatment). Following MI, fat profile is passed on phasic changes, with small reductions in total cholesterol, LDL-C, and HDL-C, and an increase in triglycerides within 24 h.370,371 fat profile should be given as soon as possible after stemi intake and can not starve, overall and HDL-C shows slight changes and LDL-C patterns within 10% .372. Lip-loss therapy can be adjusted accordingly. The results of the trial with high doses of atorvastatin and simvastatin366,373–375 favor high-intensity statins. In patients known to tolerate any dose of statins, treatment with ezetimibe should be considered. To reduce better results: experiments Vytorin Efficacy International Trial (Update-IT), 18 144 Patients with the latest ACS (29% with STEMI) were randomly given ezetimibe 10 mg / simvastatin 40 mg or simvastat 40 mg alone (simvastatin was titrated up to 80 mg if LDL-C was >79 mg / dL or 2.04 mmol / L) 376 over a period of 7 years, the main end of cardiovascular death, MI blood vessels. Hospital admission for unstable angina Coronary artery regeneration or stroke decreased significantly in the healing arm combined with the statin arm only (32.7% vs. 34.7%; HR 0.94, 95% CI 0.89–0.99). The latest information from phase I–III trials It was shown that proprotein convertase subtilisin /kexin type 9 (PCSK9) inhibitors reduce LDL-C to 60%, whether monotherapy or in addition to statins, and also have significant benefits in triglycerides and HDL-C.377-380 Meta-analysis of existing trials with more than 10 000 patients indicating significant mortality benefits (HR 0.45, However, based on a relatively small end of 378,381 in the research, additional cardiovascular results with PCSK9 inhibitors in high-risk trials (FOURIER) consisted of 27 564 cardiovascular disease patients, Additional risk factors, and LDL ≥70 mg/dL (1.8 mmol/L), treated with moderate or high statin compared to placebo, evolocumab injections reduce the main composite endpoint of cardiovascular death, MI, in the form of a placebo. Stroke, hospitalization for unstable angina, or coronary artery revascularization by 15% at relative rate and 1.5% at an absolute rate. There was no difference in total mortality or cardiovascular mortality and no significant difference in adverse events382 given moderate results over 2 years and a decrease in mortality rate, its use should be limited to the selection of high-risk patients. Based on the relatively limited evidence. This should be considered to add non-statin treatment to high-risk patients who are not treated. After STEMI, despite having a maximum acceptable statin content of 7.5 nitrates, regular nitrate use in STEMI is useless in randomized controlled trials with placebo and therefore is not recommended.383 Intravenous nitrates may be useful during acute periods in patients with hypertension or heart failure, if there is no low blood pressure RV infarction or use of type 5 phosphorus inhibitors during the previous 48 hours. Therefore, the use of calcium intake regularly in the acute phase does not indicate 384,385 in the chronic stage. Randomized controlled trials allocated 1775 patients with MI not in beta blockers to verapamil or placebo, found that the risk of death and reinfarction decreased with verapamil.386, so in patients with beta-blocking contraindications, especially in the presence of respiratory congestii, calcium antagonists were the right choice for patients without heart failure or failure. On the contrary, it has failed to show benefits after STEMI,387 and they should be prescribed only for more definitive indicators such as high blood pressure or angina residue.388 7.7 Angiotensin Conversion of enzyme inhibitors and angiotensin II ACE inhibitors is recommended in patients with LVEF deficiency (≤40%) or those who suffer from early heart failure 383,389–392. A systematic overview of early ACE inhibitor trials of STEMI states that this treatment is safe, well tolerated and involves a slight decrease in mortality of 30 days, with the majority of the benefits observed in the first week, 383,393 ACE inhibitors recommended in patients with Systolic LV disorders or heart failure, hypertension or diabetes, and should be considered in all STEMI patients. Inferior captopril in VALsartan in the iNfarcTion acute myocardial infarction (VALIANT) 396 7.8 Mineralocorticoid /aldosterone receptors are mineralocortic antagonists, antagonist receptors (MRA) recommended in patients with LVEF disorder (LVEF ≤40%) and heart failure after STEMI.397-400 Eplerenone, selective alsterdontic receptors, It has been shown to reduce illness and mortality in these patients. Eplerenone Post-AMI cardiac performance and SUrvival (EPHESUS) cardiac performance and SUrvival (EPHESUS) randomized 6642 patients after MI 6642 who had LVA (LVEF ≤40) disorder and symptoms of heart failure/diabetes as epherenone or placebo within 3-14 days after their infarction397. An average follow-up of 16 months, with a 15% reduction in total mortality and a 13% reduction in the composite of deaths and hospitalizations for cardiovascular events. Two recent studies have identified the benefits of early treatment with MRA in the setting of STEMI without heart failure. the primary combined endpoint [CV mortality, re-hospitalization, or extended initial hospital stay due to diagnosis of heart failure, sustained ventricular tachycardia or