Oral Abstracts

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NOVEL ANTIDOTES FOR *AMANITA PHALLOIDES* POISONING

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Hepatotoxic mushroom poisoning is reported worldwide and Amanita phalloides (Death Cap) is the key culprit. Toxicity can be severe, prompting admission to intensive care, liver transplantation and death. Despite reasonably prompt diagnosis and a multimodal treatment strategy, mortality from A. phalloides poisoning can be very high in parts of the world, approaching 40%. Further, although liver transplantation may be an option in severe hepatitis, rapid progression of poisoning and critical illness may cause patients to be too unwell to undergo the procedure. Therefore, research for improved methods for the treatment of A. phalloides poisoning, including new antidotes, is an active area of research.

In addition to supportive care, the multi-modal treatment that is commonly used is to decrease absorption (activated charcoal), increases elimination (multiple doses of activated charcoal), block hepatocellular uptake (penicillin, silibinin or silymarin), and reduce inflammation/necrosis (acetylcysteine). Other treatments advocated to enhance elimination include forced diuresis, biliary drainage, haemodialysis or haemoperfusion, but these are rarely applied. The administration of treatments for A. phalloides is time critical, but some treatments may not be readily available.

Based on limitations in the efficacy and/or availability of these treatments, there is ongoing research to develop novel treatments for A. phalloides, and also to optimise current treatment regimens.

Recent research with human hepatocyte cultures has highlighted potentially beneficial effects of medicines that are currently available for other purposes. These include rifampicin (blocks hepatocellular uptake), cyclosporine (blocks hepatocellular uptake) and polymyxin B (competitive antagonist at RNA polymerase II). Further research on the role and effect of these treatments is warranted, but given the severity of A. phalloides poisonings, it may also be reasonable to consider their use in human poisonings on a case-by-case basis. Although a therapeutically equivalent dose needs to be ascertained, pharmacokinetic simulation studies may be informative.
It may also be useful to explore geographical differences in mushroom toxin contents, including discovery of other hepatotoxins. This may guide research into the effect of existing and novel antidotes and treatments based on the region of origin, rather than history and/or clinical syndrome.