

## Gross hematuria associated with oral isotretinoin treatment in a young patient with acne vulgaris

Akne vulgarisli genç bir hastada oral izotretinoin tedavisiyle ilişkili gros hematüri

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### Özet

**Amaç:** İdrarda kırmızı kan hücrelerinin varlığı olarak tanımlanan hematüri, glomerulus, interstisyum veya böbrek damarlarından kaynaklanabilir, mikroskobik veya makroskopik olarak görülebilir. Bu olguda, akne vulgaris nedeniyle oral izotretinoin tedavisinden iki ay sonra gros hematüri gelişen 17 yaşında bir erkek hastayı sunuyoruz. Üriner sistemin radyolojik ve sistoskopik değerlendirmesi normaldi. Dermatoloji konsültasyonu sonrası izotretinoin tedavisi kesildi. İlacın kesilmesinden sonra iki hafta içerisinde gros hematüri ile birlikte dizüri ortadan kayboldu ve tam idrar analizi sonuçları normaldi.

**Anahtar Kelimeler:** akne vulgaris, yan etki, brüt hematüri, isotretinoin

### Abstract

Hematuria is defined as the presence of red blood cells in urine, which may be observed microscopically or grossly. Hematuria may originate from any site throughout the urinary tract, glomerulus, interstitium, or the renal vasculature. Here, we present the case of a 17-year-old boy who developed terminal hematuria after two months of treatment with isotretinoin for acne vulgaris. Radiological and cystoscopic assessment of the urinary system were normal. Isotretinoin treatment was discontinued after dermatology consultation. After two weeks, terminal hematuria disappeared along with dysuria, and the urine sample showed normal findings.

**Keywords:** Acne vulgaris, adverse effect, gross hematuria, isotretinoin

All research was performed in accordance with relevant guidelines/regulations, and informed consent was obtained from all participants.

## INTRODUCTION

Hematuria is defined as the presence of red blood cells in urine, which may be observed microscopically or grossly. Hematuria may originate from any site throughout the urinary tract, glomerulus, interstitium, or renal vasculature (1). There are few case reports of acute kidney injury and nephrotic syndrome (2) or terminal hematuria following isotretinoin treatment in healthy individuals (3).

## CASE REPORT

Here, we present a 17 year-old boy who developed terminal hematuria after two months of treatment with isotretinoin for acne vulgaris. A boy with acne vulgaris was admitted to our dermatology outpatient clinic. The patient was started on isotretinoin treatment at a dose of 20 mg/day (0.25 mg/kg/day) of isotretinoin treatment. After two months, he visited our urology clinic complaining of dysuria and gross hematuria. He reported visible blood in the distal urethra at the end of urination, and the color of the blood was bright red. The patient claimed not to consume any food (e.g., rhubarb, paprika, blueberries) or drugs (e.g., rifampin, nitrofurantoin, phenazopyridine, metronidazole) that may cause red pigmenturia. On physical examination, body length was 1.80 m, weight 70.0 kg, heart rate 90/min, respiratory rate 15/min, blood pressure 110/70 mmHg, respectively. Other physical examination results were unremarkable. Renal function parameters were measured as follows: blood urea nitrogen level, 33 mg/dL; serum creatinine 0.73 mg/dL. Complete blood count (CBC), full chemistry panel, anti-glomerular basement membrane (anti-GBM), anti-double-stranded DNA (anti-dsDNA), anti-neutrophil cytoplasmic antibody (ANCA), antinuclear antibody (ANA), and complement (C3c and C4) were all normal.

In the urine sample, the urine specific gravity was 1020, protein was not present, and 5 red blood cells were seen on microscopy. The urine culture was sterile. Ultrasonography and computed tomography findings of the urinary system were normal. In the cystoscopic assessment of the patient, the urethra, prostate, bladder, and bilateral ureteric orifices were normal. Clear

urine was noted to flow periodically through both ureteral openings. The urine cytology results were normal. Isotretinoin treatment was stopped after dermatology consultation. After two weeks, terminal hematuria disappeared along with dysuria, and the urine sample showed normal findings.

## DISCUSSION

Urine blood may originate from any location along the urinary tract. As a result, gross or microscopic hematuria may be caused by a diversity of underlying conditions. When a patient is admitted for gross hematuria, the clinician should ask for specific details that offer hints to the reason for the hematuria. The description of the urine should be specific, and urine color can provide an idea of the severity and source of bleeding. Patients with vascular bleeding or lower urinary tract bleeding often define urine as bright red or cherry colored (1).

Isotretinoin (13-cis RA) is one of the most prominent and commonly used drugs for the treatment of acne vulgaris. Isotretinoin has a wide range of therapeutic effects (2). However, adverse reactions have also been reported with this agent. Common side effects include teratogenicity, mucocutaneous side effects such as cheilitis, dry skin and mucous membranes, epistaxis, desquamation, photosensitivity, pruritus, hypertriglyceridemia, and an increased frequency of depression or suicide (4).

Yesikaya et al. examined the frequency of hematuria in acne vulgaris patients during isotretinoin treatment (5). Eighty-eight subjects were included in the study group and 52 subjects were included in the control group. In the treatment group, 17% of the patients had hematuria at least once during the study period, and in the control group, the hematuria ratio was 7.7%. No significant differences between the two groups was found. Hematuria was most frequently observed at the end of the second month of treatment. The authors attributed this finding to hematuria, especially at the beginning of the treatment (5).

Our literature search reported the effects of oral isotretinoin on terminal gross hematuria and dysuria

in only one case (3). The authors concluded that gross hematuria is probably due to the xerotic mucosal side effects of isotretinoin; similarly, drugs are known to affect the nasal mucosa, causing nasal bleeding (3).

This is the second case report documenting the impact of isotretinoin on terminal gross hematuria and dysuria. Although patients are already informed about the well-known side effects of isotretinoin, such as cheilitis, dry skin, epistaxis, desquamation, photosensitivity, pruritus, hypertriglyceridemia, and an increased frequency of depression, hematuria can be ignored. We should keep in mind that while prescribing isotretinoin, hematuria may be present, and patients should be informed about it.

#### **Conflict of Interest**

The authors declare to have no conflicts of interest.

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**Author Contribution:** AE and HIC was responsible for the literature search and preparation of the manuscript. YTA and DG analysed the data, revised the draft manuscript. HIC, final confirmation. AE and MP examined the patient. The cystoscopic assessment was performed by AE. All authors read and approved the final manuscript.

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