eComment. Troponin I cut-off point is different based on the used assay

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We read with great interest the article by Dayan *et al*. [1]. With regards to a study by Thielmann *et al.* [2], they have concluded that troponin I < 0.15 ng/ml is a safe level for coronary artery bypass grafting (CABG) in non-ST segment elevation myocardial infarction (NSTEMI). It should be noted that several different assays are commercially available for cardiac troponin I, such that the 99th percentile cut-off point varies, based on the assay being used. In contrast, there is no such problem with troponin T, because only one troponin T assay exists. A reference decision limit (medical decision cut-off) for troponin I assays should be determined in each local laboratory with integral studies using the specific assay that is used in clinical practice or validating a reference interval that is based on studies in the literature [3]. In the study by Thielmann *et al.*, they have used the "Dimension Flex, Dade Behring" kit and the troponin I cut-off point for adverse outcomes after CABG in NSTEMI has been calculated to be less than 1.5 ng/ml. This level can not be generalized and clinicians need to be aware of the reference range for the assay in use at their institution when using the results of this article.

Conflict of interest: none declared.

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eComment. Troponin I, coronary artery bypass grafting and perioperative ischaemia

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We read the article by Dayan *et al.* with great interest. On our part, we would like to focus and comment on the sensitivity and sensibility of troponin I as a myocardial damage index. In an ongoing study of ours, we compared troponin I and other damage biomarkers, such as SGPT, and CPK-MB, on a large sample of >120 CABG patients and found that troponin I tended to increase in a more rapid way in cases of postoperative ischaemia, tended to reach higher values compared to the commencing value. These values tended to remain in abnormal ranges for a longer period of time (up to 72 hours) in cases of ischaemia and much more in cases of myocardial infarct.

So, we hypothesize that troponin I is a credible parameter that could help the cardiac surgeon take a decision on planning the remedy and operative strategy. Hopefully, other more reliable and sensitive markers will evolve in the future, as the related technology steadily makes progress.

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eComment. Early coronary artery bypass surgery for acute non-ST elevation myocardial infarction

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The clinical spectrum of acute myocardial infarction (MI) may alter from ST elevation MI (STEMI) to non-ST elevation MI (NSTEMI) or unstable angina. It has commonly been suggested that early coronary artery bypass surgery (CABG) after acute MI may be associated with increased morbidity and mortality. However, advances in technology, surgical methods and myocardial protection techniques provide a chance for cardiovascular surgeon to achieve treatment of all these clinical scenarios [1].

We read with great interest the paper by Dayan and colleagues [2]. The authors have attempted to seek the answers to an important question: Does early CABG improve survival in NSTEMI? They concluded that CABG may be safely performed in patients with NSTEMI at any time after the first 6 h of MI in patients with cTnI <0.15 ng/ml. We fully agree with their implications regarding this subject and would also like to add a short comment.

Patients with NSTEMI represent a heterogeneous group and are subject to a significant risk of adverse cardiac events. Early risk stratification is essential to identify patients at highest risk. CABG for complete revascularization may be frequently put into practice as a therapeutic option in patients with NSTEMI. Therefore, cardiac surgeons are faced with the difficult decision of determining the optimal surgical timing in clinically stable patients. Various studies have been designed to inform us about the risk of CABG according to the time elapsed from the event.

Practice guidelines recommend delaying CABG for a few days after index admission in STEMI patients to minimize risk. However, the optimal surgical timing after the event is not addressed in most recent guidelines for NSTEMI patients. There is no consensus as to which acute MI classification poses a greater risk after CABG. Recently, Zhang and colleagues [3] studied 2412 patients who underwent isolated CABG within 21 days after acute MI. The authors suggested that MI subtype (STEMI vs NSTEMI) did not predict in-hospital mortality or major adverse events.

The GRACE (Global Registry of Acute Coronary Events) score is an easily applicable and validated tool to aid the decision-making process in patients with NSTEMI. Senanayake and colleagues [4] compared the outcomes of patients undergoing urgent CABG after 24 h of NSTEMI with the GRACE predicted in-hospital and 6-month survival. In their study, urgent CABG was associated with in-hospital mortality and 6-month survival superior to that predicted by the GRACE risk score in all risk groups.

The impact of early or deferred CABG on clinical outcomes of NSTEMI has not been well established. Zhang and colleagues [5] conducted a systematic literature search. In their meta-analysis, early CABG was not superior to deferred CABG for the prevention of all-cause death in patients with NSTEMI. However, a significant decrease in refractory ischaemia was observed in the early CABG patients, and the procedure also showed a tendency toward decreasing major bleeding events.

In our opinion, early CABG may be performed with favourable results when the surgical timing and selected subset of patients with NSTEMI are appropriate.

Conflict of interest: none declared.

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