

**An early description of Hematuria in Medieval Persia: a letter to the editor**Ali Aminian<sup>1</sup>, Ehsan Zaboli<sup>2</sup>, Seyde Sedighe Yousefi<sup>3</sup>

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**Abstract**

Hematuria is one of the most important clinical manifestations, dating back in antiquity to more than a thousand years ago. In this paper, we tried to give a brief history of hematuria in Persian medicine and compare its similarities with Modern medicine. The importance of this issue is to give a better cognition of hematuria in the Persian medicine viewpoint in comparison with Modern medicine and also to understand the antiquity of hematuria, using simple and accessible therapies, provide a background for further studies in this field, and ultimately help improve Modern medicine in order to have a better treatment package, along with managing the costs.

**Keywords:** Urine; Hematuria; Modern medicine; Persian medicine

**Abbreviations / Acronyms:**

**CAM:** Complementary and Alternative Medicine; **GU:** Genitourinary Tract; **PM:** Persian Medicine; **UA:** Urine Analysis

**1. Introduction****Dear Editor,**

In the past centuries, urine as one of the most prominent waste body-fluids, has been extensively used by physicians for a precise diagnosis and prognosis (1). Persian medicine (PM) as one of the ancient branches of complementary and alternative medicine (CAM) and its outstanding medical scholars, especially in the golden age of Islam (9<sup>th</sup> to 12<sup>th</sup> century AD), have emphasized the importance of urine analysis (UA) (2, 3). PM scholars count on urine as a whole body scanner, due to the capability of circulation between different organs. The urine, in PM resources, was nominated with different names such as the “*bowl*” (meaning waste body fluid), “*Tafsere*” (meaning commentator on body and organ tracts’ condition), and “*Dali*” (Meaning that which expresses the cause or sign), due to its importance (1, 4). In PM manuscripts, in order to perform a standard urine analysis, the patient should collect all his/her morning urine volume accumulated in the bladder, in a clean, transparent, bladder-shaped glass container named “*Gharoore*” (Phial, which is also an accepted synonym for urine in PM), according to the belief of PM scholars that a more accurate diagnosis would arise if the total morning urine volume could form in a bottle in the same way that it was formed in the bladder. Then the collected urine specimen was analyzed within six hours of collection by the physician in seven features including color, consistency, purity and turbidity, sediment, scarcity and abundance, odor, and froth (*Zabad*) (5, 6). Meanwhile, a change in the urine color to red in the form of

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“Hematuria” is one of the most key issues in interpreting the results of urine analysis, which has always been under consideration of the Persian medicine experts (1). In Modern medicine, hematuria is defined as the presence of blood in the urine, which may be detected frequently in periodic screening tests or may be visible as frank blood (7). In PM resources, hematuria known as the term "Bowl-al-Dam" (*Khoon-Raftan*), means blood voiding, slightly or instantly and bulky, which is different from another term named as "Bowl-e-Damavi" (Bloody urine), means urine contaminated with some amount of blood (8). Also in PM, similar to Modern medicine, hematuria is one of the most important signs and symptoms of the genitourinary tract (GU), which plays an important role in prognosis and diagnosis of diseases within or outside the GU system (1, 7). As in Modern medicine, the causes of hematuria are separately mentioned in Persian medicine, and are compared in Table 1, which shows similarities between the two.

**Table. 1** Comparison of the causes of hematuria between Persian medicine and Modern medicine

Causes of hematuria in Persian medicine (2, 3, 5, 8)	Causes of hematuria in modern medicine (9)
Corrosion, along with vaginal discharge in the urinary tract ( <i>Taakkol-e- Oroogh va Bowl ba Rim</i> )	Urinary tract infection (UTI)
Poor kidney performance ( <i>Zaaf-e Gorde</i> )	Renal failure
Heavy lifting, falling down, blunt trauma ( <i>Bardashtan-e chizi Geran, Saghate, Jahidan az jaa, Zarbeh</i> )	Exercise-induced hematuria and blunt trauma caused hematuria
Consumption of foods or drugs with hot temperament ( <i>Mizaj</i> ), ( <i>Tanavol-e- Aghziye tond ya Advieh garm</i> )	Food or drug-related hematuria
Hard nodes swelling	Lymphoma
Excessive blood concentration ( <i>Emtela e-Dam</i> )	Hematologic abnormalities
Liver malfunction ( <i>Zaaf-e kabed</i> )	Liver failure
Renal stone	Urinary calculi
GU tissue tight swelling ( <i>Owram-e-Solb</i> )	GU tumors
Wounding of the kidney	Instrumentation or surgery trauma, penetrating trauma caused hematuria
Irritation and stretching of the urinary tract due to cold and dry distemperament ( <i>Su-e-Mizaj Sard-o- Khoshk va Tamaddod</i> )	Urethral stricture
Irritation and stretching of the urinary tract due to cold and dry distemperament ( <i>Su-e-Mizaj Sard-o-Khohsk va Tamaddod</i> )	Ureteropelvic junction obstruction
Dilatation or splitting of kidney vessels ( <i>Goshad Shodan ya Shekaftan Oroogh</i> )	Vessels aneurysm or Malformation

In Persian Medicine, the most important causes of hematuria include poor kidney performance, liver malfunction, and dilatation or splitting of the GU tract vessels for a variety of reasons such as heavy lifting, blunt trauma, falling-down and corrosive infections. Less important causes of hematuria also include renal stones, tight swellings of GU tissue (*Owram-e-Solb*), dilatation, varicosity or splitting of GU vessels, dryness and fragility of GU tract mucous membrane due to cold and dry distemperament (*Su-e-Mizaj*) and consuming excessive foods or drugs with hot and dry temperament (*Mizaj*) like spearmint (*Mentha spicata*) (2, 3, 5, 8). According to PM resources, treatments also based on a therapeutic package which respectively consist of lifestyle modification including nutritional diet, drug prescription and ultimately, manual maneuvers such as cupping, venesection, and surgery. Fortifying the kidney and liver with tonic medications and eventually cupping the pubic area, are some of the most common treatments of controlling hematuria in PM (2, 3, 5, 8). Understanding the antiquity of hematuria and attending to the similarities between Persian medicine and Modern medicine in diagnosis and treatments, may finally help the health system in using simple and accessible therapies, provide a background for further studies in this field, and ultimately aid better management, and treatment costs.

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#### Conflict of Interest:

There is no conflict of interest to be declared.

**Authors' contributions:**

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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