fibrillation, Ejection fraction ≤40%, or elevated B-type natriuretic peptide (BNP)/N-terminal pro B-type natriuretic peptide (NT-proBNP)] occurred in 29.4% of the active group vs. 18.2% in the placebo group (P < 0.0001), with the primarily driven by the bnp. Sterone Lethal Effects Blockade in Acute myocardial infarction Treated with or without Reperfusion to improve and survival at six months follow-up (ALBATROSS) trial randomized 1603 patients with acute STEMI or high-risk NSTEMI a single i.v. bolus of potassium canrenoate (200 mg) followed by spironolactone (25 mg) Overall, the study did not find a resulting impact on composite results (death, cardiac arrest, life-saving heart failure, major respiratory arrhythmia, indication for implantable pacemaker or new or worse heart failure) at 6 months. (HR 0.20, 95% CI 0.06–0.70)402 Future studies will clarify the role of MRA treatment in this setting, when using MRA, caution should be used with reduced renal function [creatinine concentration >221 mmol / L (2.5 mg / dL) in men and >177 mmol / L (2.0 mg / dL) in women] and regular examination of potassium serum is warranted. Regular therapy in acute, subacute and long-term stages: beta block, angiotensin- Convert enzyme inhibitors, angiotensin ii block receptors, mineralocorticoid receptors, antagonists, and fat loss treatments after ST-elevated myocardial infarction numbers 5 and 6 present the most defined interventions (Class I and IIa) in patients who pass the PCI or PC open in a new tab, remember to scroll down. Interventions in STEMI patients who received the main PCI strategy ACE = angiotensin conversion enzyme; LVEF = fractal ejection of left ventricle MRA = rival mineralcorticoid receptors; Coronary artery intervention; Elevating ST-segment myocardial infarction; Unparin uncomplicated Most scheduled interventions (Class I, Green and IIa, Yellow) are offered along with the expected delivery period. A solid line represents a recurring (daily) intervention. Chewed mg or 75-250 mg intravenously (in patients not yet in aspirin maintenance doses)2Prasugrel Loading Volume: Ticagrelor loading dose: 180 mg, if there is the opposite indication for prasugrel / ticagrelor or these are not available, the loading dose of clopidogrel (600 mg) is indicated3 if the interventional heart disease does not specialize in reaching the radius. 4Enoxaparin or bivalirudin is an alternative to non-diffuse heparin (Class IIa A)5 maintenance medicine Aspirin: 75–100 Oral mg.6Prasugrel Maintenance Dose: 10 Milligrams once a day. Ticagrelor maintenance dose: 90 mg twice a day. If there is the opposite indication for prasugrel / ticagrelor or these are not available, clopidogrel maintenance (75 mg per day) will indicate.a90 minutes represents the maximum target time of mediation PCI reperfusion for patients presented in the PCI center, this target time is 60 minutes bProlongation of ticagrelor (60 mg twice daily). In addition to aspirin may be considered for up to 36 months in patients with high ischaemic risk who tolerate DAPT without bleeding complications. Open in a new tab, scroll down the slide, do not forget. INTERVENTION IN STEMI patients under a successful fibrinolysis strategy ACE = angiotensin conversion enzyme; LVEF = fractal ejection of left ventricle MRA = rival mineralcorticoid receptors; Coronary artery intervention; UFH = Uncomplicated Heparin Most scheduled interventions (Class I, Green, and IIa, Light Yellow) are presented with the expected delivery period. Solid lines indicate recurring (daily) double arrow dashes represent a window of time where interventions can be deliver ≥ed. 9) Heparin is not distributed as an alternative to enoxaparin.2 Asparin intake dose: 150–300 mg chewed or 75-250 mg intravenously.3Clopireldog Loading Volume: Oral (75 mg in ≥ 75 years)4 Maintenance Asparin dosage: 75-100mg oral 5clopidogrel maintenance treatment: 75mg per day of 648 hours after fibrinosis, replacement to prasugrel / ticagrelor may be considered in patients with PCI treatment. Open in a new tab, download slide flow, diagnostic test flow in MINOCA CMR = magnetic resonance heart; LV= Left channel; OCT = Myocardial infarction with coronary artery; STEMI optical consistency = elevated part ST myocardia death; If an intracoronary imaging is required, it is appropriate to perform this imaging in time at the acute cardiac catheterization, after an angiography diagnosis, the patient should be aware of the additional information that the test can provide and a slight increase of risk associated with intracoronary.1 shooting . Provocative maneuvers must always be performed by experienced practitioners and do not need to be in the acute phase of STEMI.2 • Clinically suspected myocarditis by ESC Task Force = No angiographic stenosis ≥50% Plus, non-ischemic forms on CMR myocarditis, of course, by esc task force criteria = no angiographic stenosis ≥50% Plus confirmation of endomyocardial biopsy (hematology, immunology, polymerization chain reaction technique to find the genome of mostly viral infectious agents) 8. Complications after elevated ST-segment myocardial infarction extended information about the following complications STEMI is presented in Web Addenda 8.1 Myocardial infarction 8.1. The mechanism of heart failure should be assessed before the ECG echocardiography examination and (when not controlled