Cochrane for Clinicians

Putting Evidence into Practice

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This series is coordinated by Corey D. Fogleman, MD, Assistant Medical Editor.

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ACE Inhibitors vs. ARBs for Primary Hypertension

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Clinical Question

How does the effectiveness of angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) compare in head-to-head studies of patients with hypertension?

Evidence-Based Answer

ACE inhibitors and ARBs have similar effects on cardiovascular outcomes and total mortality in head-to-head trials. However, slightly more adverse effects were noted in patients assigned to ACE inhibitor therapy. (Strength of Recommendation: B, based on inconsistent, moderate-quality patient-oriented evidence.)

Practice Pointers

In 2014, the Eighth Joint National Committee (JNC 8) published evidence-based recommendations for the management of hypertension. The panel concluded that ACE inhibitors and ARBs are comparable and thus essentially interchangeable for the initial treatment of hypertension in patients who do not have heart failure.[1] However, only ACE inhibitors have shown reductions in morbidity and mortality in placebo-controlled trials.[2] Head-to-head comparison of these two drug classes is therefore highly relevant to family physicians. The authors of this Cochrane review compared the effectiveness of ACE inhibitors and ARBs for reducing total mortality and cardiovascular events, as well as rates of adverse effects.

This meta-analysis included nine randomized controlled trials with 11,007 participants that directly compared an ACE inhibitor with an ARB for the treatment of essential hypertension for at least one year. Eight of the trials provided data on rates of withdrawal from adverse effects. Patients who were enrolled in the trials had uncontrolled or controlled primary hypertension, defined as a systolic blood pressure greater than 140 mm Hg or a diastolic blood pressure greater than 90 mm Hg. Almost all participants had uncontrolled blood pressure before initiation of treatment and ranged from 55 to 72 years of age with approximately equal representation of both sexes. The ACE inhibitors used in the studies were enalapril (Vasotec), ramipril (Altace), lisinopril, fosinopril (Monopril), and quinapril (Accupril). The ARBs included telmisartan (Micardis), losartan (Cozaar), candesartan (Atacand), valsartan (Diovan), and irbesartan (Avapro).

The authors found no evidence of a difference between ACE inhibitors and ARBs when analyzing any of the primary outcomes: total mortality (relative risk [RR] = 0.98; 95% confidence interval [CI], 0.88 to 1.10), total cardiovascular events (RR = 1.07; 95% CI, 0.96 to 1.19), or cardiovascular mortality (RR = 0.98; 95% CI, 0.85 to 1.13). The evidence for comparison of total mortality and cardiovascular mortality was of moderate quality, whereas the data for total cardiovascular events relied on low-quality evidence (in part because of deviation from the prepublished protocol).

ARBs were slightly superior to ACE inhibitors for the secondary outcomes of withdrawal due to adverse effects, based on a high level of evidence (RR = 0.83; 95% CI, 0.74 to 0.93; number needed to treat for an additional beneficial outcome = 55 over 4.1 years), mainly because of a higher incidence of dry cough with ACE inhibitors. Dry cough accounted for 43% of the reported adverse effects in the ACE inhibitor arm vs. 4% in the ARB arm. Patients who stopped taking their ACE inhibitor also cited such adverse effects as atrial flutter, edema, rash, and rise in creatinine levels. For those taking ARBs, the reasons for discontinuation of therapy included dizziness, hypotension, palpitations, and dyspnea. The study that contributed the most weight to the meta-

analysis (ONTARGET 2008) did not provide adequate information regarding adverse effects.

The primary outcomes of this review support U.S. and British hypertension guideline recommendations that ACE inhibitors and ARBs may be used interchangeably.[1,3] Each medication class, however, affects a unique step of the renin-angiotensin-aldosterone system, which may account for the differences in adverse effect profiles and tolerability. Although previous studies had already established the similar effectiveness of ACE inhibitors and ARBs in lowering blood pressure,[4] this meta-analysis goes a step further by assessing the outcomes that really matter to patients—mortality and cardiovascular events. Given the limitations of some of the evidence, the Agency for Healthcare Research and Quality has identified future comparative studies of ACE inhibitors and ARBs as a priority,[4] particularly because of how few head-to-head studies have been published.

SOURCE: Li EC, Heran BS, Wright JM. Angiotensin converting enzyme (ACE) inhibitors versus angiotensin receptor blockers for primary hypertension. *Cochrane Database Syst Rev.* 2014;(8):CD009096.

The practice recommendations in this activity are available at http://summaries.cochrane.org/CD009096.

