



Canadian Agency for
Drugs and Technologies
in Health

RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS



TITLE: Post-Operative Cerebrospinal Fluid Removal: Guidelines

DATE: 10 December 2014

RESEARCH QUESTIONS

1. What are the evidence-based guidelines regarding removal of lumbar cerebrospinal fluid (CSF) for post-operative patients who have undergone thoracoabdominal aortic (TAAA) surgery or thoracic endovascular aneurysm repair (TEVAR)?
2. What are the evidence-based guidelines regarding maintenance and care of lumbar drainage sites while lumbar drains are in situ and after drain removal?

KEY FINDINGS

Two systematic reviews and two evidence-based guidelines were identified regarding the removal of lumbar CSF for post-operative patients who have undergone TAAA surgery or TEVAR.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 12), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI (Health Devices Gold), Canadian and major international health technology agencies, as well as a focused Internet search. No methodological filters were applied to limit retrieval by publication type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and December 1, 2014. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

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SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria	
Population	Post-operative adults who have had thoracoabdominal aortic surgery or thoracic endovascular aneurysm repair
Intervention	Drainage of lumbar cerebrospinal fluid, maintenance and care of drainage
Comparator	None
Outcomes	Evidence-based guidelines
Study Designs	Health technology assessment reports, systematic reviews, meta-analyses, evidence-based guidelines

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by evidence-based guidelines.

Two systematic reviews and two evidence-based guidelines were identified regarding the removal of lumbar CSF for post-operative patients who have undergone TAAA surgery or TEVAR. No relevant health technology assessment reports were found. In addition, no evidence-based guidelines regarding maintenance and care of lumbar drainage sites while lumbar drains are in situ and after drain removal were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Two systematic reviews and two evidence-based guidelines were identified regarding the removal of lumbar CSF for post-operative patients who have undergone TAAA surgery or TEVAR.

Overall there is very limited evidence that removal of lumbar CSF is indicated and beneficial for patients undergoing TAAA surgery or TEVAR.

One systematic review and meta-analysis¹ reported that CSF drainage in patients undergoing type I or type II TAAA surgery resulted in a reduced risk of post-operative deficits, based on the pooled results of three small trials. Another systematic review and meta-analysis² reported similar incidence rates of spinal cord ischemia (SCI) following prophylactic drain placement or no prophylactic drain placement in individuals undergoing TEVAR, based on pooled results from 46 studies.

One evidence-based guideline³ reported that the placement of a lumbar drainage device for the improvement of spinal cord perfusion is indicated for patients with thoracoabdominal aortic aneurysms. Another evidence-based guideline⁴ recommended CSF drainage as a spinal cord protective strategy in open and endovascular thoracic aortic repair for patients at high risk of

SCI. This was a class I (i.e., procedure or treatment should be performed or administered as benefit greatly outweighs risk) based on limited evidence evaluating limited populations.

No evidence-based guidelines regarding maintenance and care of lumbar drainage sites while lumbar drains are in situ and after drain removal were identified; therefore, no summary can be provided.

REFERENCES SUMMARIZED

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

1. Khan SN, Stansby G. Cerebrospinal fluid drainage for thoracic and thoracoabdominal aortic aneurysm surgery. *Cochrane Database Syst Rev.* 2012;10:CD003635.
[PubMed: PM23076900](#)
2. Wong CS, Healy D, Canning C, Coffey JC, Boyle JR, Walsh SR. A systematic review of spinal cord injury and cerebrospinal fluid drainage after thoracic aortic endografting. *J Vasc Surg [Internet].* 2012 Nov [cited 2014 Dec 10];56(5):1438-47. Available from:
http://ac.els-cdn.com/S0741521412012645/1-s2.0-S0741521412012645-main.pdf?_tid=5b2c4902-8085-11e4-9cbc-00000aacb361&acdnat=1418227277_940dc1415f6b2512798189457bc4372e
[PubMed: PM22884456](#)

Guidelines and Recommendations

3. American Association of Neuroscience Nurses. Care of the patient undergoing intracranial pressure monitoring/external ventricular drainage or lumbar drainage [Internet]. Chicago: The Association; 2011. [cited 2014 Dec 10]. Available from:
http://www.aann.org/uploads/AANN11_ICPEVDnew.pdf
See: XV. Indications for LDD placement, page 26.
NGC summary: <http://www.guideline.gov/content.aspx?id=34438>
4. Hiratzka LF, Bakris GL, Beckman JA, Bersin RM, Carr VF, Casey DE, et al. 2010 ACCF/AHA/AATS/ACR/ASA/SCA/SCAI/SIR/STS/SVM guidelines for the diagnosis and management of patients with thoracic aortic disease. *J Am Coll Cardiol [Internet].* 2010 Apr 6 [cited 2014 Dec 2];55(14):e27-e129. Available from:
<http://content.onlinejacc.org/article.aspx?articleid=1142684>
See: 14. Perioperative care for open surgical and endovascular thoracic aortic repairs, page e93
[PubMed: PM20359588](#)
NGC summary: <http://www.guideline.gov/content.aspx?id=45376>

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APPENDIX – FURTHER INFORMATION:

Review Articles

5. Fedorow CA, Moon MC, Mutch WA, Grocott HP. Lumbar cerebrospinal fluid drainage for thoracoabdominal aortic surgery: rationale and practical considerations for management. *Anesth Analg* [Internet]. 2010 Jul [cited 2014 Dec 2];111(1):46-58. Available from: http://journals.lww.com/anesthesia-analgesia/Fulltext/2010/07000/Lumbar_Cerebrospinal_Fluid_Drainage_for.12.aspx
[PubMed: PM20522706](#)