

# Evaluation of Awareness about Hematuria among Non-Urologist Doctors

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## ABSTRACT

**Objective:** To evaluate the attitude, general level of knowledge and practices regarding the common urological problems in non urological doctors

**Methodology:** A cross-sectional study was carried out in multiple tertiary care hospitals and private clinics between August 2018 to December 2019. All the general physicians having their private practice or those working in Agha Khan University Hospital, Civil Hospital Karachi, Liaquat National Hospital, Jinnah postgraduate hospital, and Ziauddin Hospital were included in the study. General physicians belonging to the urology department were excluded from the study.

**Results:** Most of the doctors could easily diagnose gross hematuria (55.17%) but microscopic hematuria was missed by many (34.96%). Risk assessment of bladder carcinoma like smoking, any chemical exposure, previous history of hematuria etc was not addressed by the majority of gynecologists (69.03%), physicians (52.54%) as well as internists (32.72%). While most physicians assess gross hematuria by ultrasound, microscopic hematuria is not further investigated by a significant percentage of physicians. During survey it was revealed that most of the physicians use antibiotics as the the mainstay of treatment for hematuria without considering the urine c/s and cytology.

**Conclusion:** A trend of overuse of antibiotics and reluctance of primary care doctors in referring the patient to the specified doctor was seen. It was noted that there is a lack of understanding and knowledge among non urological doctors regarding a common sign.

**Keywords:** awareness, hematuria, general physician, urology

## INTRODUCTION

Hematuria, in routine tests of urine, can be of significant importance in urological disease. Hematuria identified as gross or microscopic can point to serious underlying disease related to the field of urology. Hematuria is defined as the presence of RBC (red blood cell) in the specimen of urine, 2 or more red blood cells (RBC) per high power field (rbc/hpf) on 2 separate urine specimens.<sup>1</sup>

Frank hematuria is labeled when 500ml of urine is mixed with only half a ml of blood resulting in change in color of urine depending on the nature of urine acidity or alkalinity giving a smoky or red color to urine. On the other hand asymptomatic invisible to naked eye microscopic hematuria is identified on urine dipsticks signifying leak of blood in urine from any part of kidney and its tract- ureters, bladder, prostate and urethra.<sup>2</sup> The prevalence of microscopic haematuria on urinalysis is between 0.18% to 37%.<sup>3</sup>

In most, no specific reason is found but in 5% of the population cancer of prostate, bladder or kidney is found with microscopic hematuria and around 40% in patients with frank or visible hematuria.<sup>4</sup> On the other hand benign factors also causing hematuria like strenuous exercise, instrumentation of urethra or vagina, menstrual cycle or sexual activity.<sup>1</sup> There are certain substance that cause discoloration of urine and can mimic hematuria giving a false positive result on urine dipstick. Drugs like sulphonamides, rifampicin, phenytoin, quinine and phenazopyridine are some of the drugs causing reddish brown color urine.

Hematuria is therefore an almost entirely early and significant finding and warning for urinary tract disease. Similar amount of bleeding in the gastrointestinal tract can go unnoticed without any significant effect. The general practitioners encountered patients with hematuria around 4 per 1000 patients that accounts for overall 6% of new patients seen by a urologist.<sup>5,6</sup> Lamentably, the seriousness of hematuria presenting as a symptom is not acknowledged either by doctor or patients themselves in many cases. Significant number of the patients with hematuria are seen by the non-urologist doctors specially general physician internal physician and gynecologists. To evaluate whether these patients are properly investigated by them we performed a questionnaire based survey evaluating the attitude, general level of knowledge and practices regarding the common urological problems in non urological doctors.

## MATERIAL AND METHODS

A cross-sectional study was carried out in multiple tertiary care hospitals and private clinics between August 2018 to December 2019. A non-probability convenience sampling technique was employed to recruit participants in the study. All the general physicians having their private practice or those working in Agha Khan University Hospital, Civil Hospital Karachi, Liaquat National Hospital, Jinnah postgraduate hospital, and Ziauddin Hospital were included in the study. General physicians belonging to the urology department were excluded from the study. Ethical approval was obtained from the institutional review board of Ziauddin University Hospital.

