Recovery from sedation in day units

Sir,—There can be little doubt that day units offer advantages to both hospitals and patients for minor surgical and investigative procedures. But there is a danger that pursuit of these advantages could erode standards to dangerous levels. The safety and ease of the progress of the patient through day units depends on the medical and administrative practices implemented in each unit.

In the case of patients who attend the day unit of this hospital for gastroscopy, the endoscopist administers an intravenous benzodiazepine as sedation. After the procedure, patients rest in a quiet room and are allowed to leave when they feel adequately recovered. All patients are advised that they will not be fit to drive and should arrange to be accompanied home by a responsible adult.

Recently we monitored a group of consecutive patients attending our day unit. Over five weeks 85 patients attended for upper gastrointestinal endoscopy, 40 women and 45 men, aged 17 to 84 years. We noted the times of their arrival, of the administration of the sedative, and of their discharge, and the dose of the benzodiazepine they had received. We found that the time from the administration of the intravenous sedative to the time the patient left the unit was unexpectedly short (mean 1 hour 23 minutes; range 0.5-30 minutes). For the patients given diazepam there was no correlation between dose and time to discharge (r=0.009, p>0.05), but there was a significant correlation for those given midazolam (r=0.41, p<0.02). For the whole sample (n=85), however, there was a stronger negative correlation between time to discharge and the time spent in the unit before the procedure (mean 2 hours, range 45 minutes-3 hours 45 minutes (r=-0.3, p<0.02). It seems overall that the time spent in the unit before the procedure is the best predictor of recovery time.

As psychologists concerned in the assessment of impairment after centrally acting drugs we find these rapid departures startling. We would be most interested in comments from your readers.

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'Curea breath test for Helicobacter pylori infection

Sir,—We read with interest the recent paper by Dill et al on the 'Evaluation of 'Curea breath test in the detection of Helicobacter pylori and in monitoring the effect of tri-potassium dicitratobismuthate in non-ulcer dyspepsia' (Gut 1990; 31: 1237-41). In this study the authors used 250 mg of 'Curea per patient.

We have recently conducted a study comparing the 'C and 'Curea breath tests in Helicobacter pylori positive patients both before and at least one month after treatment. We found 100% agreement between the two tests and obtained just as good discrimination between positive and negative patients with 125 mg (n=10) and 75 mg (n=13) of 'Curea as with 250 mg (n=9). We agree with Logan et al. that excellent results can be obtained with 100 mg of 'Curea per test but think that a further saving without jeopardising accuracy can be achieved by administering only 75 mg of the stable isotope per patient. Others have had similar experience.

Since the 'Curea test was first described by Graham et al in 1987 the analysis of 'CO in breath samples collected during the test has proved to be a major drawback to using the test in routine clinical practice. It is necessary to use isotope ratio mass spectrometry (IRMS) to determine the 'C enrichment in 'CO, because 'C measurements of less than 1 part per 1000 need to be determined. Before the actual 'C measurements take place, 'CO, must be purified from other breath gases. This has been achieved by a cryogenic purification system linked to the IRMS. Breath analysis on such systems is slow (about 20 minutes per sample) and costly (0.5-1 of liquid nitrogen per sample) and requires a continuous dual inlet IRMS for the final 'C measurement.

In our own study we have used an automated 'C breath analyser (ABCA) utilising fast and simple chromatographic purification and a single inlet mass spectrometer. The ABCA consists of a Roboprep-G purification system linked to a Tracemass stable isotope analyser (Europa Scientific, Crewe, UK). Briefly, each breath sample is automatically injected into the purification unit by a continuous flow of helium. Water vapour is removed by a magnesium perchlorate trap. A gas chromatograph (75°C) then separates 'CO from N2 and O2, before the 'CO is swept by the helium gas into the stable isotope analyser. Breath samples were measured against a reference gas (5% CO2, balance N2) which had a delta 'C value of -41-60 per 1000 (0.02%).

The 'C enrichments of breath samples were expressed as a deviation from the patient's own baseline (0 min) delta 'C value.

This technique for analysing 'C breath samples proved to be easy, fast (5 minutes analytical cycle time), and low consumable cost (GC grade helium).

Patients fasted overnight before the test. A nutrient dense drink (20 g Calogen LCT emulsion, 15 g Maxipro HPBW powder, 40 g Caloreen glucose polymer, 15 g Crusha syrup, and 300 ml water) was taken followed by the 'Curea in 50 ml water. Breath samples were collected at 0, 20, 40, and 60 minutes after drinking the 'Curea solution by using an alveolar breath collection bag. At each breath collection 2 x 20 ml aliquots of the breath were drawn from the bag to fill two septum capped evacuated tubes. These samples were then sent to Europa Scientific for analysis of 'C enrich.

The 'C enrichments were determined by a method performed within 48 hours of the 'Curea breath test and the personnel at Europa Scientific had no knowledge of the result of the former when making their own analysis.

All pretreatment 'Curea positive patients (positive by the 'Curea breath test) showed a change of >5/1000 in the mean of the 40 and 60 minute breath samples (n=16) regardless of whether the patient had initially received 250, 125, or 75 mg of 'Curea. In contrast, the one month (or greater) post-successful eradica-
tion breath tests of previously 'Curea patients (n=16) showed a change of <5/1000, regardless of the dose of 'Curea given.

It has been our previous experience with the 'Curea breath test that within as little as 24-48 hours of completing a course of colloidal bismuth subcitrate the results will consistently be negative. We have therefore conducted a study to explore this possibility further. After obtaining the breath tests were performed within 24 hours of stopping treatment. 'Curea, however, recurred in all but one patient within one week of stopping treatment. 'Curea was therefore available in our hospital during the month after giving the test. We suggest that assessing the 'Curea state more than 24 hours and less than 28 days after treatment has little or no clinical relevance.

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