

Myocardial injury after non cardiac surgery: troponin assay is not enough

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Argomento: Anestesia generale

Background: Among adults undergoing non cardiac surgery Myocardial Injury after Noncardiac Surgery (MINS), defined as prognostically relevant myocardial injury due to ischemia, is common and associated with substantial mortality. Although most patients do not experience the classic symptoms of ischaemia, asymptomatic MINS is associated with 30-day mortality and accounts for increase in resource utilization and hospitalization costs. The definition of MINS is based on the amount of cardiac troponin leak in the first three postoperative days. Both absolute troponin threshold and relative increase in the postoperative days have been proposed to define the MINS. This study aimed at measuring the incidence of MINS after vascular surgery according to two definitions of MINS.

Methods: patients undergoing general anesthesia for elective vascular surgery, with low preoperative cardiac risk (Revised Cardiac Risk Index <10%) were studied. High sensitivity troponin assay was performed at baseline and daily until the third postoperative day. MINS was defined as an absolute value of high sensitivity troponin >65 ng/ml, and/or a value between 20-65 ng/ml with a relative increase > 5 ng/ml during the first three postoperative days.

Results: 67 patients were studied. MINS occurred in 12 (17.9%) patients. All episodes were asymptomatic. The mean troponin peak in MINS patients was 70.1 ng/ml (95%CI 29.6-110.6) vs. no MINS 14.2 ng/ml (95%CI 12.6-15.8, $p<0.0001$). The most frequent pattern in this population was the relative increase of postoperative troponin (66.7%), while only four patients (33.3%) had a troponin peak above the absolute threshold of 65 ng/ml.

Conclusion: MINS defined according to absolute value or relative increase of troponin is common in low risk patients undergoing elective vascular surgery. The use of relative increase of troponin might lead to overestimation of MINS occurrence. We need more agreement about the definition of MINS and its postoperative management.

References

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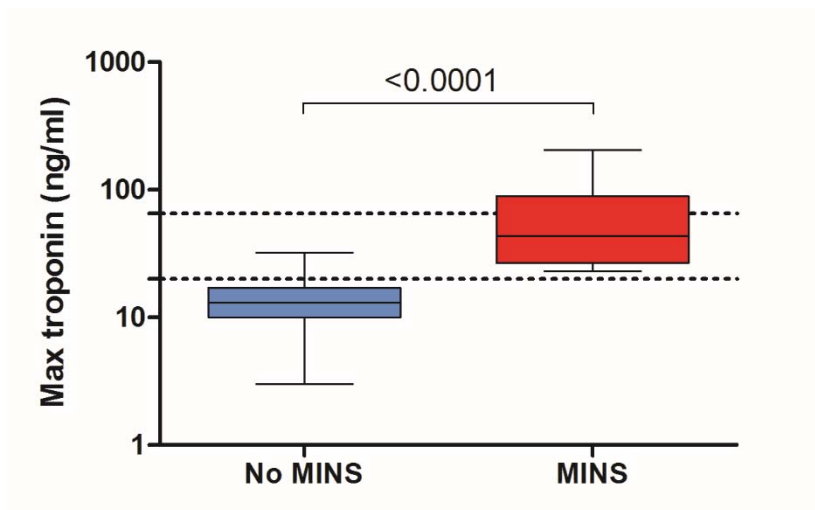


Figure 1

Mean troponin peak in the first three postoperative days in patients with and without MINS.

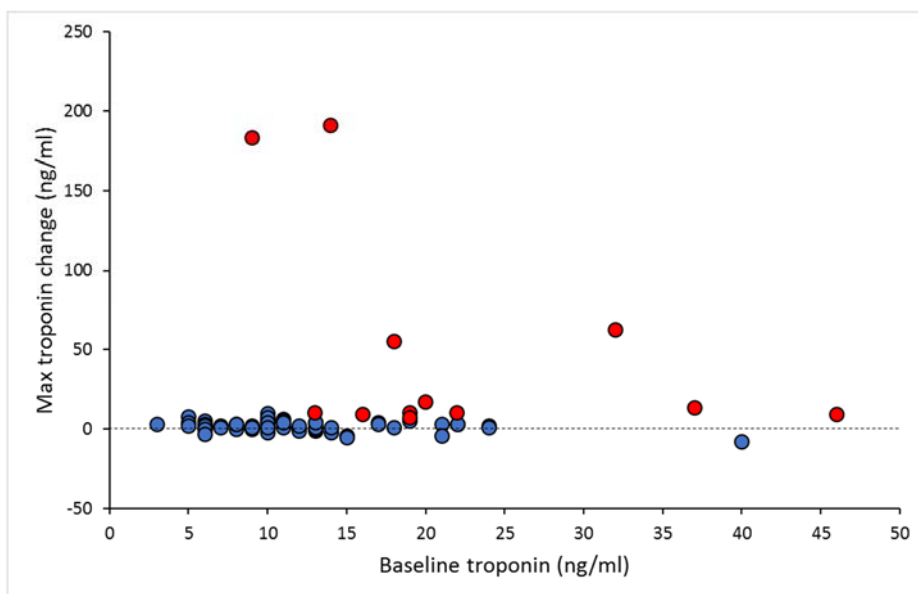


Figure 2

Maximal absolute troponin increase after surgery. Blue circles represent patient without MINS and red circles patients with MINS.