

Assessment of Hypertension and Consistency of Blood Pressure Control in a Primary Care Clinic of a Safety Net Hospital



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Abstract

Introduction: Hypertension is a powerful risk factor for fatal and nonfatal cardiovascular disease events and several lines of evidence support that these events are less in patients in whom on-treatment blood pressure (BP) is reduced $<140/90$ mm Hg. Nationally, in 2007-8, 69% of people with treated hypertension had BP at the target for control. However, analysis of BP control using mean BP over multiple times does not provide a complete picture of BP control, because BP may be in control at one visit and not in control at the next visit. We conducted a study to assess the BP control and consistency of blood pressure control in a primary care clinic of a safety net hospital that serves a vulnerable population and also to identify predictors of inconsistent BP control.

Methods: A retrospective chart review of established patients with hypertension was conducted in a primary care clinic at John Stroger Hospital of Cook County. Patients were selected using a random sampling method over two weeks and demographic, clinical and laboratory data was collected. An established primary care patient was defined as one who had 5 or more visits to the primary care clinic in the last 3 years. A diagnosis of hypertension was based upon the physician's problem list. BP control was defined as $<140/90$ mmHg at the last visit. Consistent control was defined as BP $<140/90$ on 4

or 5 of the last 5 visits. Stage 2 HTN was defined as BP $>160/100$. The primary outcome measure was proportion with controlled and consistent BP. Using the definition of consistent BP control; subjects were divided into two groups: those with consistent BP and those with inconsistent BP control. The distribution of clinical predictors was compared between the two groups with chi square test. Independent predictors were identified using multivariate logistic regression. **Results:** Of the 258 charts, 150 met inclusion criteria. The mean age was 63 (23-90 years); 58% were women, 69% were African American. The most common comorbidities were dyslipidemia (79%) and diabetes (57%). 55% had controlled BP at the last visit and 43% had consistent control of BP. Among those with controlled BP at the last visit, 68% had consistent control. Among those with elevated BP at the last visit, only 18% had consistent control. Independent predictors of inconsistent BP control were African American race, Chronic Kidney Disease (CKD) and having visited a primary care physician less than 9 times in the last 3 years. After adjustment for age and sex, African American (OR 3.06; 95% CI 1.38-6.77), patients with CKD (OR 2.66; 95% CI 1.27-5.57) and number of visits to primary care clinic <9 (OR 2.58; 95% CI 1.11-5.98) were significantly associated with inconsistent BP control.

Conclusion: Among a largely minority population of hypertensive patients with regular access to primary care

services and multiple co-morbidities we found deficits in control of BP. Just over half had controlled BP at the last visit, less than half had consistent control of their BP. We also noted that African American, patients with CKD and patients with fewer visits are more likely to have inconsistent BP control. To approach national rates of control of blood pressure and improve the consistency of control, we recommend a clinic based quality improvement effort and a better understanding of differences in hypertension control among minority groups.

Biography

Anthi Katsouli completed her MD from National and Kapodistrian University of Athens and then moved to USA where she completed her residency in Internal Medicine at University of Pittsburgh Medical Center.

After her residency, she proceeded with fellowship in Preventive Medicine at John Stroger Hospital of Cook County and earned her Master of Public Health from University of Illinois at Chicago. Her main area of interest is Preventive Cardiology and she is focusing on Prevalence of Major Cardiovascular Risk Factors and Cardiovascular Disease among vulnerable population of a safety net hospital. Currently, she is an Assistant Professor of Medicine at Loyola University Medical Center and serves as an Internal Medicine ward attending.

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