TITLE: Angiotensin Converting Enzyme Inhibitor and Angiotensin II Receptor Blocker Combination Therapy: Harms and Guidelines

DATE: 13 March 2015

RESEARCH QUESTIONS

1. What are the harms of combination therapy with angiotensin converting enzyme inhibitors and angiotensin II receptor blockers for the treatment of patients with hypertension, diabetic nephropathy, and heart failure?

2. What are the evidence-based guidelines for the combination therapy of angiotensin converting enzyme inhibitors and angiotensin II receptor blockers for the treatment of patients with hypertension, diabetic nephropathy, and heart failure?

KEY FINDINGS

One evidence-based guideline was identified regarding the harms of combination therapy with angiotensin converting enzyme inhibitors and angiotensin II receptor blockers for the treatment of patients with hypertension, diabetic nephropathy, and heart failure.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2015, Issue 3), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and March 3, 2015. 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.

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<th>Table 1: Selection Criteria</th>
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ACE-I = angiotensin converting enzyme inhibitors; ARB = angiotensin II receptor blockers.

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.

One evidence-based guideline was identified regarding the harms of combination therapy with angiotensin converting enzyme inhibitors (ACE-I) and angiotensin II receptor blockers (ARB) for the treatment of patients with hypertension, diabetic nephropathy, and heart failure. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or non-randomized studies were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

One evidence-based guideline was identified regarding the harms of combination therapy with ACE-I s and ARBs for the treatment of patients with hypertension, diabetic nephropathy, and heart failure.

The Kidney Disease Improving Global Outcomes (KDIGO) Guideline\(^1\) recommends that when managing blood pressure in patients with chronic kidney disease (non-dialysis) and diabetes mellitus, an ACE-I or an ARB should be used in adults with urine albumin excretion of 30 to 300 mg per 24 hours, or greater than 300 mg per 24 hours. No recommendation regarding dual therapy was given.
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

   Summarized at: http://www.guideline.gov/content.aspx?id=39430
   See: Chapter 4: Blood pressure management in CKD ND patients with diabetes mellitus, Recommendations 4.3 and 4.4, page 342

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APPENDIX – FURTHER INFORMATION:

Systematic Reviews and Meta-Analyses – Patients with Heart Failure


Guidelines and Recommendations – Individual Indications (Hypertension, Diabetic Nephropathy, or Heart Failure)


See: VII. Treatment of hypertension in association with heart failure, page 496


Summarized at: http://www.guideline.gov/content.aspx?id=46510

See: 3.1 Prevention of CKD Progression, BP and Renin-Angiotensin-Aldosterone System (RAAS) Interruption, pages 73-74


Summarized at: http://www.guideline.gov/content.aspx?id=47453

See: Recommendation 3

7. McMurray JJ, Adamopoulos S, Anker SD, Auricchio A, Bohm M, Dickstein K, et al. ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012: The Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC. Eur Heart J [Internet]. 2012 Jul [cited 2015 Mar 12];33(14):1787-847. Available from:
PubMed: PM22611136
See: 7.2.4 Angiotensin receptor blockers, page 1809

See: Table 7.3 Recommendations for pharmacological treatment of symptomatic CHF, page 29

See: Choosing antihypertensive drug treatment, Recommendation 1.6.7, page 17

See: 1.2.2.4 Pharmacological treatment of heart failure; Heart failure due to left ventricular systolic dysfunction; Second-line treatment, pages 16-17

Review Article

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