quickly) with invasive haemodynamic examination and corrected as soon as possible. Patients with pulmonary congestion and SaO2<90% or partial oxygen pressure (PaO2) <60 mmHg (8.0 kPa) require oxygen therapy and SaO2 monitoring to correct hypoglycemia with a target of 95% and may need to evaluate the gas in the blood for periods of time. Loop diuretics (such as furosemide 20-40 mg i.v. with repeated doses over time according to clinical evolution and diuresis) and, if blood pressure helps it, such as v. nitrate, avoid low blood pressure or excessive blood pressure fall. Beta blockers are recommended, ACE/ARBs inhibitors, and MRA is recommended in the absence of hypovolaemia, hypovolaemia, or renal dysfunction. Caustic treatment is necessary, coronary artery regeneration should be carried out early when the cad is important. Currently, stroke disturbances, valvular disorders and hypertension should be corrected as soon as possible. Hypertension should be treated immediately with oral ACE inhibitors / ARBs and i.v. nitrate, in very severe cases, infusion of sodium nitroprazside may be necessary. Permanent cardiac death should be treated with early coronary artery regeneration, atrial dysrhythmias and atherosclerosis, and valvular disorders or mechanical complications should be treated as appropriate (see specific sections in this document). Patients with severe symptoms with pulmonary embolism may want to, for example, v. morphine to reduce dyspnoea and anxiety, but it is not recommended to use it regularly due to concerns about its safety, as it can cause nausea and hypopnea.408,409, breathing positive pressure, non-invasive (continuous positive respiratory pressure). positive respiratory pressure biphasic) or high-flowing cannula is effective in treating pulmonary edema and should be considered in patients with respiratory distress (breathing rate >25 breathing / min, SaO2 90 mmHg) But the severe reduction in heart output resulted in organs <90%) and=started= soon.410,411= endotracheal= intubation= and = ventilatory= support= may= be= required= patient= patient= unable = to= achieve= adequate= oxygenation, or= in= in= = hypercapnia= due= to= respiratory= exhaustion.= ultrafiltration= to= fluid= fluid= may= be= considered= patients= who= to= diuretics= especially= patients= with= hyponatraemia.in= patients with heart= failure= and= blood= pressure= (sbp= critical) not responding to treatment standards. However, clinical evidence of levosimendan in carbicen shock is limited. More details about managing acute heart failure can be found in esc 2016 guidelines for the diagnosis and treatment of acute and chronic heart failure.6Recommendations for managing left blood vessel disorders and acute heart failure in ST-elevation myocardial infarction 8.2.2.1, low blood pressure management in patients with low blood pressure and regular perfusion without evidence of congestion or overdose (e.g. vena cava that is inferior has collapsed), Gentle volume load should be tried after judging out complications such as mechanical or severe mitral remorse, with the central pressure monitoring of bradycardia or tachyarrhythmias in patients with RV infarction, excess dose should be avoided because it may be worse. If low blood pressure persists, inotropic therapy, especially with dobutamine, may be considered.420 8.2.2.2.2 It complicates 6–10% of all STEMI cases and remains a leading cause of death, with in-hospital mortality rates. ≥50%.421 Shock is also considered to be present mmhg)= despite= adequate= filling= status= with= signs= of= hypoperfusion.= it= complicates= 6–10%= of= all= stemi= cases= and= remains= a= leading= cause= of= death,= with= in-hospital= rates= ≥50%.421= shock= is= also= considered= to= be= present=></90 mmHg) despite adequate filling status with signs of hypoperfusion. It complicates 6–10% of all STEMI cases and remains a leading cause of death, with in-hospital mortality rates ≥50%.421 Shock is also considered to be present > </90%)> </90%)> It is necessary to use inotropes and/or mechanical support to treat SBP >90 mmHg in STEMI patients presented with heart shock which is expected that PCI mediation reperfusion will occur >120 minutes, immediate fibrinolysis and transfer to PCI center should be considered. In these cases, when it comes to pci centers, an emerging angiography is identified regardless of ST resolution and time from the administration fibrinolysis. Characteristic cardiogen shock and management do not require invasive haemodynamic monitoring, but abdominal and valve functions should be assessed urgently by echocardiography transthoracic and related mechanical complications, ruled out 422-426, the first step in patients with heart shock symptoms is to identify mechanisms and to correct any reversible causes such as hypovolaemia, low blood pressure caused by drugs, or atrial atrial fibrillation; Treatment includes immediate reperfusion with primary PCI whenever possible 248,427 and complete rehabilitation if there are multiple disease spots. In addition, patients at highest risk of developing shocks may benefit from early transfer to the study rich center before the onset of haemodynamic uncertainty antithrombotic therapy is no different from that in any STEMI patients, the specific details of the management of low-output heart shock associated with rv infarction are