Int. j. adv. multidisc. res. stud. 2026; 6(3):494-495

Received: 26-04-2026
Accepted: 06-05-2026

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Letter to the Editor

The Diagnosis of Rhabdomyolysis should not be based Solely on Changes in Urine Colour Over Time

Josef Finsterer
Department of Neurology, Neurology & Neurophysiology Centre, Vienna, Austria

DOI: https://doi.org/10.62225/2583049X.2026.6.3.6285
Corresponding Author: **Josef Finsterer**

Letter to the Editor

We read with interest the article by Kashiura *et al*. about a 24-year-old man with rhabdomyolysis and a maximum serum creatine kinase (CK) level of 158,158 U/L, whose urine color changed from initially wine red to later tea brown [1]. After hemodialysis and symptomatic treatment, the patient made a full recovery within 10 days [1]. The study is interesting, but some uncertainties still need to be clarified.

The first point is that urine discoloration depends not only on the oxidation status of myoglobin, but also on several other factors. Urine color can also depend on a person's hydration status, diet, concomitant medications, and comorbidities [2]. Beetroot, for example, can cause reddish urine, and blueberries and asparagus can change the color to pink or red. Vitamins B and C turn urine light yellow. Dark urine occurs with some antibiotics, infections, or certain painkillers. Hematuria can cause urine to turn pink, red, or brown. Severe dehydration, consumption of carrots, food coloring, phenazopyridine, laxatives, or rifampicin can cause urine to turn orange. Unless these influencing factors are taken into account, it is not possible to be certain that changes in urine color over time in the index patient are exclusively due to the oxidation status of myoglobin.

The second point is that rhabdomyolysis should not be diagnosed based on urine color alone, but rather on medical history, clinical examination, blood levels of CK, myoglobin, aldolase, LDH, GOT, and GPT, urine parameters, and imaging studies [3]. The most common symptoms besides myoglobinuria are myalgia, muscle weakness, and swelling.

The third point is that patients who have experienced and survived rhabdomyolysis should undergo thorough examinations after the event for subclinical neuromuscular disorders, susceptibility to malignant hyperthermia, or previous unobserved or unrecognized trauma, including child abuse [4]. Even if, on the surface, it may appear that rhabdomyolysis was triggered by a specific substance, other possible additional triggers should still be considered and ruled out.

The fourth point is that the individual and family history of the index patient is not sufficiently mentioned [1]. Of particular interest is whether the index patient has previously had mild manifestations of a neuromuscular disorder, including easy fatigability, exercise intolerance, discoloration of urine after physical exertion, spontaneous or exercise-induced muscle cramps, or malignant hyperthermia-like reactions during general anesthesia.

The fifth point is that the drug believed to be responsible for rhabdomyolysis in the index patient should be reported. This is relevant because physicians should be aware of the trigger to prevent them from administering it to other patients who are susceptible to rhabdomyolysis. Was it an illegal drug, alcohol, a medication, or a poison taken unintentionally or with suicidal intent?

Declarations
Ethical Approval: Not applicable.

Consent to Participation: Not applicable.

Consent for Publication: Not applicable.

Funding: None received.

Availability of Data and Material: All data are available from the corresponding author.

Completing Interests: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contribution: JF was responsible for the design and conception, discussed available data with coauthors, wrote the first draft, and gave final approval. SM: contributed to literature search, discussion, correction, and final approval.

Acknowledgements: None.

Keywords: Rhabdomyolysis, Urine Color, Creatine-Kinase, Hemodialysis, Myoglobin

References
1. Kashiura M, Moriya T. Wine-red to tea-brown urine in rhabdomyolysis. Am J Med, Nov 1, 2025:S0002-9343(25)00761-2. Doi: 10.1016/j.amjmed.2025.10.034
2. Balen C, Chishti Z, Wilson JW. Diagnostic Approach to Abnormal Urine Colors: Lessons from a Case of Blue-Green Urine. Cureus, Apr 11, 2025; 17(4):e82122. Doi: 10.7759/cureus.82122
3. Voermans NC, Bhai S, Laforet P, Vissing J. Diagnostic workup of rhabdomyolysis: Genetic testing should precede neurophysiological testing. Muscle Nerve, Oct 2024; 70(4):727-730. Doi: 10.1002/mus.28205
4. Nance JR, Mammen AL. Diagnostic evaluation of rhabdomyolysis. Muscle Nerve, Jun 2015; 51(6):793-810. Doi: 10.1002/mus.24606