All non urological doctors including gynecology and obstetrician, general physician and internist were eligible to participate. The survey, based on multiple choice questions, explained the need of this study was dictated by the researcher in a face-to-face interview. Prior to the interview, informed verbal and written consent was obtained from the participants. The identity of doctors who responded were kept anonymous and no record was kept to track the non-responders. This study was done to ascertain the management of hematuria by non urological doctors in different settings. A well-defined proforma was developed which included questions about gross as well as microscopic hematuria, their knowledge and understanding in labeling the patient with hematuria and further workup required for analysis of urological problems.

All the responses were recorded in SPSS software for analysis. All categorical variables were presented as frequency and percentage and all continuous variables were presented as mean and standard deviation.

## RESULTS

As shown in table 1, 250 doctors including consultants, residents, medical officers and house officers were given the survey questionnaire, out of which 233 were included in the study, 81 internist, 74 general physician and 78 were gynae and obs. In this study 50.84% general physicians were practicing for more than 10 years and mostly were not working in tertiary care settings, while the internist and gynecologist had experience of less than 10 years and they were working in tertiary care settings. In their daily practice they come across 5-15 patients per month, but only 17.12% internist, 16.27% physicians and 10.84% gynecologist find it significant to take a detailed history and examination in patients with hematuria.

Table 1: Participant Characteristics

SPECIALITY	n (%)		
General Physician	74 (31.7%)		
Obstetrics and gynaecology	78 (33.5%)		
Internist	81 (34.8%)		
WORKING IN TERTIARY HOSPITAL			
General Physicians	29 (39.66%)		
Obstetrics and gynaecology	78 (100%)		
Internists	81 (100%)		
WORKING EXPERIENCE	<5yrs	5-10yrs	>10yrs
General Physicians	8.47%	40.67%	2.58%
Obstetrics and gynaecology	87%	10.32%	50.84%
Internists	83.90%	40.67%	3.97%
HEMATURIA	<5pts	5-15pts	>15pts
General Physicians	28 (37.96%)	26 (34.91%)	20 (27.11%)
Obstetrics and gynaecology	23 (29.35%)	43 (55.8%)	12 (14.83%)
Internists	47 (57.49%)	27 (33.33%)	7 (9.17%)

Most of the doctors could easily diagnose gross hematuria (55.17%) but microscopic hematuria was missed by many(34.96%). Risk assessment of bladder carcinoma like smoking , any chemical exposure , previous history of hematuria etc was not addressed by the majority of gynecologists (69.03%), physicians(52.54%) as well as internists (32.72%).

While most physicians assess gross hematuria by ultrasound, microscopic hematuria is not further investigated by a significant percentage of physicians. During survey it was revealed that most of the physicians use antibiotics as the the mainstay of treatment for hematuria without considering the urine c/s and cytology. ( Table 2)

Table 2: Response of Participants

Departments Questions	General physician		Gynae & Obs		Internist	
Label gross hematuria	58.64	35.93	87.09	11.29	92.04	7.9
Label the microscopic hematuria	25.76	63.38	19.67	63.22	30.88	68.19
Assess the risk factors	13.22	52.54	8.06	69.03	22.01	32.72
Urine analysis in hematuric patients	68.47	31.53	82.90	17.09	95.71	4.28
Further investigation	75.30	21.69	93.22	6.77	95.71	4.28
Type of urine analysis(microscopy)	89.15	10.84	90	7.09	91.43	7.95
Repeat urine analysis	8	79.32	4.19	83.54	7.03	86.53
Urine culture in microscopic hematuria	5.76	85.76	13.22	66.77	8.86	79.81
Urine cytology in microscopic hematuria	1.01	97	1.61	93.87	4.26	93.88
Imaging studies in microscopic hematuria	4.06	90.84	6.12	82.58	15.90	72.78
Prescribe antibiotics with microscopic hematuria	95.93	4.07	94.83	5.16	83.18	16.81
Referral to urologist with microscopic hematuria	32	82.03	30.96	60.32	32.11	65.13
Urine culture in macroscopic hematuria	27.79	64.74	28.06	58.06	34.55	59.93
Urine cytology in macroscopic hematuria	4.05	92.22	0.96	91.29	3.05	94.8
Imaging studies in macroscopic hematuria	88.47	7.79	84.83	5.16	83.79	4.28
Prescribe antibiotics with macroscopic hematuria	97.96	2.03	95.80	4.19	85.93	14.06
Referral to urologist with macroscopic hematuria	43.05	20	71.29	11.61	74.31	6.726

