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Identifying opportunities to improve early referral for hematuria with concomitant proteinuria in a large health system

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Background

Hematuria is a common problem encountered in primary care though limited data exists on appropriate referral patterns. The purpose of this study was to examine opportunities to improve workup of hematuria for early diagnosis of important associated conditions such as glomerulonephritis and urologic malignancy.

Methods

The study cohort included adults 18+ years of age, with hematuria (defined as 1+ or greater blood on dipstick), who received care at Geisinger, a large regional health system in Central and Northeast PA from 01/01/2022 to 9/30/2022. The proportion of patients with hematuria who were referred to nephrology or urology within 3 months were examined. Characteristics of patients who were referred vs. not referred were compared using descriptive statistics and non-parametric tests as appropriate.

Results

Out of 507,423 patients who had at least 1 outpatient visit during the study period, 63,895 underwent urinalysis; of these, 8,790 patients had 1+ or greater hematuria. After excluding 3,102 who had a prior nephrology or urology appointment, 419 of 5,688 (7.4%) had a nephrology or urology appointment within 3 months and 483 (8.5%) had a nephrology or urology appointment within 6 months. Completion of nephrology or urology appointments at 3 months was higher for patients with greater hematuria (1+: 5.7% vs. 2+: 9.9%; $p < 0.001$) and for patients with concomitant proteinuria (no proteinuria: 5.1%, trace: 8.3%, 1+: 7.7%, 2+: 7.3%, 3+: 9.3%; $p = 0.01$). In a sensitivity analysis excluding patients with positive nitrite and leukocyte esterase (surrogate for possible infection risk), rates of completed nephrology or urology appointments were similarly low (3 months: 234/2,968 [7.9%]; 6 months: 265/2,968 [8.9%]; $p < 0.001$ for chi-square test). Other factors associated with higher completed nephrology or urology

appointments included male sex, White race, having a Geisinger primary care provider, and having concomitant proteinuria.

Conclusion

In a regional health system, we identify low referral rates to nephrology and urology after hematuria diagnosis, even among patients with concomitant proteinuria. Future studies are needed to determine optimal strategies to improve follow-up and management of hematuria.

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Category

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