Table 3

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesse s
Suder PA *et al*, 1995, Denmark	52 patients with secondary traumatic shoulder dislocation patients IAL (26) *v* IVAS (26)	PRCT	Result of reduction Mean time Subjective evaluation Pain	No significant difference (p=0.19) 16.1 + 3.5 *v* 4.7 + 2.9 (p=0.001) Insignificant difference (p=0.19) Insignificant difference (p=0.08)	Small size
Matthews DE and Roberts T, 1995, USA	30 consecutive patients presenting to the emergency department with acute anterior shoulder dislocation IAL (15) *v* IVAS (15)	PRCT	Time to reduction. Difficulty of reduction. Subjective pain Complications Time in emergency department	No statistically significant difference No complications Significant reduction in the IAL group	Small size Varied reduction techniques Statistical methods not described
Kosnik J *et al*, 1999, USA	49 patients presenting to the emergency department with acute anterior shoulder dislocation IAL (29) *v* IVAS (20)	PRCT	Success rate Ease of reduction (SD) Pain score (SD)	20/20 for IVAS *v* 24/29 for IAL (p=0.07) 3.32 (2.36) for IVAS *v* 4.45 (2.46) for IAL (p=0.12) 3.95 (2.39) for IVAS *v* 4.90 (2.34) for IAL (p=0.18)	Small sample size Varied physician experience Varied reduction techniques

▸ CLINICAL BOTTOM LINE

Where intravenous analgesia and sedation needs to be avoided, intra-articular lidocaine should be the analgesic method of choice for reducing shoulder dislocations.

Suder PA, Mikkelsen JB, Hougaard K, *et al*. Reduction of traumatic secondary shoulder dislocations with lidocaine. *Arch Orthop Trauma Surg* 1995;**114**:233–6.
Matthews DE, Roberts T. Intraarticular lidocaine versus intravenous analgesic for reduction of acute anterior shoulder dislocations. A prospective randomized study. *Am J Sports Med* 1995;**23**:54–8.
Kosnik J, Shamsa F, Raphael E, *et al*. Anesthetic methods for reduction of acute shoulder dislocations: a prospective randomized study comparing intraarticular lidocaine with intravenous analgesia and sedation. *Am J Emerg Med* 1999;**17**:566–70.

Propofol for resistant status epilepticus

Report by Simon Carley, *Specialist Registrar*

Checked by Ian Crawford, *Research Fellow*

Abstract

A short cut review was carried out to establish whether propofol is effective at stopping fitting in resistant status epilepticus. Altogether 24 papers were found using the reported search, of which six presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results, and study weaknesses of these best papers are tabulated. A clinical bottom line is stated.

Clinical scenario

A 20 year old man presents to the emergency department in status epilepticus. Initial treatment with benzodiazepines and phenytoin is unsuccessful. He is intubated and ventilated using thiopentone and suxamethonium. Ten minutes later he starts to fit again. The anaesthetist suggests that propofol may help but you have heard that propofol can increase EEG activity. You wonder whether this is an appropriate drug to use.

Three part question

In [patients in resistant status epilepticus] is [propofol] effective at [reducing seizure activity]?

Search strategy

Medline 1966–12/01 using the OVID interface. [exp propofol OR propofol.mp OR diprivan.mp] AND [exp status epilepticus OR status epilepticus.mp] LIMIT to human, English, abstracts.

Search outcome

Altogether 24 papers of which six included data on patients relevant to the clinical question (table 4).

Table 4

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Mackenzie SJ *et al* 1990 Scotland	2 patients with RSE. Standard treatment unsuccesful	Case series	Observation of seizure activity	Propofol stopped seizure activity clinically and on EEG	Case series
Campostrini R *et al* 1991 Italy	4 patients on ICU with RSE	Case series	Observation of seizure activity	Propofol infusion stopped apparent seizure activity	Case series
Borgeat A *et al* 1994 Switzerland	Adult OD patient. Propofol was given to suppress EEG activity	Case report	Observation of EEG activity	Propofol appeared to suppress EEG seizure activity	Case report
Kuisma M and Roine RO 1995 Finland	8 adult patients in prehospital care with RSE. All patients were intubated and ventilated. All received propofol boluses of 100–200 mg.	Case series	Success at terminating seizures	All patients stopped RSE with propofol	Case series. Not clear if patients intubated before or after propofol usage. This could be a result of the use of propofol.
Harrison AM *et al* 1998 USA	9/12 child with hereditary fructose intolerance in RSE	Case report	Observation	RSE stopped on infusion of 3 mg/kg propofol	Case report Rare underlying disorder
Stecker MM *et al* 1998 USA	16 Adult patients with RSE. All patients intubated. Thiopentone (8) *v* propofol (8) 1mg/kg over 5 min, repeated if needed.	Open trial	Time to seizure termination (elimination of EEG and clinical seizures) Success at terminating seizures	Thiopentone 123 min vs propofol 2.6 min (p=0.002) Thiopentone 82% *v* propofol 63% (NS)	Open trial. Some of the propofol patients part of another trial. others identified retrospectively. Very small trial

