



Canadian Agency for
Drugs and Technologies
in Health

RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS



TITLE: Nebulizers for the Methacholine Challenge Test: Diagnostic Accuracy and Guidelines

DATE: 9 May 2014

RESEARCH QUESTIONS

1. What is the diagnostic accuracy of the English-Wright nebulizer compared with the AeroEclipse II nebulizer for the methacholine challenge test in the diagnosis of asthma?
2. What are the evidence-based guidelines regarding the type of nebulizer to use for the diagnosis of asthma?

KEY MESSAGE

No relevant literature was found regarding the diagnostic accuracy of the English-Wright nebulizer compared with the AeroEclipse II nebulizer or the choice of nebulizer for the methacholine challenge test in the diagnosis of asthma.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 4), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type for question number one. A guidelines filter was used for question number two. The search was limited to English language documents published between Jan 1, 2009 and May 5, 2014. Internet links were provided, where available.

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 randomized controlled trials, non-randomized studies, and evidence-based guidelines.

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No relevant health technology assessment reports, systematic reviews, meta-analyses, randomized controlled trials, or non-randomized studies were identified regarding the diagnostic accuracy of the English-Wright nebulizer compared with the AeroEclipse II nebulizer for the methacholine challenge test in the diagnosis of asthma. Additionally, no evidence-based guidelines regarding the choice of nebulizer for the methacholine challenge test in the diagnosis of asthma were identified.

References of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

No relevant literature was found regarding the diagnostic accuracy of the English-Wright nebulizer compared with the AeroEclipse II nebulizer or the choice of nebulizer for the methacholine challenge test in the diagnosis of asthma; therefore, no summary can be provided.

REFERENCES SUMMARIZED

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

No literature identified.

Guidelines and Recommendations

No literature identified.

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APPENDIX – FURTHER INFORMATION:

Randomized Controlled Trials

Alternate Nebulizers

1. Naji N, Keung E, Beaudin S, Kane J, Killian KJ, Gauvreau GM. The effects of particle size on measurement of airway hyperresponsiveness to methacholine. *Ann Allergy Asthma Immunol.* 2013 May;110(5):359-63.
[PubMed: PM23622007](#)

Non-Randomized Studies

Pre-Clinical Studies

2. Coates AL, Leung K, Dell SD. Developing alternative delivery systems for methacholine challenge tests. *J Aerosol Med Pulm Drug Deliv.* 2014 Feb;27(1):66-70.
[PubMed: PM23586502](#)

Guidelines and Recommendations

Consensus Statement – Nebulizers Not Specifically Mentioned

3. Vandemplas O, Suojalehto H, Aasen TB, Baur X, Burge PS, de Blay F, et al. Specific inhalation challenge in the diagnosis of occupational asthma: consensus statement. *Eur Respir J.* 2014 Mar 6.
[PubMed: PM24603815](#)

Additional References

4. Coates AL, Leung K, Dell S. Replacing The English Wright And The DeVilbiss 646 Nebulizers For Methacholine Challenge Tests (MCT) [abstract]. *Am J Respir Crit Care Med* [Internet]. 2012 [cited 2014 May 8];185:A5753. Available from: http://www.atsjournals.org/doi/abs/10.1164/ajrccm-conference.2012.185.1_MeetingAbstracts.A5753
5. Trudell Medical International [Internet]. London (ON): Trudell Medical International; 2014. Methacholine challenge tests and AeroEclipse* II BAN; 2012 Jun 22 [cited 2014 May 8]. Available from: <http://www.trudellmed.com/company/tmi-news/2012/06/22/methacholine-challenge-tests-and-aeroeclipse-ii-ban>