discussed in the Webenda Add.invasive artery examination suggesting 6 artery pedigree may be considered, to perform careful adjustment of the filling pressure and evaluation of the heart output or in case of unexplasment shock. Hypovolaemia should be eliminated first and corrected with liquid loading. Pharmacological therapy aims to improve organ perfusion by increasing heart output and blood pressure. Diuretic therapy is recommended when achieving adequate perfusion. Intravenous agents or vasopressors often require SBP treatment >90 mmHg, and to increase heart yield and improve major organ perfusion. It may be considered as an alternative, especially for patients to treat chronic beta-blockers, because the inotropic effect is free of beta-adrengic stimulants. It is not recommended to use phosphorus III inhibitors in STEMI patients, the IABP argument does not improve results in patients with STEMI and heart shock without mechanical complications 177 and does not. Significant infarct size limits in those with large page MIs.175, so iabp retaliation on a regular basis cannot. However, it may be considered for haemodynamic support in selected patients (such as severe mitral insufficiency or deficiency of the vascular exacerbation). A small survey experiment that studied circulatory support devices. Impella CP percutaneous did not find any benefits compared to IABP in AMI complexized by cardiogenic shock.429Mechanical LV assist device (LVADs) including short-term mechanical circulatory support devices (eg. Axial flow pump inside the heart and oxygen membrane It is used in patients who do not respond to standard treatments, including liquid inotropes and IABP, but the evidence about their benefits is limited to 430, so short-term mechanical circulatory support can be regarded as a rescue therapy to stabilize the patient and treat organ perfusion (oxygen) as a bridge to the recovery of myocardibraic function, heart transplantation, or even LV assisted treatment equipment. 31,432Recommend heart shock management in ST-elevation myocardial infarction 8.3 Management of arrhythmia and acute conductivity interference in arrhythmias and conductivity interference is common in the early hours of STEMI and also a major prognostic factor438, despite increased awareness and improvement of the basics and fundamentals and improvements. Advanced life support, the incidence of sudden death of the heart is mainly caused by rapid abdominal tachycardia. Still high of 438,439 pre-reperfusion therapy reduces the risk of atrial fibrillation and cardiovascular death of 440,441 the presence of life-threatening atrial fibrillation requires an urgent need for rapid and complete rehabilitation in STEMI.. 438,442 evidence for the benefit of anticoagulant drugs in STEMI patients is limited and the negative effects of anticoagulant drugs in premature death have been shown. Electrolyte imbalance and early treatment with beta blockers Are recommended to use ACE/ARBs and statins.438,443 8.3.1 Supraventricular arrhythmias arrhythmiamia supraventricular most often is AF, with as many as 21% of AFFECTed STEMI patients. Patients with AF have more comorbidities and are at higher risk for complications445 in many cases, renal arrhythmia is well tolerated and does not require specific treatment, in addition to preventing blood clotting5 A quick treatment is needed in acute blood uncertainty. There is scarce data indicating a preference for controlling the rate of stroke control in this situation, considering the 446 electric cardio, but early iterations of AF often occur after. Heart Diversion Acute stroke control with antiretroviral drugs is restricted to amiodarone.5,444 adequate rate control can be achieved by the administration of beta block.438,446 In patients with extensive myocardial damage or severe LV disorder control rates are achieved more safely with i.v. digoxin with or without co-administration of i.v. when co-administered i.v. digoxin and amiodarone, close monitoring for digoxin toxicity is needed because digoxin serum concentration may increase. Several studies, however, do not all suggest that the newly initiated AF may be reduced by beta blockers. ACE/ARBs inhibitors, and also early statin therapy.444 Patients with AF and risk factors for thromboembolism should be adequately treated with chronic oral anticoagulants.5 STEMI Patients with AF documents had shorter prognoses and worse long-term prognoses compared to patients with 445,447 higher sinus stroke rates, The higher risk for heart failure, and also increased the risk for sudden heart death.444,445,448 of recorded, yet temporary, self-ending AF during STEMI is associated with significantly higher stroke rates over the long-term follow-up.445,448 Management of atrial fibrillation 8.3.2 arrhythmias incidence of VT and VF strokes has decreased over the past several decades. Most likely, perhaps because of the absorption of reperfusion strategies and the use of beta block.3, but 6-8% of patients still develop a VT or vf that is haemodynamically important at this stage. Urgentfusion is most important because ischaemia often triggers these arrhythmias.72 beta-block recommendations if there are no existing contraindications. Administration of amiodarone recommends .439,456 In cases of contraindications to amiodarone, such as v. lidocaine may be considered, although