

Blood glucose and propofol in outpatient anaesthesia

J Metrot, J-M Vigreux

Department of Anaesthesiology, Hôpital Broussais, 96 Rue Didot, 75014 Paris, France

The authors report on their experience with propofol during outpatient anaesthesia for gastrointestinal endoscopy (colonoscopy), where patients recovering from anaesthesia with propofol spontaneously expressed an intense feeling of hunger. The prospective randomized trial involved two homogeneous groups of 60 patients and showed that this was not due to blood glucose variations but rather to central and perhaps limbic effects, similar to states of excitation or inhibition sometimes noted. This effect should not be considered as an adverse reaction to propofol.

Key words: Outpatient, propofol, 'hunger pangs', central disinhibition

Propofol is currently the first-line reference drug in numerous areas of anaesthesiology, including that of outpatient anaesthesia. Among other reasons, this is due to its short duration of action, excellent quality of recovery from anaesthesia, and rapid return of normal ability to cope with daily life.

Since the introduction of propofol into our protocols for outpatient anaesthesia during non-surgical gastrointestinal endoscopy, it was noted that patients experienced an intense feeling of hunger without any objective clinical signs of hypoglycaemia during recovery. Moreover, the carbohydrate metabolism of these patients was not defective. On the basis of this observation, we felt it would be appropriate to carry out a prospective, randomized study of the blood glucose variation induced by propofol in a well-defined category of patients who had to undergo total colonoscopy. The study was undertaken after approval by the Ethics Committee of our hospital.

Equipment and methods

Sixty patients were randomized into two groups, GI and GII (Table 1). Obese or undernourished patients or those presenting with, or having presented with, defective carbohydrate metabolism were excluded.

The two groups, GI and GII, were strictly identical in terms of ASA, height and weight, and distribution according to sex and age. Preparation for colonoscopy

Table 1. Comparison of characteristics of patients in GI and GII

	Group I (n = 30)	Group II (n = 30)
ASA	1.5 ± 0.68	1.6 ± 0.55
Height (m)	1.65 ± 0.08	1.64 ± 0.08
Weight (kg)	59.06 ± 9.5	61.4 ± 9.4

and the duration of the fasting period before the examination were similar for the 60 patients.

Statistical comparison of blood glucose levels was made by analysis of variance.

Anaesthetic technique

Anaesthesia was induced intravenously with spontaneous ventilation of air/oxygen (50 : 50) using a mask. Infusion of a 0.9% solution of NaCl was used and patients were monitored by electrocardiogram for heart rate; systolic, diastolic and mean blood pressure; and pulsed oxygen saturation. Group I received midazolam and alfentanil, whereas Group II received propofol and alfentanil, see Table 2.

Study of blood glucose variation

Blood glucose was measured for all 60 patients at the following times: T0 = Reference blood glucose upon admission; T1 = Blood glucose after induction of anaesthesia; T2 = Blood glucose at the end of colonoscopy, upon arrival in the postoperative recovery room, see Table 3. There was no statistically significant difference in the blood glucose within a given group at T0, T1 and

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Correspondence and reprint requests to: Dr J Metrot, Department of Anaesthesiology, Hôpital Broussais, 96 Rue Didot, 75014 Paris, France

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Table 2. Anaesthetic agents used

<i>Group I</i> (n = 30)	
Midazolam	0.06–0.1 mg kg ⁻¹
Alfentanil	15–20 µg kg ⁻¹
<i>Group II</i> (n = 30)	
Propofol	2–3 mg kg ⁻¹
Alfentanil	15–20 µg kg ⁻¹

Table 3. Blood glucose variation between GI and GII (mean ± standard deviation)

	<i>Group I</i> (n = 30)	<i>Group II</i> (n = 30)
T0	4.93 ± 0.67 mmol l ⁻¹	4.89 ± 0.94 mmol l ⁻¹
T1	4.73 ± 1 mmol l ⁻¹	5.02 ± 0.38 mmol l ⁻¹
T2	4.95 ± 0.65 mmol l ⁻¹	4.94 ± 0.51 mmol l ⁻¹
Δ T0–T1	1440 min	1440 min
Δ T1–T2	103 ± 43 min	91 ± 12 min

T2, or between groups GI and GII. At the end of the procedure, no hypoglycemia was detected.

Conclusion

The intense feeling of hunger expressed by patients anaesthetized with propofol for a non-surgical procedure does not appear to be attributable to hypoglycaemia, however transient. We feel it reasonable to assume that metabolism is not involved in this reaction: it is most probably central in origin during the immediate post-anaesthetic phase, in the same way as certain states of euphoria and disinhibition (especially sexual disinhibition) already described. These 'hunger pangs' are easily appeased by the absorption of slow sugar and of coffee

or tea (with or without sugar) and do not reappear in the immediate (within 24 or 36 hours) postanaesthesia period.

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Erratum

Twersky RS. To be an outpatient, or not to be — selecting the right patients for ambulatory surgery. *Ambulatory Surg* 1993; **1**: 5–14

The caption to Figure 1 should have read as follows.

Hospital-based surgeries; inpatient versus outpatient (source: American Hospital Association Survey 1980–1990).

We apologize for any inconvenience caused.