Physician practices in the management of myocardial injury after noncardiac surgery (After-MINS): A Survey Study

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Background
Myocardial injury after noncardiac surgery (MINS) is associated with an increased short-term and long-term risk of cardiovascular morbidity and overall mortality.[1,2,3] The practice patterns of physicians in the management of patients with MINS have not been previously described.

Methods/Results
A web-based survey was distributed through Lime Survey to members of the Canadian Society of Internal Medicine, the Canadian Cardiovascular Society, and the Society for Perioperative Research and Care between December 2020 and September 2021. The survey described the scenario of a patient who underwent total knee arthroplasty and was diagnosed with MINS, without ischemic symptoms or ECG changes. Respondents were asked to indicate, on a five-point Likert scale ranging from 'definitely no' to 'definitely yes', whether they would proceed with each given cardiac investigation and whether they believed a 1-month and 1-year follow-up with a specialist was appropriate. Respondents also indicated whether they would initiate specific cardiovascular medications. The survey was approved by the Hamilton integrated Research Ethics Board.

A total of 103 eligible responses were collected. The median participant age was 44 years (Q1-Q3, 34-54) and 60% were male. Two-thirds of respondents had seen at least ten patients with MINS during the last 12 months. Most respondents were general internists (65%), in independent practice for more than 5 years (65%), practicing in tertiary academic centres (74%) and located in Ontario (51%). Most respondents had a preoperative clinic (91%) and an inpatient perioperative consultation service (88%) at their centre but did not have a perioperative care division (27%). Less than half of respondents indicated that they would 'probably' or 'definitely' order an echocardiogram (46%) or cardiac perfusion imaging (42%). Most respondents indicated that they would start ASA (91%) and a statin (90%), whereas a minority would start an ACE inhibitor (24%), beta-blocker (21%), or dabigatran (7%). Most respondents felt that outpatient follow-up for MINS with a specialist was indicated within 1-2 months (90%) and after 1 year (68%).

Conclusion
Our survey of Canadian physicians showed a high consensus upon the use of ASA and statin for MINS in the acute setting, while only few would initiate dabigatran. There was a high rate of disagreement regarding cardiac investigations, but largely most physicians believed that patients with MINS deserve a follow up by a specialist in the short-term. Further research and actions are needed to understand the reasons for certain physician's choices and foster a common understanding and practice.

References

1. JAMA 2017 317(16):1642-1651.
2. Clin Res Cardiol 2021 110(9):1450-1463.
3. Lancet 2018 391: 2325-34.

Table

	Definitely No	Probably No	Unsure	Probably Yes	Definitely Yes
Would order an electrocardiogram	0	3 (3%)	0 (0%)	7 (7%)	93 (90%)
Would order an echocardiogram	15 (15%)	31 (30%)	10 (10%)	33 (32%)	14 (14%)
Would order cardiac perfusion imaging	18 (17%)	31 (30%)	11 (11%)	31 (30%)	12 (12%)
Outpatient follow-up within 1-2 months is indicated	0	7 (7%)	3 (3%)	48 (47%)	44 (43%)
Outpatient follow-up within 1 year is indicated	3 (3%)	16 (16%)	13 (13%)	35 (34%)	34 (34%)

Table. Summary of survey responses that were measured on a five-point Likert scale. Respondents indicated whether they would order specific cardiac investigations after MINS and whether they believed outpatient follow-up was indicated for MINS.