REFERENCES

1. James PA, Oparil S, Carter BL, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8) [published correction appears in *JAMA*. 2014;311(17):1809]. *JAMA*. 2014;311(5):507-520.
2. Wright JM, Musini VM. First-line drugs for hypertension. *Cochrane Database Syst Rev.* 2009;(3):CD001841.
3. National Institute for Health and Care Excellence. Hypertension: clinical management of primary hypertension in adults. NICE guidelines CG127. August 2011. http://www.nice.org.uk/guidance/cg127. Accessed January 29, 2015.
4. Agency for Healthcare Research and Quality. Angiotensin-converting enzyme inhibitors (ACEIs), angiotensin II receptor antagonists (ARBs), and direct renin inhibitors for treating essential hypertension: an update. Comparative Effectiveness Review, no. 34. June 2011. http://effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productID=696. Accessed March 15, 2015.

Cultural Competence Education for Health Care Professionals

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Clinical Question

Does cultural competence education for health care professionals affect outcomes for patients (satisfaction, perception of health care), professionals (clinician awareness, patient-clinician relationship), or organizations (increase in patient engagement, increased likelihood of meeting treatment goals)?

Evidence-Based Answer

Low-quality evidence suggests that training health care professionals in patient-centered communication improves the engagement of patients from culturally and linguistically diverse backgrounds in their health care. Interventions that were primarily educational appeared to be ineffective. (Strength of Recommendation: C, based on consensus, disease-oriented evidence, usual practice, expert opinion, or case series.)

Practice Pointers

Cultural competence education for health care professionals may reduce persistent disparities in health care quality and outcomes among persons from minority cultural and linguistic backgrounds. If barriers to intercultural communication, linguistic and otherwise, can be overcome, communication and collaboration between patients and physicians may facilitate better health outcomes.[1] Although many institutions train clinicians in cultural competency, there is no consensus definition or well-established curriculum for teaching it.[2,3] This Cochrane review examined whether cultural competence education improved patient, professional, or organizational outcomes in patients and clinicians from culturally and linguistically diverse backgrounds and ethnic minorities.

Five randomized controlled trials that involved 337 health care professionals and 8,400 patients compared the effects of cultural competence education for health professionals vs. no training. Three studies were from the United States, one study was from Canada, and one study was conducted in the Netherlands. The studies reviewed different types of interventions, including those that focused on communication, cultural sensitivity training, and delivering training to health care professionals with performance feedback. Study participants included clinicians and patients from culturally diverse backgrounds. Interventions ranged in duration from four to 36 hours. All interventions were compared with usual care. Primary outcomes included treatment outcomes such as target cholesterol levels, health behaviors such as attendance at scheduled appointments, involvement in care, and patient evaluation of care. Patient knowledge and understanding were secondary outcomes. Positive, low-quality evidence showed improvement in patients' engagement in their care after clinicians were trained in patient-centered communication. Interventions that were primarily educational appeared to be ineffective. No studies assessed adverse outcomes.

Despite mixed evidence, organizations such as the Joint Commission support cultural competence interventions to reduce disparities among culturally and linguistically diverse populations and to improve patient safety and patient satisfaction.[4,5] Medical schools and residency programs are increasingly incorporating cultural competence education into their curricula,[6] and this review suggests that patient-centered communication should be a key component. The Joint Commission defines patient-centered communication as effective communication of health information that takes into consideration a patient's language needs, individual understanding, and cultural and other issues.[5] Practicing clinicians should continue to be aware of cultural differences and potential cultural barriers to care.

SOURCE: Horvat L, Horey D, Romios P, Kis-Rigo J. Cultural competence education for health professionals. *Cochrane Database Syst Rev.* 2014;(5):CD009405.

The practice recommendations in this activity are available at http://summaries.cochrane.org/CD009405.

REFERENCES

1. Wilson-Stronks A, Lee KK, Cordero CL, Kopp AL, Galvez E. One size does not fit all: meeting the health care needs of diverse populations. Oakbrook Terrace, Ill.: The Joint Commission; 2008. http://www.jointcommission.org/assets/1/6/HLCOneSizeFinal.pdf. Accessed December 2014.
2. Grant J, Parry Y, Guerin P. An investigation of culturally competent terminology in healthcare policy finds ambiguity and lack of definition. *Aust N Z J Public Health.* 2013;37(3):250-256.
3. Kleinman A, Benson P. Anthropology in the clinic: the problem of cultural competency and how to fix it. *PLoS Med.* 2006;3(10):e294.
4. Goode TD, Dunne MC, Bronheim SM. The evidence base for cultural and linguistic competency in health care. New York, NY: The Commonwealth Fund; October 2006. http://www.commonwealthfund.org/~/media/Files/Publications/Fund%20Report/2006/Oct/The%20Evidence%20Base%20for%20Cultural%20and%20Linguistic%20Competency%20in%20Health%20Care/Goode_evidencebasecultlinguisticcomp_962%20pdf.pdf. Accessed December 2014.
5. Advancing effective communication, cultural competence, and patient- and family-centered care: a roadmap for hospitals. Oakbrook Terrace, Ill.: The Joint Commission; 2010.
6. Westerhaus M, Finnegan A, Haidar M, Kleinman A, Mukherjee J, Farmer P. The necessity of social medicine in medical education. *Acad Med.* Epub ahead of print November 18, 2014. ■