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Letter to the Editor

In Reply to Dr Connors et al

To the Editor:

We are very grateful to read the comments from Connors et al[1] on our article.[2] Amatoxin poisoning is a medical emergency characterized by hepatoxicity, encephalopathy, coma, and death. The main amatoxins are α, β, and γ amanitins. They inhibit eukaryotic RNA polymerase II, causing transcriptional arrest and affecting metabolically highly active cells such as hepatocytes and kidney cells. Amanita toxin has a molecular weight of 373 to 990 Da, is water soluble with 0.3 $L \cdot kg^{-1}$ *V*d, is 0.3% protein binding, and has 2.7 to 6.2 $mL \cdot min^{-1} \cdot kg^{-1}$ endogenous clearance.[1]

Although oral decontamination with activated charcoal, intravenous hydration, N-acetyl cysteine, silibinin, and penicillin are recommended in the standard treatment approach, these treatments are often insufficient because symptoms occur after a relatively long and obscure incubation period. Extracorporeal treatments (eg, conventional hemodialysis [HD], continuous renal replacement therapies [CRRT], plasmapheresis, hemoperfusion [HP], extracorporeal albumin dialysis) can be used to remove toxic compounds from the body for supportive treatment in clinical emergency situations when specific treatment is insufficient.[3,4] The lack of well-designed studies on the optimal method of extracorporeal removal of toxic compounds, thus staying at a lower level of evidence, is a major problem.

The more expeditiously toxins are removed, the less chance major toxicity will ensue[5]; thus, extracorporeal treatment may be an efficacious alternative treatment modality. In general, clearance of dialysable substances is lower with CRRT than with conventional HD[6] owing to slower flow rates, and although HD is readily available in most hospitals, many are not capable of delivering CRRT, HP, plasmapheresis, or extracorporeal albumin dialysis. One of the problems with toxin removal by dialyzers and HP devices is that their effects on pharmacokinetic parameters other than simple clearance measurements are largely unknown. This problem can also be experienced in newly developed dialyzers (mid-cutoff, high-cutoff). However, new studies can be instructive.

Owing to the urgent nature of amatoxin poisoning treatment and uncertainties in resolving potential complications, we may never be able to find well-designed, evidence-based studies to guide us. In dealing with these controversial issues, we must continue to use less than ideal evidence and our own experience to guide our decision-making.

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