Children's Hospital of Philadelphia PolicyLab

Diagnosis and Medication Treatment of Pediatric Hypertension: A Retrospective Cohort Study

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BACKGROUND AND OBJECTIVES: Pediatric hypertension predisposes children to adult hypertension and early markers of cardiovascular disease. No large-scale studies have examined diagnosis and initial medication management of pediatric hypertension and prehypertension. The objective of this study was to evaluate diagnosis and initial medication management of pediatric hypertension and prehypertension in primary care.

METHODS: Retrospective cohort study aggregating electronic health record data on >1.2 million pediatric patients from 196 ambulatory clinics across 27 states. Demographic, diagnosis, blood pressure (BP), height, weight, and medication prescription data extracted. Main outcome measures include proportion of pediatric patients with ?3 visits with abnormal BPs, documented hypertension and prehypertension diagnoses, and prescribed antihypertensive medications. Marginal standardization via logistic regression produced adjusted diagnosis rates.

RESULTS: Three hundred ninety-eight thousand seventy-nine patients, ages 3 to 18, had ?3 visits with BP measurements (48.9% girls, 58.6% <10 years old). Of these, 3.3% met criteria for hypertension and 10.1% for prehypertension. Among practices with ?50 eligible patients, 2813 of 12 138 patients with hypertension (23.2%; 95% confidence interval, 18.2%–28.2%) and 3990 of 38 874 prehypertensive patients (10.2%; 95% confidence interval, 8.2%–12.2%) were diagnosed. Age, weight, height, sex, and number and magnitude of abnormal BPs were associated with diagnosis rates. Of 2813 diagnosed, persistently hypertensive patients, 158 (5.6%) were prescribed antihypertensive medication within 12 months of diagnosis (angiotensin-converting enzyme inhibitors/angiotensin receptive blockers [35%], diuretics [22%], calcium channel blockers [17%], and ?-blockers [10%]).

CONCLUSIONS: Hypertension and prehypertension were infrequently diagnosed among pediatric patients. Guidelines for diagnosis and initial medication management of abnormal BP in pediatric patients are not routinely followed.

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