QUERI-DM

Quality Enhancement Research Initiative Diabetes Mellitus

The Need for Tight Blood Pressure Control in Patients with Diabetes!

Inadequate treatment of hypertension in people with type 2 diabetes results in many cases of preventable stroke, myocardial infarction, end-stage renal disease, visual impairment/blindness, and premature death. Most veterans with diabetes also have hypertension and meticulous control of their blood pressure is probably the single most important medical intervention in improving their health and prolonging their life. The VA guidelines committee and the Quality Enhancement Research Initiative for Diabetes (QUERI-DM) have made improved blood pressure control one of the priorities for quality improvement in VHA. Here is an excellent opportunity for us to provide the highest quality of care to our patients, allowing them to live longer, healthier lives.

Benefits of Tight Blood Pressure Control in Diabetic Patients

Important studies conducted over the past two years have demonstrated that:

1. Patients with diabetes get at least twice the benefit out of blood pressure control than do non-diabetics.[1]
2. Blood pressure has at least as much impact on eye and kidney disease in diabetes as does blood sugar control.[2]
3. Patients with diabetes require much more rigorous blood pressure control than most patients without diabetes.[2,3]

Just how tightly blood pressure must be controlled is not precisely known, but for diabetics 140/90 is not sufficient. The HOT Trial[3] and the UKPDS[2] have shown conclusively that lowering diastolic blood pressure to at least less than 85 mg Hg results in substantial improvements in cardiovascular risk. The ADA recommends 130/85. The VA guidelines, which use an evidence-based approach, recommend a target of at least <140/85 but also recognize that even lower blood pressures may be beneficial.

In practice, what is most important is that we are willing to use at least three to four blood pressure medications in pursuit of tight blood pressure control, and that it is a goal important enough to search for the optimal 3-4 medication regimen. However, we must also realize that it will not always be possible to reach the desired blood pressure goal (especially the systolic blood pressure goal, which is particularly difficult to achieve) and we must balance patient side effects while attempting to achieve these tight levels of control. In doing so, the level of blood pressure achieved appears to be much more important than which anti-hypertensive agent is used to achieve it.[4]

This being said, current evidence tends to support ACE-inhibitors as the best first choice agent for most patients with diabetes (with ARBs being an excellent choice for those who cannot take ACE-inhibitors). Calcium channel blockers are not appropriate first line treatments for hypertension for those with diabetes and are best used as a third or fourth choice agent. Not only are calcium channel blockers more expensive than most other agents, but two studies have suggested that when used as a single first choice agent, they are less effective in preventing important cardiovascular outcomes.[3,5,6]. This should not keep us from using calcium channel blockers if needed to decrease blood pressure, but given the higher cost and the possibility of being inferior to other agents in preventing adverse outcomes, they should generally be reserved for instances in which other agents are insufficient or contra-indicated. Also, low dose hydrochlorothiazide (HCTZ) and beta-blockers can be extremely effective in improving blood pressure and decreasing adverse outcomes in people with diabetes. Indeed, in the UKPDS, beta-blockers appeared to be at least as effective in preventing adverse outcomes in type 2 diabetics when compared to ACE-inhibitors.[4] Low dose HCTZ (often starting at 12.5 mg/day) is an inexpensive and highly effective anti-hypertensive especially for elderly and African-American patients with hypertension and diabetes.[1]

Although it may seem preferable to use home readings to treat and monitor blood pressure, only office blood pressures have been used in studies showing adverse outcomes with elevated blood pressures. Thus, office blood pressures are an important monitor of the quality of care. Moreover, monitoring and implementing optimal therapy for our diabetic patients with hypertension must be a key priority. This may not be easy given busy practices and the many important treatments and problems of patients with diabetes. However, tight blood

pressure control is substantially more important than many other conditions that might occupy our time and our attention[7] and we must become more vigilant in addressing this important clinical issue. In particular, evidence suggests that physicians often do not treat systolic hypertension aggressively, even though there is now compelling evidence that aggressive treatment of systolic hypertension is beneficial.[1-3]

Recommendation

- Be willing to use 3-4 anti-hypertensive medications with a goal of blood pressure <130-135/80-85.
- In, general, blood pressure control is more important than which agent is used, but ACE-inhibitors are the preferred first-choice agents for most patients with diabetes.
- Low doses of HCTZ and beta blockers are effective, inexpensive, and safe
- Calcium channel blockers are sometimes very useful, but should generally be relegated to a third or fourth choice agent

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