there have been no comparative studies comparing the superiority of one drug in patients STEMI is available. The prognostic role of VT/VF early within the first 48 hours of STEMI remains controversial. Existing data suggest that patients with early VT/VF have an increased mortality rate of 30 days, but there is no increased risk of long-term atrial fibrillation, an increase of 442,457,458VT or VF may occur at a time when restoring blood flow in the coronary arteries (atrial fibrillation). There is no need for specific anti-aycoy therapy due to a harmless long-term course. Premature strokes of blood vessels are very common in the early days of acute periods, and complex arrhythmias (multiple complexes, short-running or R-on-T phenomena) are common. Their value as a predictor of VF is questionable and does not require specific VT or VF treatments sustained outside the initial stage (usually 48 hours after the onset of STEMI symptoms), not caused by a poor recurrent ischaemia. 3 Prevention of sudden cardiac death with ICD within 40 days after MI In the absence of VT/VF generally does not identify 3 patients should be re-evaluated for ICD implantation 6-12 weeks after rehabilitation, although those with pre-existing LVEF deficiencies may be considered for ICD for preliminary prevention even during post-contraceptive treatment. Overdrive stimulation may help to control this situation, however, the recurrence of VT/VF, when frequent stimulation stops and the ovulation of the catheter of such triggers, appears to be the only treatment option. Successful radio wave precipitation has been shown to cancel VT/VF.459-461 repeatedly managing atrial fibrillation and conductivity interference in its long-term acute management. Atrial fibrillation and risk assessment for sudden death 8.3.3 Sinus bradycardia and sinus bradycardia atrioventricular blocks are common in the early hours of STEMI, especially in inferior MI. In some cases, opioids are responsible. If accompanied by severely lower blood pressure, bradycardia sinus should be treated with type II i.v. atropine (Mobitz I or Wenckebach), AV blocks are often associated with inferior MI walls and rarely cause adverse aerodynamic effects. If so, atropine should be used first; The second-level AV type II block (Mobitz II) and a complete AV block may be an indication for walking. Sequential footwork of AV should be considered in patients with complete AV blocks, RV infarction and haemodynamic compromise should consider regeneration in patients with AV blocks who have not been treated for reperfusion (such as delayed arrival). AV blocks associated with inferior wall infarction are often supra-Hisian and are often spontaneously modified or after reperfusion, AV blocks associated with mi front walls are often infra-Hisian and have a high mortality rate due to extensive myocardial necrosis. The development of new bundle branch blocks, or hemiblock, often indicates an extensive MI page, transvenous pacing electrodes should be inserted in place with advanced AV blocks with low escape strokes as described above, and consider whether bifascicular or trifascicular blocks develop. Indications for walking are outlined in detail in the ESC guidelines for heart and heart resynchronization.469 8.4 Mechanical complications may occur in the early days following STEMI, although incidence has decreased significantly in the era of primary PCI. Complications are fatal and require rapid detection and management. Sudden hypertension, recurrence of chest pain, murmurs The introduction of mitral regurgitation or abdominal septal defects, pulmonary congestion, or blood pressure of jugular veins should raise suspicion. An echocardiographic assessment is required immediately when suspected mechanical complications are suspected. The full section that explains the mechanical complications can be found in Web Addenda 8.4.1 Wall Cracking Free View Web Addenda 8.4.2 8.4.3 Papillary Muscle Rupture Look at Web Addenda 8.5 Pericarditis Three major pericardial complications may occur: pericarditis associated with early infarct, These are extended in Web Addenda 8.5.1 early and late (Dresser syndrome). Associated meningitis See Addenda 8.5.2 9. Myocardial infarction with coronary artery, a large proportion of MIs from 1-14% occur in the absence of obstruction (>50% narrowing). CAD.10,11 Demonstration of non-obstruction (<50%) CAD in patients presented with the recommended symptoms of ischaemia and ST-segment elevation or equivalent does not impede atherosclerosis, as blood clots are a very dynamic phenomenon and basic atherosclerotic plaque can be a barrier. MINOCA's diagnostic criteria are listed in Table 10 MINOCA as a functional diagnosis and should be taken by a medical doctor to determine the underlying cause. Failure to identify the underlying cause may result in inadequate and inappropriate treatment in these patients. Table 10 Myocardial infarction (adapted from Agewall et al12) The pathology of different hematological departments leading to MINOCA is outside the scope of the current document and is widely described and defined in the position document from ESC12, and in the examination document only MINOCA patients 10,11 can follow the criteria for both MI Type 1 and Type 2 according to the universal definition of MI.MI. Secondary to epic coronary artery Rupture of vascular