Impact of a Quality Improvement Initiative for Adrenal Incidentalomas upon Primary Aldosteronism Screening

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Objectives

Primary aldosteronism (PA) is a correctable cause of hypertension, but most patients meeting screening criteria do not undergo testing. We implemented a quality improvement (QI) program focused on adrenal incidentalomas (AIs) and examined changes in PA screening among patients with hypertension and newly diagnosed AI.

Methods

This initiative targeted primary care providers (PCPs) following detection of an AI. It incorporated messages to PCPs, access to an evaluation algorithm, and radiology report templates specifying follow-up needs. Data were prospectively collected for patients with AIs from 2018-2019 and compared to a historical cohort diagnosed in 2016. The primary outcome was the proportion of patients ordered for screening labs for PA. Outcomes were assessed using Fisher's exact test and logistic regression.

Results

The QI cohort had 349 patients, versus 251 in the historical cohort. Patients without hypertension, without a PCP in our system, or with severe life-limiting comorbidities were excluded, leaving 82 QI cohort patients and 89 historical cohort patients.

Baseline characteristics showed statistical differences in insurance status, initial imaging setting (e.g. inpatient, outpatient, emergency department), image type, and imaging indication. There were no differences in group demographics, comorbid conditions, use of IV contrast, mass laterality, largest mass dimension, or number of masses.

Table 1. Potential workup steps by cohort

Workup Step	Historical Cohort (n=89)	QI Cohort (n=82)	P value
Follow-up recommended in radiology report, n (%)	34 (38.2%)	29 (35.4%)	0.752
PCP follow-up visit, n (%)	67 (75.3%)	43 (52.4%)	0.002
Referred to specialist, n (%)	12 (13.5%)	10 (12.2%)	0.824
Follow-up imaging ordered, n (%)	16 (18.0%)	22 (26.8%)	0.199
Screening ARR* ordered by PCP, n (%)	**4 (4.5%)**	**19 (23.2%)**	**<0.001**
Screening ARR completed (any orderer), n (%)	9 (10.1%)	19 (23.3%)	0.024
ARR value ≥ 20, n (%)	2 (2.2%)	3 (3.7%)	0.672

*ARR = aldosterone-renin ratio

Results

After adjusting for insurance status and initial imaging setting, patients in the QI cohort had 5.9 times higher odds (95%CI 1.8 – 24.5) of being ordered for screening compared to those in the historical cohort.

Table 2. Final diagnoses, if available

Final Diagnosis	Number (%)
Non-functional adenoma	55 (78.6%)
Metastasis	8 (11.4%)
Biochemically functional mass	5 (7.1%)
Adrenocortical carcinoma	0 (0.0%)
Other	2 (2.9%)
Total	**70 (100%)**

Conclusions

Patients with hypertension who had an AI identified during a QI initiative had higher odds of PCP-initiated screening for PA. Although screening increased dramatically, screening rates remained low overall.