Serial monitoring of sedation scores in benzodiazepine overdose

Kyungho Choi, Yeon Young Kyong, Jeng Tak Park

Department of Emergency medicine, Uijengbu St. Mary’s Hospital, The Catholic University of Korea, Korea

Benzodiazepines are frequently prescribed for many diseases and are also most commonly involved in drug overdose. Although most benzodiazepine overdoses are known to be safe and nonfatal without co-ingestions, morbidity or mortality after benzodiazepine overdose is closely related with the duration of unconsciousness or depth of compromised airway. Proper use of flumazenil, a potent antidote of benzodiazepine, seems to accelerate the recovery from the toxicity after benzodiazepine overdose. However, careful attention and repetitive evaluations before and after flumazenil administration may be needed in benzodiazepine overdose because reedation occurs in approximately 30% of total flumazenil-treated cases, which suggests that the risk of aspiration or incidental death after flumazenil administration might be significant without careful monitoring. A 67-year-old woman came to our hospital unconscious 19.5 hours after clonazepam overdose, due to delayed detection. The chest x-ray showed focal segmental atelectasis on the left lung field. Before flumazenil administration, we examined the patient’s airway and assessed the presence of contraindications for flumazenil administration. Next, we briefly evaluated the Ramsay sedation scales (RSSs) and Richmond agitation–sedation scales (RASSs) using, in order, a loud voice, a light glabellar tap, and physical stimuli. Her initial RSS and RASS were 5 and –4, respectively. The RSSs and RASSs were repetitively evaluated before and after flumazenil administration. In conclusion, we successfully managed the comatose patient after clonazepam overdose using sedation score–based applications of flumazenil. Therefore, we suggest that repetitive evaluations conducted before and after the use of flumazenil may be needed in cases of benzodiazepine overdose.