

## Acute kidney injury and rhabdomyolysis due to multiple wasp stings

Sir,

We read the article, "Acute kidney injury and rhabdomyolysis due to multiple wasp stings" by Radhakrishnan *et al.*,<sup>[1]</sup> with great interest. We wish to highlight certain issues in this case.

Various case reports are available describing the development of systemic manifestations following wasp or bee stings in patients with two or three stings in contrast to at least 50 stings as described by the author.<sup>[2]</sup>

The authors have described pigmentary nephropathy as the cause of acute kidney injury (AKI) following rhabdomyolysis. But, this is only one of the various pathophysiologic mechanisms; the other important mechanisms are direct hemeprotein-induced oxidant injury and renal vasoconstriction with diminished renal circulation.<sup>[3]</sup>

Myoglobin levels were not performed in this case due to nonavailability, but serum myoglobin levels are not needed for the diagnosis or management of rhabdomyolysis. Myoglobin is cleared more rapidly than creatinine phosphokinase (CK) and therefore is less sensitive for detecting rhabdomyolysis, especially when presentation is delayed. Also, presence of myoglobin in urine is not specific for the development of AKI; therefore, it is not necessary for routine testing.<sup>[3]</sup>

We presume that the author must have monitored serum calcium levels in this case because, while managing a case of rhabdomyolysis with AKI, monitoring of serum calcium levels is very important. Calcium levels are often low initially, secondary to precipitation of calcium with phosphate in damaged muscles. Subsequently, in the recovery phase of rhabdomyolysis and AKI, calcium mobilization from damaged muscles may subsequently result in hypercalcemia.<sup>[3]</sup>

Forced alkaline diuresis is a common intervention in rhabdomyolysis, but evidence of clinical benefit is lacking. The largest retrospective study of bicarbonate and mannitol therapy versus no use of this therapy in trauma patients did not find any difference between groups in the incidence of renal failure, need for dialysis or mortality. A current consensus statement suggests that sodium bicarbonate or mannitol administration is not necessary and is not superior to normal saline diuresis in increasing urine pH.<sup>[4]</sup> Further, a large dose of bicarbonate may worsen the degree of hypocalcemia, especially if hypovolemia is corrected.

In severe rhabdomyolysis, as was evident in this case, intermittent hemodialysis (IHD) may be needed to address rebound hyperkalemia and acidosis. However, conventional hemodialysis may be relatively inefficient at removal of circulating myoglobin owing to its large molecular weight. Continuous renal replacement therapy modes, such as continuous venovenous hemofiltration (CVVH) or continuous venovenous hemodiafiltration (CVVHDF) have the advantage of aborting these rebound complications, and convection removes these larger molecular weight solutes better than diffusion. The Chinese case series as quoted by the author have also reported similar results. In this series, despite the lack of difference in mortality rates, the patients who began renal replacement therapy with CVVH or CVVHDF with plasma exchange experienced a better and more rapid recovery of kidney function than those initiated with IHD.<sup>[5]</sup>

Also, although controversial, myoglobin clearance could theoretically be augmented using novel super high-flow hemofilters (molecular weight cut-off 30-60 kDa).

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### References

1. Radhakrishnan H. Acute kidney injury and rhabdomyolysis due to multiple wasp stings. *Indian J Crit Care Med* 2014;18:470-2.
2. Akdur O, Can S, Afaen G. Rhabdomyolysis secondary to bee sting.

- Case Rep Emerg Med 2013;2013:258421.
3. Huerta-Alardin AL, Varon J, Marik PE. Bench to bedside review: Rhabdomyolysis-an overview for clinicians. Crit Care 2005;9:158-69.
  4. Brochard L, Abroug F, Brenner M, Broccard AF, Danner RL, Ferrer M, *et al*. An official ATS/ERS/ESCM/SCCM/SRLF statement: Prevention and management of acute renal failure in the ICU patient: An international consensus conference in intensive care medicine. Am J Respir Crit Care Med 2010;181:1128-55.
  5. Zhang L, Yang Y, Tang Y, Zhao Y, Cao Y, Su B, *et al*. Recovery from AKI following multiple wasp stings. A case series. Clin J Am Soc Nephrol 2013;8:1850-6.

He was rehydrated with isotonic

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