

# Re: A case of acute renal failure requiring emergency hemodialysis due to hypothermia-associated rhabdomyolysis

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## Abstract

We have read the article titled “A case of acute renal failure requiring emergency hemodialysis due to hypothermia-associated rhabdomyolysis” published by Vural et al. with great interest. Acute renal failure is an uncommon diagnosis in patients presenting to the emergency department, and rhabdomyolysis is a relatively rare cause. The etiologic factors for rhabdomyolysis may be classified as hereditary and acquired (traumatic, and non-traumatic) causes. We thank the authors for this informative and successful case presentation. In this letter we also would like to mention a few important points and present an interesting phenomenon that we encountered.

**Keywords:** Emergency, Hemodialysis, Hypothermia, Rhabdomyolysis, Renal failure

## Dear Editor,

We have read the article titled “A case of acute renal failure requiring emergency hemodialysis due to hypothermia-associated rhabdomyolysis” published by Vural et al. with great interest [1]. Acute renal failure is an uncommon diagnosis in patients presenting to the emergency department, and rhabdomyolysis is a relatively rare cause. The etiologic factors for rhabdomyolysis may be classified as hereditary and acquired (traumatic, and non-traumatic) causes [2]. We thank the authors for this informative and successful case presentation. We also would like to mention a few important points and present an interesting phenomenon that we encountered.

Muszkat et al. [3] investigated mortality-related factors in sixty-seven geriatric hypothermia patients who were similar to Vural et al.'s [1] case. They grouped the patients with and without creatine kinase values greater than 300 U/L. While high creatine kinase value was associated with mortality in the univariate analysis, this relationship could not be demonstrated in the multivariate analysis, which revealed that only coma and high potassium level at admission were associated with mortality. They reported that 26.8% of the patients had a creatine kinase value above 300 U/L, all of which were exposed to trauma. However, Muszkat et al. [3] did not share the patients' mean or median creatine kinase values.

On the other hand, the 2021 Resuscitation Guidelines, published by the European Resuscitation Council, recommend targeted temperature management for adults with return of spontaneous circulation in coma (with any initial rhythm) after out-of-hospital or in-hospital cardiac arrest. They suggest that a constant target temperature of 32°C to 36°C is maintained for at least 24 hours [4]. However, Ciapetti et al. [5] presented a case of therapeutic hypothermia-associated rhabdomyolysis.

We believe that hypothermia-related rhabdomyolysis cases, which Varol et al. [1] defined, will increase even more with the widespread use of therapeutic hypothermia. Emergency medicine specialists and anesthesiologists should be alert for hypothermia-associated rhabdomyolysis, especially in patients who received therapeutic hypothermia.

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## Ethics Committee Approval

The letter is not a study with human participants. There are no experiments on animals. This letter does not contain any studies on human participants or animals performed by the author. There is no identifying information of participants.

## Conflict of Interest

No conflict of interest was declared by the authors.

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## References

1. Vural A, Ekiz M, Günaydn M. A case of acute renal failure requiring emergency hemodialysis due to hypothermia-associated rhabdomyolysis. *J Surg Med.* 2020;4(11):1092-4.
2. Ozdemir S, Ocal O, Aksel G. Evaluation of rhabdomyolysis patients who opted for emergency services. *North Clin Istanb.* 2017;4(3):257-61. Published 2017 Oct 20. doi:10.14744/nci.2017.85619
3. Muszkat M, Durst RM, Ben-Yehuda A. Factors associated with mortality among elderly patients with hypothermia. *Am J Med.* 2002 Aug 15;113(3):234-7. doi: 10.1016/s0002-9343(02)01173-7. PMID: 12208384.
4. Nolan JP, Sandroni C, Böttiger BW, Cariou A, Cronberg T, Friberg H, et al. European Resuscitation Council and European Society of Intensive Care Medicine guidelines 2021: post-resuscitation care. *Intensive Care Med.* 2021 Apr;47(4):369-421. doi: 10.1007/s00134-021-06368-4. Epub 2021 Mar 25. PMID: 33765189; PMCID: PMC7993077.
5. Ciapetti M, di Valvasone S, Spina R, Peris A. Rhabdomyolysis following therapeutic hypothermia after traumatic cardiac arrest. *Resuscitation.* 2011 Apr;82(4):493. doi: 10.1016/j.resuscitation.2010.10.032. Epub 2011 Jan 15. PMID: 21242021.

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