Naloxone Does Not Antagonize Diazepam-induced Sedation

To the Editor: — Results of recent studies indicate that naloxone does not antagonize the anesthetic effects of nitrous oxide or halothane.1-3 It has been suggested that naloxone may reverse the effects of benzodiazepines.4,5 To test this possibility, we have performed a controlled clinical trial which examined the reversibility of diazepam-induced sedation by naloxone. Gastroscopy was performed in 46 healthy patients during sedation with diazepam. No other anesthetic agent was administered during the procedures. Incremental doses of diazepam were given intravenously to obtain sedation sufficient to permit toleration of gastroscopy. The patients breathed spontaneously. The investigation was carried out double-blind and the patients selected at random. At the conclusion of the procedure, 22 patients (Group I) were given naloxone, 0.4 mg, iv, while 24 patients (Group II) received the same volume of isotonic saline solution. In Group I the mean total dose of diazepam was 33.5 mg (range 20–50 mg); in Group II, 35.5 mg (range 20–60 mg). The Mann-Whitney test showed no significant difference between the doses given in the two groups (P > 0.05). The level of consciousness was evaluated by means of a modified Glasgow coma scale,6 where the state of sedation was determined by a point scale given for eye reaction, verbal response and motor response. The total scores were registered at five-minute intervals before and after the administration of naloxone or placebo. All patients were evaluated by the same investigator. The Mann-Whitney test was used to compare the difference between the levels of consciousness in the two groups. Statistical analysis showed no difference (P = 0.02).

It has been reported that the action of benzodiazepines is related to cerebral receptor systems7; thus, it has not been elucidated whether benzodiazepine action involves the release of enkephalin. Despite the case reports of Bell4 and Moss,8 we have not been able to demonstrate an antagonizing action of naloxone during sedation with diazepam.

Kurt Nørregaard Christensen, M.D.
Senior Registrar
Mogens Hüttel, M.D.
Registrar
Department of Anaesthesiology
Aalborg Hospital
9000 Aalborg, Denmark

REFERENCES

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