plaque wounds, (2) Imbalance between oxygen supply and demand (e.g. coronary artery spasms and coronary artery obstruction) (mi type 2); (3) endothelial coronary artery disorders (e.g. microvascular spasms) (MI) And (4) secondary from myocardial dysfunction without involvement with coronary artery disease (e.g. myocarditis470 or Takotsubo syndrome), the last two units may mimic MI, but are better classified as myocardial injury conditions. Although minoca's results are based on underlying causes, it is recommended to take a serious overall diagnostic test with a mortality rate of about 3.5%.10 to determine the cause of MINOCA. In general, after judging out cad obstruction in patients presented with STEMI, LV angiogram or echocardiography should be considered in acute settings to assess wall movement or efficacy. pericardial. In addition, if suspected, additional diagnostic tests, CMR is considered a very useful imaging technique, due to its unique non-invasive tissue characteristics, allowing it to identify disorders of wall movements, the presence of edema and scars/myocardial fibrosis and forms. To identify the aetiological causes of MINOCA.471-473 10, the quality of care assessment provides a wide practical gap between best and real care for STEMI patients in 474,475 hospitals worldwide to reduce this gap and improve the quality of care. It is recommended that each STEMI network and components create systematic quality indicators to measure and compare these indicators, perform routine checks and strategies to ensure that all patients with STEMI receive the best care according to acceptable standards and have the best results (see Web Addenda), quality indicators are intended to measure and compare the quality of health services and serve as the foundation for quality improvement programs that offer quality assessment of patient care is presented in Table 11. The gap in evidence and space for future research, despite huge advances in STEMI management over the past several decades, a significant area of uncertainty still exists that should be explored in the future. Here we identify some areas, but not all areas that should be fixed within the next few years. Public awareness and early stage emergency care of STEMI are the most vulnerable moments when most sudden heart deaths occur. Public campaigns aimed at raising early notifications of patients with ischaemic symptoms should clearly state that the safest way to alert is to call EMS, while selective centres and geographic areas have made great progress in ensuring high-quality STEMI patient care with advance notification of routine intervention teams, still needing to improve hospital management (first) in homogeneous fashion around the world, including rural areas. Education programs and exchange of experiences across the country should help in this regard. The selection of 120 minutes from STEMI diagnosis to PCI-mediated reperfusion is In choosing PCI or fibrinolysis is based on relatively old registrations and experiments with different treatment strategies from those presented in this document. Identifying the best cutting time in strategic selection is of paramount importance. Reducing the injury of ischaemia/reperfusion infarct final size is one of the best predictors of long-term adverse events in STEMI survivors The introduction of limited infarct treatments in clinical practice may have large clinical and socioeconomic effects. One possible reason for this poor translation is the difficulty of securing funding to conduct large-scale clinical trials appropriately in this context. The refinement of the (acute and long-term) antithrombotic antithrombotic antithrombotic therapy regime is the cornerstone of the pharmacological approach in STEMI despite recent major advances, important questions remain unsolent. What is the best acute and maintenance regimen in patients with indications for oral anticoagulants? What is the best time to load the dosage of oral P2Y12 inhibitors and what is the best strategy for antimicrobial therapy? What is the role of potent P2Y12 inhibitors in patients who undergo fibrinolysis? What is the true role of aspirin in the new era of anti-blood anticoagulants, with the potential and low-dose anticoagulant? What is the best duration of maintenance therapy with P2Y12 inhibitors? Although research on these classes of harsh drugs several decades ago, more recently, there has been a lack of properly driven clinical trials. The best time for the start (and the path of administration) of beta-block remains well established. The role of maintenance of beta-block treatment is well established for patients with low heart failure and/or LVEF, but clinical values for the rest of STEMI have not been tested expected in patient-specific clinical trials. Reperfused similar restrictions apply to the use of ACE maintenance inhibitors. Risk stratification behind STEMI treatment strategies is best to reduce the risk of sudden death in patients who develop VT or VF during or early stemi after STEMI is not entirely clear despite the clinical benefits of ICDs in patients with low LVEF and reduced working weeks after STEMI has been well established, with improved demand for sudden death algorithm stratification risk. The best management of non-IRA lesions should be addressed. Unresolved issues are the best criteria