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Can Aminophylline raise the level of consciousness in acute Benzodiazepine toxicity?

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Objectives: Acute poisoning with benzodiazepines is usually associated with loss of consciousness (LOC) and to a lesser extent respiratory depression as its major complications. LOC may lead to aspiration pneumonia and increased morbidity and mortality. Flumazenil, an antidote for acute and pure benzodiazepine poisoning, is usually used for diagnostic purposes but it may also be useful for increasing level of consciousness and reducing the need for tracheal intubation in these patients. However, it is expensive and is not always readily available. This study aims to assess medicinal effect of aminophylline in increasing level of consciousness in patients with acute benzodiazepine poisoning as a substitute for flumazenil.

Methods: Fifty patients with acute and pure benzodiazepine poisoning associated with LOC (GCS<12) were randomly divided into control (25 cases) and intervention groups (25 cases). Patients in the intervention group received a single dose of intravenous aminophylline 5 mg/kg. Control group no intervention? Patients in the two groups were compared in terms of their level of consciousness.

Results: Mean duration of regaining consciousness in the intervention group (72 minutes) was significantly lower than that in the control group (881 minutes) (P=0.001). Alprazolam, chlordiazepoxide, clonazepam, and lorazepam were the most common cause of poisoning. The time to regain consciousness after administration of aminophylline (awaking time) was significantly shorter in the intervention group compared to the control (P<0.01).

Conclusion: This study demonstrated that aminophylline can be used as an alternative to flumazenil to increase level of consciousness in patients with acute benzodiazepine poisoning.