



Figure 1 Typical records showing the effects before and after of lorazepam (a, b) and diazepam (c) on ventilatory patterns. Vertical bars represent 1 litre.

Ventilatory patterns in surgical patients premedicated with lorazepam or diazepam

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The benzodiazepines are widely used in anxiety states including dental phobia (Healy, Robinson & Vickers, 1970), and to allay fear and apprehension prior to surgery. However, respiratory side-effects have been observed.

Dalen, Evans, Banas, Brooks, Paraskos & Dexter (1969) reported ventilatory depression after the intravenous injection of diazepam (5-10 mg) in fifteen patients before cardiac catheterization. Denaut, Yernault & De Coster (1975) reported periodic breathing in two out of twenty patients with chronic obstructive lung disease after an i.v. injection of lorazepam (2.5 mg). Cormack, Milledge & Hanning (1977) also reported periodic breathing in one normal subject after an i.m. injection of lorazepam (4 mg). Any such alteration in respiratory control may be a potential hazard in the use of such drugs.

Using the trans-thoracic impedance method of Boyd (1976) we have recorded the effects on ventilatory pattern of intravenous lorazepam or diazepam administered slowly in premedication doses. Continuous recordings were made before and after lorazepam (2 mg) in ten awake patients and after 10 mg diazepam in a second group of ten patients. All patients were without any apparent respiratory or cardiovascular disease and were receiving no other drugs. The group give diazepam found it difficult to stay awake.

Periodic breathing was recorded in nine out of ten patients following lorazepam but no periodic breathing was observed in the group receiving diazepam whether they were awake or asleep except in one patient in whom partial airway obstruction occurred. Typical records made before and after the administration of either drug are shown in the figure.

These results indicate that despite the rather similar structures of the drugs the incidence of periodic breathing is likely to be higher with lorazepam than with diazepam when given intravenously for premedication of recumbent patients awaiting general surgery.

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