

# Application of new specific biomarkers for organ damage after open and endovascular thoracoabdominal aortic aneurysm surgery as model for more accurate perioperative patients' surveillance

Citation for published version (APA):

Gommert, A. (2023). Application of new specific biomarkers for organ damage after open and endovascular thoracoabdominal aortic aneurysm surgery as model for more accurate perioperative patients' surveillance. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20230327ag>

## Document status and date:

Published: 01/01/2023

## DOI:

[10.26481/dis.20230327ag](https://doi.org/10.26481/dis.20230327ag)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

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## Statements

1. Surgical treatment of complex aortic pathologies such as thoracoabdominal aortic aneurysm should be indicated carefully, even as the diameter threshold has been reached, because these procedures are related to a significant morbidity and mortality rate.
2. Even if extensive thoracoabdominal aortic aneurysm (TAAA) repair by endovascular means should be favored as short-, mid-term patient survival rates are favorable, some entities such as connective-tissue disease related TAAA and mycotic aneurysms need to be treated by open repair. Accordingly, even nowadays, vascular surgeons need to learn these procedures and all efforts to improve patients outcome afterwards are worthwhile.
3. Awareness should be increased for postoperative acute kidney injury (AKI) , as it is an inadequately reported complication of major surgery, especially after complex open aortic repair. Postoperative AKI is independently related to increased mortality rates after aortic surgery.
4. Biomarkers of early organ failure after major surgery should be established in daily routine as an adjunctive tool enabling more adequate diagnosis and treatment of clinically relevant complications.
5. Due to the low number of patients treated by open TAAA repair worldwide, prospective, multi-center studies should be conducted, enabling the establishment of large biobanks, leading to more reliable and relevant findings while assessing the clinical relevance of biomarkers in this context.
6. Patients requiring vascular surgical treatment are prone to perioperative cardiovascular complications, therefore an adequate cardiovascular preoperative assessment seems mandatory (Chaikof, JVS, 2017).
7. Complex aortic surgery by endovascular and open means should be centralized, as this has significantly improved patients outcome in fields of complex major surgery (Anders Wanhainen, EJVES, October 2020).
8. Adequate surgical training in field of open aortic surgery is a concern as a decreasing number of patients receives open repair of infrarenal aortic aneurysms. Therefore, vascular surgeons should become familiar with simulation-based training and

teaching, ensuring vascular surgical skills for the next generations of surgeons (Nayahangan, EJVES; May 2020).

9. “Non est ad astra mollis e terris via” or: “Per Aspera ad Astra”, Seneca, Hercules furens
10. “To be alive at all is to have scars.” John Steinbeck