ACE Inhibitor and ARB Use in Hypertensive Patients with Diabetes

For our overall adult hypertensive population, we have appropriately prioritized thiazide diuretics as first line therapy for hypertension. This of course has strong evidence of efficacy. Our goal with this communication is to have you consider the potential advantages of ACEI/ARBs for your hypertensive patients with diabetes.

ACE Inhibitor (ACEI) and ARB use have been shown to decrease the rate of progression of kidney disease in patients with diabetes, independent of their ability to lower blood pressure.

They also have additional benefits in patients with congestive heart failure and possible coronary artery disease. Because of these benefits; several national and international guidelines recommend the use of ACEI/ARBs as a first line antihypertensive agent when patients have a diagnosis of diabetes.

Medicare measures health plan quality through the Medicare Stars program. Results are reported publically and are tied to health plan reimbursement. One of these star ratings measures the percentage of patients who have diabetes and hypertension that are filling a prescription for an ACEI/ARB. For calendar years 2011 and 2012, HealthPartners has scored 1 out of a possible 5 stars for this measure. The majority of patients with diabetes not meeting the measure receive their care at HealthPartners Medical Group Clinics.

Although the majority of providers are using ACEI/ARBs in their patients with hypertension and diabetes, there appears to be a common theme of discontinuing ACEI/ARB when patient’s renal function begins to decline and serum potassium levels start to rise, precisely the time when these medications may be of the most use.
Clinical Considerations:

- ACEI/ARBs should be considered first line antihypertensive agents for all patients with diabetes without contraindications for use, i.e. angioedema, bilateral renal artery stenosis. Also, for patients already on thiazide diuretics who require second line therapy, ACEI/ARB should be considered.
- It is not uncommon to have an acute rise in serum creatinine of up to 30% within 2-5 days of initiating an ACEI/ARB, especially if the patient has CKD/CHF. ACEI/ARB can be safely continued in these patients if the creatinine subsequently stabilizes at the higher level.
- ACEI/ARBs can often be used safely and will improve renal outcomes in stable patients with diabetes even if they have poor renal function (GFR <30mL/min).
  - Hyperkalemia is a concern in these patients, but often discontinuation of potassium sparing diuretics, dietary potassium restriction, and/or initiation of low dose loop diuretics can minimize risk.
  - NSAIDs should be stopped if the patients are on them, as NSAIDs cause worsening kidney function, hypertension and hyperkalemia. However, if the patient is on once a day Aspirin for cardiovascular risk reduction, this should be continued.
  - There is no absolute creatinine level when use of an ACEI/ARB would be contraindicated. In one randomized study with creatinine values 3.1-5.0, more benefit was shown in giving benazepril compared to placebo at these levels. (Reference 3 below.)
- Consideration should be given to restarting a discontinued ACEI/ARB after an acute kidney injury not related to the ACEI/ARB occurs. This can be done once kidney function comes back to baseline OR when stability of kidney function is established (as in some patients after Acute Kidney Injury, baseline creatinine may be higher). Monitoring of serum creat/K within a week after restarting the ACEI/ARB is recommended.
- When starting an ACEI/ARB in patients with impaired renal function, one approach is to start therapy at a low dose (lisinopril 2.5mg equivalent dose) then gradually titrate it upwards every few weeks with monitoring of creatinine/potassium.

References:

2. Renoprotective Effects of the Angiotensin-Receptor Antagonist Irbesartan in Patients with Nephropathy Due to Type 2 Diabetes. Published by The New England Journal of Medicine. 2001; 345(12): 851.
Questions: Please reply to this e-mail, and your questions(s) will be directed to the author of this Pearl, Vishal Sagar, MD.

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All Pearl recommendations are consistent with professional society guidelines, and reviewed by HealthPartners Physician Leadership.