

Flumazenil Drip Effect on Prevention of Complications in Acute Severe Benzodiazepine Toxicity

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BACKGROUND AND OBJECTIVE: Although not potentially life-threatening, benzodiazepine (BNZ) poisoning may accompany complications including aspiration pneumonia, atelectasis, rhabdomyolysis and acute kidney failure especially in elderly. The aim of the current study is to evaluate the efficacy of flumazenil drip in reversal of BNZ toxicity and prevention of complications.

METHODS: In a prospective case-control pilot study, a total of 47 severely BNZ-poisoned patients (in need for intubation and mechanical ventilation) were randomly assigned into two groups of stat dose of flumazenil (500µg; group 1) versus stat dose followed by a drip of at least 200µg/h (group 2). In the second group, the drip dose might be adjusted based on the patient response. Risk of later development of loss of consciousness, aspiration pneumonia, rhabdomyolysis, need for intubation, hospital stay, and final outcome were finally compared between these two groups.

RESULTS: A total of 22 and 25 patients were recruited in the groups 1 and 2, respectively. The patients were similar in terms of gender, on-arrival GCS, and stat dose of flumazenil. Median [IQR] maintenance dose and duration of administration of flumazenil was 415 µg [200,500] and 24 [16,48] hours. Need for ICU admission, development of aspiration pneumonia, and rhabdomyolysis were not statistically significantly different between the groups. The only outcome that significantly differed between the groups was intubation which was significantly less in the second group ($P=0.01$, OR 0.7 95%CI 0.6, 0.9). One case in group 1 died due to pneumosepsis.

CONCLUSIONS: Flumazenil drip can decrease the need for intubation although many patients may still need ICU admission after its administration due to the fluctuating GCS and fear of severe complications. Other complications may occur with similar frequency in those who receive flumazenil drip and those who do not although other prospective studies on more patients are still warranted to clarify this.