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A Comparison between the use and Availability of Antidotes in Iran and United States of America

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We read with great interest Nikfar *et al.* (2011) article entitled "Cost and Utilization Study of Antidotes: An Iranian Experience". In this regard we made a comparison between the use and availability of antidotes in Iran and United States of America (U.S.).

The use of a specific antidote was reported to US Poison Centers approximately 83,000 times in 2009 (Bronstein *et al.*, 2010). While this data is severely limited by underreporting, it does illustrate that the use of expensive, specialized antidotes such as fomepizole is quite commonplace in the U.S. for the treatment of suspected toxic alcohol poisoning. As a comparison, the administration of ethanol for this indication was reported only 96 times. Additionally, the use of digoxin-specific Fab fragments is routine in U.S. hospitals for the treatment of patients with confirmed or suspected digoxin toxicity (DiDomenico *et al.*, 2000). In contrast, fomepizole and digoxin-specific Fab fragments are registered in Iranian Drug List (Nikfar *et al.*, 2005), but they are not present in the market.

The World Health Organization (WHO) guidelines for Poison Control Centers recommend that all antidotes needed within 30 min should be stocked at all hospitals (WHO, 1997). The availability of antidotes has been repeatedly found to be inadequate in hospitals in North America (Howland *et al.*, 1986; Dart *et al.*, 1996, 2000; Juurlink *et al.*, 2001; Wiens *et al.*, 2006). Factors associated with poor antidote stocking included small hospital size, rural location and isolation from other hospitals (Wiens *et al.*, 2006).

Studies in the United Kingdom (Higgins and Evans, 2000) and South Africa (Wium and Hoffman, 2009) have also demonstrated insufficient availability of essential antidotes in a timely fashion, and a lack of awareness of recommended stocking guidelines.

In 2009, an expert consensus panel was formed to make recommendations for stocking of antidotes at US

hospitals. Twenty-four antidotes were recommended for stocking at all hospitals, 12 of which should be available for administration immediately upon patient arrival. An additional 9 antidotes were recommended to be available within one hour of the decision to administer the antidote (Dart *et al.*, 2009).

In contrast, the availability of antidotes in Iran is limited to one or two referral hospitals in each province that are specialized in the management of poisoned patients. In these hospitals, clinical toxicologist or trained clinicians direct the management of poisoned patients. This regionalization of antidote stocks may prevent the misuse or overuse of expensive antidotes by inexperienced clinicians, but it also may result in critical delay of care for patients who present to other hospitals in the region.

To our knowledge, there are no national guidelines for antidote stocking in Iran and the study by Nikfar *et al.* (2011) is the first to examine the availability of antidotes in this country (Nikfar *et al.*, 2011).

The availability and supply of antidotes presents challenges in Iran, as well as in the U.S. We suspect that similar problems may be encountered in other countries.

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