**DISCUSSION**

Hematuria presents as a prevalent symptom of abnormal genitourinary tract. In some patients its presents as symptom but occasionally it is detected incidentally on investigations. The underlying cause related to this finding is necessary to uncover. Visible RBCs in urine are described as macroscopic hematuria whereas RBC detected directly on microscopy is termed as microscopic hematuria(6). Gross hematuria is a worrisome sign according to the consensus of the experts which require further assessment of the patient through investigation(7-11). There is strong data showing association of these sign with malignancies related to lower urinary tract system. As a matter of fact hematuria is one of the initial presentations in 85% of bladder and 40% of renal cancers.(9). According to AUA and CUA guidelines, patient with suspected malignancies or in fact with hematuria should be evaluated with complete physical examination along with the imaging including ultrasound KUB followed by CT or IVP as required as well as urine culture and cytology followed by cystoscopy(7,11)

This study was conducted to evaluate the response of non urological doctors regarding hematuria and its management. It was observed that there is significant reluctant behavior among internist, gynecologist and general physicians in referring the patients with significant microscopic and gross hematuria to urologist for further evaluation. Classification of hematuria can be done as nephrological /glomerular diseases or urological disease which include trauma, pyelonephritis, uti, tumor, stones, benign prostatic enlargement or meatal ulcer(3,4,5,6). Excessive exercise can also lead to microscopic hematuria without any significant underlying causes(7).

The prevalence of hematuria ranges from 0.18% to 38.7%(14-25). But evaluation of hematuria fails in 8-61% of patients(20-24). No specific reason was found in many patients(26) but 5% of the population with microscopic and 40% with macroscopic hematuria are diagnosed with cancer related to kidney, bladder, prostate or testes(26). Some studies have show

an increased incidence of hematuria with relation to females and age but others have shown no significant results.(27)

The early evaluation in patients with hematuria during the workup and early detection of cancer results in 92% patients with localized and curable disease(15). The AUA, CUA and EUA guideline has recommended imaging of upper urinary tract, urine cytology and cystoscopy in all adult patients, in absence of any evidence of glomerular disease or other external factors(5). The CUA guidelines are slightly change then others where all patients above the age of 40years with risk factors or any age patient with risk factor has to be evaluate with immediate cytology and cystoscopy along with imaging of upper urinary tract.(3)

Our main goal of this study was to evaluate the understanding of non urological doctors about gross and microscopic hematuria and to our surprise only 30-35% of doctors were agreed to refer the patient with microscopic hematuria to urologist while 71-74% doctors were referring the patient to urologist with gross hematuria. When compared to other studies conducted in the United States, the rate is approximately similar to our study where 77% and 69% of primary care physicians respond to refer patients having gross hematuria to urology for further evaluation (12). In another study in Quebec 63.7% respondents elected in favour of referring to a urologist.(13). The conclusion extracted from different studies is that there is a lack of knowledge and understanding regarding hematuria, one of the possibilities for the delayed referral can be related to how non urological doctors quantify and define significant hematuria be it microscopic or macroscopic. The AUA and CUA guidelines are opted to follow by the doctors or not is question. Mostly doctor would agree that the upper limit regarding the normal RBC in urine is 2RBS/HPF(3,4). In one of the survey it showed that 50% of the GP's consider >10 RBC/HPF significant while 42.1% knew the answer correctly >3RBC/HPF. The education, awareness and knowledge related to hematuria should extend from basic concepts as it is necessary for the treatment and accurate diagnosis. In the same analysis the physician were asked about the screening protocol as well as the routine check-up, where the responders around 50% would want to

perform routine screening on all man and woman regardless of age and risk factors, while the guideline does not currently recommended routine screening protocols. The relax attitude and reluctance to refer the patient can increase the burden of disease by delaying the process of appropriate treatment required for the patient.

### CONCLUSION

Urine analysis was selected as the first investigation of choice in patients with urinary symptoms but urine culture has no significance before prescribing antibiotics to patients. A trend of overuse of antibiotics and reluctance of primary care doctors in referring the patient to the specified doctor was seen. It was noted that there is a lack of understanding and knowledge among non urological doctors regarding a common sign. Education and awareness steps should be taken at primary care level to prevent any serious conditions delaying further treatment, and earlier intervention should be offered.

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