

How low is too low? Study highlights serious risks for intensive blood pressure control

August 24 2018

Kaiser Permanente research published today in the *American Journal of Preventive Medicine* found if patients with hypertension taking prescribed medications experience unusually low blood pressures—systolic blood pressure under 110mmHg—they are twice as likely to experience a fall or faint as patients whose treated blood pressure remains 110mmHg and above.

This research is timely because late last year the American Heart Association and the American College of Cardiology lowered its definition of high [blood pressure](#) from a [systolic blood pressure](#) of at least 140 to a systolic of at least 130, said the study's lead author John J. Sim, MD, a nephrologist with the Kaiser Permanente Los Angeles Medical Center.

"Efforts to reduce [blood](#) pressures for patients with hypertension are an important factor in reducing the risk of heart attack and stroke," Dr. Sim said. "But our study shows that attaining a [lower blood pressure](#) could create to a subpopulation of patients whose blood pressures may go too low, which can pose risk for serious falls and fainting."

To determine the effects of blood pressure reduction among hypertension on patients, Dr. Sim and a team of researchers studied the electronic health records of more than 475,000 Kaiser Permanente patients in Southern California who were prescribed medication to treat hypertension. Over a one-year period, both mean and minimum systolic blood pressure readings of less than 110 mmHg were associated with

higher rates of serious falls and fainting that resulted in emergency department visits or inpatient encounters.

Among the patients with treated blood pressure:

- 27 percent had a systolic blood pressure under 110mmHg during at least one visit
- 3 percent of patients had an average systolic pressure reading of less than 110mmHg over the one-year study period
- Patients with a single episode of systolic pressure lower than or equal to 110mmHg during the one-year period were twice as likely to experience a serious fall or faint
- Patients who had an average systolic blood pressure lower than 110mmHg over the one-year study period had a 50 percent greater risk of serious falls and fainting than those who had an average systolic blood pressure higher than 110mmHg

"Physicians considering lower blood pressure targets for their patients should weigh the risks and benefits of aggressive blood pressure lowering on an individual basis, especially in older patients," said Dr. Sim.

He noted that older patients are more likely to have acute reductions in blood pressure, such as orthostatic hypotension, which is when a patient's blood pressure drops substantially when they stand or get upright, and have slower reflexes to compensate and normalize their blood pressure. They also are more susceptible to side effects of low blood pressure, he said.

Some characteristics physicians should watch out for before considering lowering a patient's blood pressure are acute illness, blood pressure variation throughout the day, and orthostatic hypotension, Dr. Sim said.

Provided by Kaiser Permanente

Citation: How low is too low? Study highlights serious risks for intensive blood pressure control (2018, August 24) retrieved 24 April 2024 from

<https://medicalxpress.com/news/2018-08-highlights-intensive-blood-pressure.html>

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