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Citation	The Medical Research Conference'99, Department of Medicine, The University of Hong Kong, Queen Mary Hospital, Hong Kong, 30-31 January 1999, v. 21 n. Suppl 2, p. 15
Issued Date	1999
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HYPOTENSIVE ACTION OF DIAZEPAM IN RELATION TO AGE

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Introduction: Diazepam is one of the most widely used tranquilizers and is regarded as safe. However, previous studies showed that both its beneficial effects (sedation, anxiolysis) and side effects (drowsiness, disorientation) are more marked in the elderly, which may have a pharmacodynamic and a pharmacokinetic basis. Transient hypotension is a rare side effect of diazepam. In this study we therefore set out to evaluate the effect of age on transient hypotension induced by diazepam.

Methods: The study was conducted as part of an ongoing pharmacokinetic investigation. After obtaining written, informed consent, patients pending abdominal surgery were recruited (n=20, age range 30-73 years) and diazepam was infused over 30 minutes (min) according to a standard protocol. Patients weighing ≥ 50 kg and < 50 kg received 10 and 7.5 mg diazepam respectively diluted in 100 ml of saline (using an IMED infusion pump). Supine blood pressure (BP) and heart rate were measured automatically prior to the infusion and at intervals thereafter for 90 min. The patients' demographic details and the results of liver and renal function tests were also recorded. The study was approved by the Faculty Ethics Committee. The data were analyzed by Student's paired t test and regression analysis.

Results: In the whole group mean (\pm SE) BP prior to infusion was 126/71(\pm 4) mmHg. Corresponding values at 15, 30, 45, 60, 75 and 90 minutes after starting the infusion were 125/70(\pm 4), 118*/68(\pm 3), 118*/67(\pm 3), 117*/67*(\pm 4), 120/69(\pm 4) and 122/70(\pm 4) respectively. The two oldest patients (aged 72 & 73 years) experienced the most marked and prolonged reduction in diastolic BP. However, there was no statistically significance correlation between the reduction in systolic or diastolic BP and age, though there was such a trend for systolic BP at 60 min ($r = 0.36$, $p = 0.12$) and diastolic BP at 30 min ($r = 0.39$, $p = 0.09$).

Conclusions: There was a transient hypotensive effect after single dose infusions of diazepam. Inability to demonstrate a definite association between hypotensive effect and age could be because the patient number was small and BP was measured supine.

[* = $p < 0.05$ compared to baseline value]

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Audit of IV access sites in Medical Ward Patients

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Nosocomial sepsis, fever and malfunction associated with peripheral IV lines (infusion cannulae and ventflow devices) remain a cause of concern in medical wards. A suitably informed team of nurses supervised by the Division of Clinical Pharmacology conducted a 7 day audit in 6 general medical wards in December 1997. All patients in these designated wards with peripheral IV access lines were inspected daily (for site inflammation) and relevant details were recorded. In all, 238/710 (34%) of the patients had such lines (119 were ventflow devices). Bed days associated with ventflow devices and IV cannulae were 328/1493 (22%) and 338/1493 (23%) respectively. The proportion of patients and bed days with ventflow devices associated inflammation were 39/119 (34%) and 39/328 (12%) and the corresponding proportions for IV cannulae were 40/119 (34%) and 40/338 (12%). For ventflow devices and IV cannulae taken together, different wards encountered quite different inflammation rates. These ranged from 23% - 41% of the patients with IV lines and 9-16% of the corresponding bed days. Where 'site inflammation' occurred, it ensued within 48 hours in 70% of the instances. Apparently, adherence to a strict <72 hour rule for leaving lines in situ could not avoid site inflammation in most instances. These findings reveal an unacceptably high rate of inflammation (x 3 that of the previous year's audit). They warrant an urgent need to train appropriate medical and nursing staff to adhere to suitable guidelines, and an aseptic (no-touch) technique to insert, care for and maintain such access sites.