for introducing PCI (angiography, FFR, or plaque vulnerability assessment) and the best time for complete restoration if specified (during pci index or staging. (Set during hospitalization versus after discharge). The device aids shock and left blood vessels severe heart failure and shock as one of the most important negative prognostic predictors in patients with STEMI, in addition to the urgent rehabilitation of the IRA and standard medical treatment for reduction before and after loading, there is limited evidence. For systematic use of inotropic and vasopressor substances, including mechanical support. Similarly, the benefits of a complete restoration on a regular basis during the PCI index process have not been officially demonstrated. The use of IABP has not met previous expectations of benefits, while LV and ECMO aid devices have become more popular, but have not been adequately evaluated in clinical trials. Assessment of pharmacological strategies and systematic interventions and LV assistive devices for shocked patients is urgently needed. Myocardial repair/rescue, efficacy and safety of novel treatments can replace myocardial infarction or prevent bad changes (such as cell therapy or gene therapy) as unfulfilled promises. There is a strong need for basic research studies to understand the biological processes associated

with heart development and repair, so that there is a strong reason to translate the study into clinically relevant feed formats and eventually into humans. Their impact on step-by-step and clinical outcomes must be evaluated. Necessary for real-life clinical trials in practice, a major limitation of highly selective clinical trials is their enforcement in the real world. Strict integration criteria, optimized management and closely monitored results in biases that hinder universal use. The opportunity is to conduct practical clinical trials, including randomized clinical trials based on the registry.477. The key message of STEMI epidemiology: Although mortality rates associated with ischaemic heart disease have declined in Europe over the past few decades, this remains the single most common cause of death worldwide. The relative incidence of STEMI and NSTEMI decreased and increased, respectively. Despite the decrease in acute and long-term deaths associated with STEMI, coupled with widespread use of reperfusion, mortality remains tangible. The mortality rate of non-selective patients in hospitals with STEMI in the National European Registration varies between 4-12% on gender: women. To be treated with reperfusion and other evidence-based treatments less frequently and/or in a way that is delayed than men. It is important to emphasize that women and men benefit equally from reperfusion and other STEMI-related therapies, so both genders must be dealt with equally. DIAGNOSIS OF ECG AND STEMI: In some cases, patients may experience coronary artery/ischaemia obstruction worldwide in the absence of st-characteristic altitude (e.g. branch blocks, hyperacute hyperacute air vents, T-waves, ST-depression isolation in front leadership and/or st-degree depression with ST-elevation in AVR) in patients with such ECG changes, and clinical presentations that are compatible with ongoing cardiac arrhythus, core strategies (such as angiography and urgent PCI. Choosing a reperfusion strategy: STEMI diagnosis (meaning the time when the ECG of patients with ischaemic symptoms is interpreted as presenting the altitude of ST-segment or equivalent) is zero time on the clock, the STEMI patient reperfusion strategy should be given the primary PCI strategy, unless the expected definite time of STEMI diagnosis with PCI-mediated reperfusion is > 120 minutes, when fibrinolysis should start immediately (e.g. within 10 minutes of STEMI diagnosis), STEMI management network: coordination between EMS and hospitals with general written protocols at the center of STEMI management, EMS should transfer the patient to a high-volume PCI center 24/7 without confirmation that the main treatment strategy is PCI or fibrinolysis before EMS Hospital. Pci centers should be alerted immediately after choosing a reperfusion strategy, patient transfer to PCI centers should bypass emergency departments, cardiac arrest strategies and reperfusion: patients with ST elevation in ECG after life saving should be given the primary PCI strategy in the absence of st-segment elevation in the ECG after resuscitation, but with a high suspicion of ongoing myocardial infarction should be done urgently within 2 hours of rapid evaluation to exclude non-coronary causes. In all cases, the decision to carry out urgent coronary angiography should take into account factors associated with poor neurological outcomes. Technical aspects during the main PCI range: regular access to radius and routine DES transplantation as standard of care between the main PCI, the ambition of routine thrombus or stenting that deferred, there are prohibitions, handling non-IRA lesions: the treatment of severe stenosis (assessed by angiography or FFR) should be considered before discharge (either immediately during the PCI index or later staged). In cardigen shock, non-IRA PCI should be considered during the index phase, antimicrobial therapy: anticoagulant and DAPT are the cornerstone of the acute pharmacological method of STEMI core PCI: uncomplicated