TITLE: Bioimpedance Devices for the Assessment of Body Fluid Volume for Patients Undergoing Peritoneal Dialysis Versus Hemodialysis: Comparative Clinical Effectiveness and Guidelines

DATE: 29 July 2015

RESEARCH QUESTIONS

1. What is the comparative clinical effectiveness of bioimpedance devices for the assessment of body fluid volume status in patients with renal disease who are on peritoneal dialysis versus hemodialysis?

2. What are the evidence-based guidelines regarding the optimal use of bioimpedance devices for the assessment of body fluid volume status in patients with renal disease who are on peritoneal dialysis compared to hemodialysis?

KEY FINDINGS

No relevant literature was identified regarding the comparative clinical effectiveness of bioimpedance devices for the assessment of body fluid volume status in patients with renal disease who are on peritoneal dialysis versus hemodialysis. In addition, no evidence-based guidelines were identified regarding the optimal use of bioimpedance devices for the assessment of body fluid volume status in patients with renal disease who are on peritoneal dialysis compared to hemodialysis.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and July 21, 2015. Internet links were provided, where available.
SELECTION CRITERIA

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

Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Adult patients with renal disease requiring peritoneal dialysis or hemodialysis</th>
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</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Q1: Bioimpedance devices for the assessment of body fluid volume in peritoneal dialysis patients</td>
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<td></td>
<td>Q2: Bioimpedance devices for the assessment of body fluid volume</td>
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<tr>
<td>Comparator</td>
<td>Q1: Bioimpedance devices for the assessment of body fluid volume in hemodialysis patients</td>
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<td></td>
<td>Q2: No comparator</td>
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<tr>
<td>Outcomes</td>
<td>Q1: Clinical effectiveness (e.g., blood pressure, fluid overload, left ventricular mass index, body weight, antihypertensive drug use); Safety</td>
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<td>Q2: Evidence-based guidelines comparing optimal use of bioimpedance devices for the assessment of fluid volume in peritoneal dialysis versus hemodialysis patients</td>
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<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines</td>
</tr>
</tbody>
</table>

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.

No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or non-randomized studies were identified regarding the comparative clinical effectiveness of bioimpedance devices for the assessment of body fluid volume status in patients with renal disease who are on peritoneal dialysis versus hemodialysis. In addition, no evidence-based guidelines were identified regarding the optimal use of bioimpedance devices for the assessment of body fluid volume status in patients with renal disease who are on peritoneal dialysis compared to hemodialysis.

Additional references of potential interest are provided in the appendix.

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:

Previous CADTH Reports


Non-Randomized Studies

Hemodialysis/Peritoneal Dialysis Not Specified


No Comparison of Bioimpedance Devices


Comparison of Bioimpedance Techniques


Review Articles


Additional References