

Chapter 8

ELIMINATION METHODS IN THE INTOXICATED PATIENT

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Introduction

As widely known, the human body eliminates various substances acquired from external sources through different mechanisms, such as urinary excretion, fecal elimination, pulmonary exhalation, and secretion expulsion. These processes are crucial for maintaining homeostasis and preventing the accumulation of potentially harmful substances.

In cases of poisoning or exposure to xenobiotics (foreign substances not naturally produced or expected to be present in the body), there are limited methods available to expedite the removal of these substances. One such approach involves enhancing the elimination process to reduce the harmful effects of the xenobiotics. By increasing the rate of elimination through various means, such as enhancing kidney and liver function, accelerating metabolic processes, or promoting enhanced excretion, the body can eliminate the toxic substances more rapidly, minimizing their adverse impact on the individual's health.

It is essential to note that these interventions should be carefully considered and administered by qualified medical professionals to ensure their effectiveness and safety, as accelerating elimination might not be suitable for all toxic substances and can potentially cause harm if not managed properly. Therefore, in cases of poisoning or exposure to harmful substances, seeking immediate medical attention is crucial for appropriate diagnosis and treatment.

In this article, our aim was to present the commonly used elimination-enhancing methods in clinical practice (Table-1).

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2. The Molecular Adsorbents Recirculation System (MARS) is identical to SPAD, but the albumin-enhanced dialysate (with the adsorbed xenobiotics) is itself recycled after going through another dialysis circuit and through both resin and activated charcoal cartridges.
3. The Prometheus system is a device that combines albumin adsorption with high-flux hemodialysis after selective filtration of the albumin fraction through a polysulfone filter.

The MARS system is used as a bridge for transplantation, for hemodynamic stabilization prior to liver transplantation, or as a bridge for spontaneous recovery in patients with acetaminophen-induced liver failure. One report states that acetaminophen is completely removed from the blood (11). During MARS, the acetaminophen value dropped from 40 mcg/mL to 0 mcg/ml. This makes us think that MARS improves acetaminophen clearance (12).

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