heparin (enoxaparin and bivalirudin may be optional) and the load volume of aspirin and aspirin. Fibrinolysis: enoxaparin (uncomplicated heparin may be optional) and the loading volume of aspirin and clopidogrel maintenance therapy in most patients is based on dapt one year in the form of aspirin plus prasugrel / ticagrelor early care in the patient: after reperfusion therapy, patients should be monitored at least 24 hours early ambulance and early discharge as the best option in uncomplicated patients. Therefore, the time for secondary defense operations is limited by emphasizing the importance of close collaboration between all stakeholders. Special subset of patients: patients taking oral anticoagulant drugs with kidney insufficiency and / or the elderly represent challenges in terms of optimal antimicrobial therapy. Special attention should be paid to the dosage adjustment of certain pharmacological strategies in these subsets. Diabetics and those who are not treated represent another subset of patients who need additional attention. Imaging in STEMI: Non-invasive imaging is very important for managing acute and long-term STEMI patients MINOCA: a large proportion of STEMI patients do not present major angina in urgent angiography. It is important to conduct additional diagnostic tests in these patients to identify the proximity and refinement of appropriate treatment, which may differ from conventional STEMI quality indicators: in some cases, there is a gap between the best follow-based treatment and true STEMI patient care. It is recommended to use well-defined and well-monitored quality indicators to measure and improve care. Evidence-based 'do and don't do' The message from guidelines 14. ESC for Best Practices (CPG): Stephan Windecker (President) (Switzerland), Victor Aboyens (France), Stefan Agewall (Norway), Emanuel Barbato (Italy), Italy Hector Buono (Spain), Antonio Coca (Spain), Jean-Philippe Collett (France), Ioan Mirzi Coman (Romania), Gerhard Hindricks (Germany), Bernard Ing (France), Peter Juni (Canada), Hugo A. Kattas (Germany), Juhani Kunuti (Finland), Patrizio Show on map 1.1 Lancelotti (Belgium), Christophe Lakelec (France), Teresa McDonagh (United Kingdom), Massimo Lusse France Richter (Greece), Marco Ruffy (Switzerland), Evgeny Shlyakhto (Russia), Iain A. Simpson (United Kingdom), Jose Luis Zamorano (Spain) The National Association of Esc Cardiologists is actively involved in the monitoring process. ESC guidelines for managing acute myocardial infarction in patients presented with elevated ST-segment:Algeria: Algeria Heart Association, Mohamed Chettibi; Armenia: Armenian Heart Association, Hamlet G. Hayrapetyan; Austria: Austrian Heart Association, Bernard Metzler; Azerbaijan: Azerbaijan Heart Association, Firdovsi Ibrahimovov; Belarus: Belorussian Scientific Society of Cardiology Volha Sujayeva; Belgium: Belgian Heart Association, Christophe Beauloye; Bosnia and Herzegovina: Bosnian and Herzegovina Cardiologists, Larisa Dizdarevic-Hudic; Bulgaria: Bulgarian Heart Association, Kiril Karamfiloff; Croatia: Croatian Heart Association, Bosco Scoric; Cyprus: Cyprus Heart Association, Loizos Antoniades; Czech Republic: Czech Heart Association, Petr Tousek; Denmark: Danish Heart Association, Christian Juhl Terkelsen; Egypt: Egyptian Heart Association, Sameh Mohammad Shahen; Estonia: Estonian Heart Association, Tomas Marandi; Finland: Finnish Heart Association, Matti Niemelä; Former Yugoslav Republic of Macedonia: Macedonian Heart Association, Sasko Kedev; France: French Heart Association, Martine Gilard; Georgia: Georgia Heart Association, Alexander Aladashvili; Germany: German Heart Association, Albrecht Elsaesser; Greece: Hellenic Heart Association, Ioannis Georgios Kanakakis; Hungary: Hungarian Heart Association, Béla Merkely; Iceland: Icelandic Heart Association, Thorin Gudnason; Israel: Israel Heart Association, Zaza Iakobishvili; Italy: Italian Cardiologist, Leonardo Bolognese; Kazakhstan: Heart Association of Kazakhstan; Salim Birkinbayev; Kosovo: Kosovo Heart Association, Gani Bajraktari; Kyrgyzstan: Kyrgyzstan Association of Cardiologists, Medet Beishenkulov; Latvia: Latvian Heart Association, Iljazac; Libya: Libya Heart Association, Hisham Ben Lamin; Lithuania: Lithuanian Heart Association, Olivi Jutini; Luxembourg: Luxembourg Heart Association, Bruno Pereira; Malta Heart Association, Robert G. Xuereb; Morocco: Moroccan Heart Association, Samir Ztot; Norway: Norwegian Heart Association, Vibeke Juliebø; Poland: Polish Heart Association, Jacek Legutko; Portugal: Portuguese Heart Association, Ana Teresa Timóteo; Romania: Romanian Heart Association, Gabriel Tatu Chiţoiu; San Marino: San Marino Heart Association, Luca Bertelli; Serbia: Heart Association of Serbia, Milan Nedeljkovic; Slovakia: Slovak Heart Association, Martin Studenshan; Slovenia: Slovenian Heart Association, Matjaz Bunc; Spain: Spanish Heart Association, Ana Maria García de Castro; Sweden: Swedish Heart Association, Petur Petursson; Switzerland: Swiss Heart Association, Raban Jeger; Tunisia: Society of Cardiovascular Diseases of Tunisia, Mohamed Sami, i'm going to Turkey: Turkish Heart Association, Aylin Yildirir; The Heart Association of Ukraine, Alexander Parkhomenko; United Kingdom: British Cardiovascular Association, Chris P. Gale.

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