

# Increasing blood pressure medications at hospital discharge may pose serious risk

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Increasing medications for blood pressure when discharging older patients from the hospital may pose a greater risk of falls, fainting and acute kidney injury that outweighs the potential benefits, according to a

study by researchers at UC San Francisco and the affiliated San Francisco VA Health Care System.

Among more than 4,000 VA patients who were at least 65 years old and hospitalized for non-cardiac conditions, the researchers found that being discharged with intensified antihypertensives did not reduce cardiovascular events or improve [blood pressure control](#) after a year, but did increase the risk for readmission and serious adverse events within 30 days. Findings appear Aug. 19, 2019, in *JAMA Internal Medicine*.

"Blood pressure management is about long-term control, but during hospitalization, patients' [blood](#) pressure can be temporarily elevated in response to illness and stress," said lead author Timothy Anderson, MD, MAS, MA, a primary care research fellow in the Division of General Internal Medicine at UCSF.

"Our findings suggest that making medication changes during this period is not beneficial," Anderson continued. "Instead, deferring medication adjustments to outpatient doctors to consider once patients are recovered from their acute illness is likely to be a safer course."

Blood pressure is measured frequently during hospitalizations and often fluctuates. Previous research has shown that higher blood pressure due to pain, stress, anxiety and exposure to new medications while in the hospital may lead clinicians to intensify antihypertensive treatment, potentially without knowledge of other patient factors, such as prior medication history, drug intolerance, barriers to medication adherence and long-term success at disease control.

In the *JAMA Internal Medicine* study, Anderson and his colleagues used national VA and Medicare data to examine the clinical outcomes of 4,056 veterans with hypertension who were hospitalized between January 2011 and December 2013 for common, non-[cardiac conditions](#)

that typically do not require intensified hypertension treatment. The patients were equally split between those discharged home from the hospital on intensified antihypertensives and those who were not.

At 30 days after discharge, veterans on blood pressure medication had a significantly higher risk for readmission to the hospital than patients who did not receive additional antihypertensives—21.4 percent (434 of 2,028 patients who received antihypertensives) vs. 17.7 percent (358 patients who did not)—and of experiencing medication-related serious adverse events, such as falls, fainting and [acute kidney injury](#), at 4.5 percent (91 patients) vs. 3.1 percent (62 patients).

The study found no reduction in blood pressure or readmission to the hospital for cardiovascular conditions within a year after discharge among patients who received intensified antihypertensives compared to those who did not, at 13.8 percent (280 patients) vs. 11.9 percent (242 patients).

"The goal of starting patients on new blood pressure medications is to reduce their long-term risk of heart attacks, heart failure and strokes, but our finding suggests the right time to start these medications is not when patients are hospitalized for other conditions," said senior author Michael Steinman, MD, a UCSF professor of geriatrics and clinician in the geriatrics clinic and inpatient general medicine service at the San Francisco VA Medical Center. "It is possible that we observed no benefit to these medications because patients stopped the intensified medications after returning home due to the side effects, overtreatment or because their outpatient doctors felt they were not indicated."

The authors recommend that hospital clinicians review patients' prior blood pressure and [medication](#) records, as well as communicate elevated inpatient blood pressure readings to patients' outpatient providers for further management following discharge, rather than simply prescribing

more blood pressure medications.

Anderson cautioned that the findings do not apply to people admitted to the hospital for heart conditions, in which changing blood pressure medications may be beneficial. They also may not apply to younger or healthier populations than those in the VA study.

"Our study was focused on [blood pressure](#), but medications for other chronic conditions may also be adjusted during hospitalization with uncertain outcomes," Anderson said.

The researchers currently are exploring how diabetes medications are impacted by hospitalization and the long-term outcomes associated with those decisions.

**More information:** *JAMA Internal Medicine* (2019).  
<http://https://10.1001/jamainternmed.2019.3007>

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