

New techniques for conscious sedation

Gavin NC Kenny, BSc (Hons), MB ChB, MD, FRCA, FANZCA

* Glasgow University. Department of Anaesthesia.

AIM

Conscious sedation allows patients to undergo procedures which they would otherwise be unable to tolerate. The sedation must not contribute any morbidity or mortality to the procedure and ideally should be safe when used by surgeons and physicians as well as anaesthetists.

DRUGS

Bolus administrations of intravenous benzodiazepines are used commonly to provide sedation, but patients vary widely in their requirement for sedation, both in terms of pharmacokinetic and pharmacodynamic variability and also in the level of stress they experience. Propofol has been used successfully to provide sedation and the pharmacokinetic properties and the recovery characteristics of propofol have encouraged its use for sedation.

SEDATION WITH TARGET-CONTROLLED INFUSIONS

Satisfactory sedation has been reported with anaesthetist-controlled TCI propofol in patients undergoing upper gastrointestinal endoscopy and orthopaedic procedures under regional blockade.

PATIENT-CONTROLLED SEDATION

PCA is a well-recognised technique for pain control and patient-controlled sedation (PCS) has been described for

sedation. The patient uses a device similar to a PCA system to self-administer single doses of a sedative. Most of the studies comparing patient-controlled sedation with propofol or midazolam, have reported that propofol produced a more rapid onset of sedation with faster return to normal following the procedure.

PATIENT-MAINTAINED SEDATION (PMS)

PMS allows the patient to control the target concentration of propofol using a button push. Studies of this technique suggest that it provides rapid, safe and effective relief of anxiety. The aim is to provide a system for sedation which cannot permit the patient to overdose and so would not require the presence of a medical anaesthesiologist. Recent studies have demonstrated the feasibility of using the degradation in patient reaction time as a control function. The use of reaction time to control the target concentration of propofol may allow such a device to be produced and increase the margin of safety during sedation.

CONCLUSIONS

With more procedures being undertaken using minimally invasive surgical techniques, there will be increased requirements for conscious sedation. The techniques we employ must be safe and efficacious and may be directed towards allowing the patient to participate more in the drug delivery. PMS propofol may fulfill this requirement.