

Thiopentone sedation for sedation of acutely agitated, violent, intoxicated patients: Evaluation of 2 cases

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Abstract Two cases of violent, drug-intoxicated patients who presented considerable problems in management, and were resistant to standard sedative agents, are described. Effective and safe sedation, without the need for full anaesthesia and endotracheal intubation, was achieved using titrated doses of thiopentone. The merits of selecting this agent in these circumstances are discussed.

Keywords Emergency · Sedation · Thiopentone

Patient 1

An adult male was brought to our department by ambulance with police in attendance. He had been destroying furniture, shouting and swearing. The patient was well known to the local psychiatric services and our emergency department (ED). A history of frequent attendances with mania, and violent and manipulative behaviour, was well documented. He was given the following sedation over the next 20 min: Haloperidol 15 mg IV, Midazolam 15 mg IV and Chlorpromazine 100 mg po. He continued to be verbally abusive and difficult to contain in the open environment of our department. Over the next 2–3 h he received Midazolam 20 mg IV, Clonazepam 2 mg PO and Haloperidol 15 mg IV. The patient remained restless, agitated and prone to violent verbal outbursts.

The patient was assessed by a consultant psychiatrist at 0800 hours. A collateral history of deteriorating mental

state over the preceding few weeks with insomnia, elevated mood, irritability and increasing alcohol and tetrahydrocannabinol (THC) use was obtained from the patient's mother. Pressure of speech, elevated mood and irritability were noted. Significant tolerance to benzodiazepines was noted from previous attendances. He was referred to the nearest secure psychiatric facility (in Perth). Haloperidol 20 mg and Clonazepam 2 mg were then given orally. Discussion with the duty ED consultant (the author) then occurred regarding transport and sedation options.

It was decided that deep sedation or general anaesthesia were the only safe options to allow the safe air transport, thus necessitating skilled medical escort. The only suitable agency qualified and able to perform the inter-hospital transfer in Western Australia is the Royal Flying Doctor Service. Although the distance to Perth is relatively small (190 km), no road transport with skilled medical escort is available.

A rapid sequence induction of anaesthesia was deemed too hazardous to contemplate before attempting the less invasive option of deep sedation. Thiopentone was selected as the most suitable sedative. The patient had no known exposure to barbiturates, and the ED consultant was familiar with its use.

The patient was moved to a fully equipped resuscitation bay. Secure IV access was confirmed, and a 1-l bag of 0.9% saline was running in freely. Supplemental oxygen was delivered. An experienced nurse and a resident medical officer were present, in addition to two security personnel. Thiopentone was administered in 25-mg increments to a total of 125 mg, where the patient attained a state of unconsciousness but was still breathing spontaneously and supporting his own airway. He was then put into a left lateral "recovery" position. A further two doses of 25 mg IV Thiopentone were given over the next 2 h, during which

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the patient was observed to be “sleeping” and “cooperative”. There was no observed oxygen desaturation, hypotension or airway loss. The patient was escorted to the local airstrip, a 7-min road trip by ambulance, by an experienced paramedic crew. No intervention was required and on arrival the patient was given a further 50 mg IV Thiopentone and loaded into the aircraft. The short flight to Perth was uneventful.

Patient 2

An ambulance was called to an agitated adult male with a past history of IV substance abuse walking along a rural road. He had taken a “hand full” of Diazepam tablets and an unknown quantity of Promethazine tablets with the hope that he would lose consciousness and be struck by a car. The uncooperative male was transferred by road with police officer escort. He became increasingly aggressive and was given Diazepam (total of 10 mg) and Midazolam (total of 5 mg) with little effect. The police officer proceeded to apply handcuffs.

On arrival at Bunbury ED he was promptly assessed by the ED consultant (WJvR) who noted a patent airway, tachypnoea with clear equal air entry and normal oxygen saturation, good peripheral perfusion, temperature 37.4°C, blood sugar level 5.4 mmol/l and ECG unremarkable apart from the sinus tachycardia. The patient was agitated and uncooperative, struggling against the physical restraints and not responding verbally in any coherent manner. A further unsuccessful effort was made to achieve chemical restraint using titrated IV Midazolam (24 mg total in ED), Diazepam (5 mg total in ED) and Haloperidol (15 mg total in ED).

The ED consultant then proceeded with titrated doses of IV Thiopentone; 100 mg was administered slowly followed by a further 100 mg dose. The patient became progressively more sedated allowing the medical and nursing staff to provide monitored care focussed on supportive measures. At no stage after the administration of Thiopentone was there any compromise of the patient’s vital functions. Once the situation was controlled staff could provide safe ongoing care whilst feeling less threatened. The overall improvement in the function of the ED was also noted. The patient remained calm and was reviewed 8 h later by the duty psychiatrist.

Discussion

EDs are increasingly faced with the problem of agitated, intoxicated and confused patients [1, 2]. Many abuse a combination of substances and have tolerance to the

standard sedatives available to ED practitioners, and with which they are familiar. Frequent dosing, with little or no short-lived effects, results in ongoing risks to staff and patient. Many modern substance abusers are naive to barbiturates, but may be highly tolerant of benzodiazepines [3]. When emergency physicians are selecting a sedative agent for an acutely agitated and violent patient they need to consider various factors including safety [4].

Thiopentone was selected in these two cases as the most suitable sedative. The patients had no known exposure to barbiturates, the drug was readily available, and its use and side effect profile were well known to the ED consultant.

Barbiturates were frequently used historically as sedatives, induction agents, and for conscious sedation, then became less popular with the advent of agents with shorter duration of action and less lethality in overdose [5, 6]. As a result, doctors and patients are less familiar with them. This leaves a population naive to barbiturates and gives a more predictable clinical effect for clinicians. Thiopentone is familiar to emergency physicians as an agent for the rapid sequence induction of anaesthesia in emergency situations. Catastrophic cardiovascular decompensation, and airway loss, can occur in emergency situations and practitioners need to be aware of potential complications, and how to deal with them effectively. Caution should be exercised by those practitioners unfamiliar with the drug, and standard recommendations regarding sedation practice should be followed, in particular the immediate availability of advanced resuscitation skills.

Conclusion

These cases highlight the stepwise increase in sedative interventions, to allow safe ED management and a safe inter-hospital transfer. It was clear that conventional sedative options had been unsuccessful. Barbiturate naivety amongst the modern substance-abusing population may aid emergency physicians to select thiopentone as a suitable sedative agent in this situation. Safe sedative practices must be observed, including skilled medical availability in a suitable resuscitation environment. Further evaluation of drugs used for indications other than the sedation of agitated ED patients is warranted, as suggested by Knott and Isbister in a recent editorial [7].

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