

One size doesn't fit all when treating blood pressure in people with diabetes, study suggests

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Aggressive efforts to lower blood pressure in people with diabetes are paying off – perhaps too well, according to a new study

The research shows that there have been dramatic improvements in [blood pressure](#) control among patients with [diabetes](#) in the U.S. Department of Veterans Affairs, with as many as 82 percent of patients having blood pressure controlled and 94 percent getting appropriate BP treatment.

However, given the dramatic rise in control, as many people now may be getting over-treated with blood pressure medications as are being under-treated.

That suggests it might be time to reconsider the current one-size-fits-all approach to blood pressure control, and turn to a new model that adjusts the blood pressure goal according to the individual, say a team of researchers from the VA Ann Arbor Healthcare System and the University of Michigan Health System.

Modern healthcare electronic record systems should help make this possible, they say, because blood pressure, prescription and other health data on individual risks such as heart disease or balance problems can all be combined.

In a paper being published online in the *Archives of Internal Medicine*, the team finds that over 8 percent of the 977,000 VA patients nationwide with diabetes are possibly being over-treated. Meanwhile, 6 percent were not being treated as aggressively as they could be.

"Appropriately treating blood pressure in people with diabetes is extremely important, and good blood pressure control should still be the goal to reduce risk of heart attack, stroke and other conditions," says first author Eve Kerr, M.D., director of the Center for Clinical Management Research at the VAAHS and professor of internal medicine at the U-M Medical School.

"But just treating to a BP target in all patients may result in over-treating and harming some patients because their blood pressures actually fall too low," she adds. "We need to find better ways to measure and incentivize appropriate BP management to make sure that patients who need aggressive treatment are getting it, and to decrease the rate of inappropriate overtreatment."

The team looked back at electronic records from people with diabetes and high blood pressure who were treated at any of 879 VA hospitals and clinics in 2009 and 2010. Almost 714,000 of them were between the ages of 18 and 75. Drawing on the expertise of dozens of VA clinical and measurement experts, they developed a "clinical action measure", or way of assessing the appropriateness of a patient's care by looking at treatment factors and contraindications, not just the target blood pressure. They also defined a monitor of potential overtreatment, to signal that some patients could be receiving overly aggressive treatment.

Appropriate BP management was defined by the clinical action measure having a BP either less than 140/90 or less than 150/65; or having appropriate management of elevated blood pressure (medication intensification or being on 3 or more BP medications). Potential

overtreatment was defined as having blood pressure that was less than 130/65 while also receiving three or more BP medicines or having recent medication increases. They focused on the patients under the age of 75 when assessing under-treatment, and all patients when looking for overtreatment.

Recent research has found that patients with diabetes don't have better cardiovascular outcomes, but experience more side effects, if they get aggressive treatment to lower their blood pressure under 130/80. At the same time, some people experience side effects caused by "polypharmacy", or the impact of taking multiple drugs at the same time for the same condition. In addition, diastolic blood pressure under 65 is associated with worse cardiovascular health, and low blood pressure could also cause dizziness that can lead to dangerous falls.

Interestingly, the rate of overtreatment varied considerably between VA facilities – ranging as high as 20 percent at some and as low as 3 percent at others. The hospitals and clinics with the highest overall rates of diabetes patients with blood pressure at or below the target of 140/90 also had the highest rates of overtreatment, they found.

This is likely a result of focusing on a target than on an individualized approach – a phenomenon that might be tied to performance incentives and public reporting practices currently in place, says Kerr, a member of the U-M Institute for Healthcare Policy and Innovation and the Michigan Diabetes Research and Training Center.

Such one-goal-for-all benchmarks were set years ago when blood pressure control for people with diabetes was poor across the board. But now, when 82 percent of VA patients with diabetes have their blood pressure under 140/90, a more sophisticated approach is likely needed, Kerr notes.

"We need to have performance measures that focus on appropriate treatment, and if patients are being treated aggressively but still don't quite get to a target control value we need to allow that to count as appropriate care," she says. As a first step, the VA system will adopt the BP clinical action measure to motivate appropriate BP management for patients based on their risks and treatment characteristics. But the same could be done in non-VA settings, especially those that have reached as high levels of BP control as has the VA healthcare system.

In the meantime, people who have diabetes should talk with their doctors about their blood pressure treatment and the lifestyle steps and medicines they are taking to keep it under control, Kerr says. "It is essential that we continue to monitor and focus on BP control among [patients](#) with diabetes, but we also have to realize that when BP starts to dip too low, it may be time to decrease treatment."

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