Comment(s)

The evidence for propofol in RSE is weak. It is based on case series and small open label trials. However, there is some theoretical basis for the use of propofol in RSE and the observations made in the studies presented are encouraging. Further work is clearly needed but in refractory status epilepticus resistant to conventional treatment it would not be unreasonable to try propofol.

▸CLINICAL BOTTOM LINE

Propofol may be considered as a treatment for status epilepticus if conventional treatments have failed.

Mackenzie SJ, Kapadia F, Grant IS. Propofol infusion for control of status epilepticus. *Anaesthesia* 1990;**45**:1043–5.
Campostrini R, Bati MB, Giorgi C, et al. Propofol in the treatment of convulsive status epilepticus: a report of 4 cases. *Rivista di Neurologia* 1991;**61**:176–9.
Borgeat A, Wilder-Smith OH, Jallon P, *et al*. Propofol in the management of refractory status epilepticus. *Intensive Care Med* 1994;**20**:148–9.
Kuisma M, Roine RO. Propofol in prehospital treatment of convulsive status epilepticus *Epilepsia* 1995;**36**:1241–3.
Harrison AM, Lugo RA, Schunk JE. Treatment of convulsive status epilepticus with propofol: case report. *Pediatr Emerg Care* 1997;**13**:420–2.
Stecker MM, Kramer TH, Raps EC, *et al*. Treatment of refractory status epilepticus with propofol: clinical and pharmacokinetic findings. *Epilepsia* 1998;**39**:18–26

Regional nerve block in fractured neck of femur

Report by Bruce Martin, *Specialist Registrar*
Checked by Baha Ali, *Senior Clinical Fellow*

Abstract

A short cut review was carried out to establish whether regional nerve block is better than intravenous analgesia in reducing pain in hip fractures. Altogether 21 papers were found using the reported search, of which four presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results, and study weaknesses of these best papers are tabulated. A clinical bottom line is stated.

Clinical scenario

A 73 year old woman, who is usually fit and well, is brought to the emergency department after a fall. She is complaining of severe pain in her left groin. Examination shows that her left leg is shortened and externally rotated. You make a clinical diagnosis of fractured neck of femur (which is later confirmed radiologically). You wonder whether regional nerve block is better than intravenous analgesia for pain relief.

Three part question

In [patients with suspected neck of femur fracture] is [regional nerve block better than intravenous analgesia] at [providing and maintaining analgesia]?

Search strategy

Medline 1966–12/01 using the OVID interface. (exp femoral neck fractures OR exp hip fractures) AND (exp analgesia OR analgesia.mp) AND (exp nerve block OR nerve block.mp OR exp anesthesia, local OR exp anesthetics, local OR regional anaesthesia.mp OR regional anesthesia.mp).

Search outcome

Altogether 21 papers found. Of these only four were relevant to the preoperative setting (table 5).

Comment(s)

The studies suggest some benefit for the use of nerve block in fractured neck of femur in the pre-operative setting, most notably in extracapsular fractures. However, the studies are small and have important weaknesses.

Table 5

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Finlayson BJ and Underhill TJ, 1988, UK	36 patients age range 31–95 with fractured neck of femur. Intracapsular (16) and extracapsular (20) Femoral nerve block (10 ml 0.5% bupivocaine)	Cohort study	Objective Assessment Subjective Assessment Complications	29 had reduced sensation. 7 no change (6 intracapsular, 1 extracapsular) 26 patients had reduced pain (14 intracapsular, 12 extracapsular), 4 had no pain (all extracapsular), 6 had no change (all intracapsular) None found	No control group Statistical significance not assessed Heterogenous group of patients (2 young patients, 1 with multiple injuries)
Haddad FS and Williams RL, 1995, UK	50 patients with extracapsular fractures of the femoral neck, age range 68–89 Femoral nerve block (0.3 ml/kg 0.25% bupivicaine) *v* systemic analgesia alone	RCT	Mean pain score using VAS Analgesic requirements Incidence of complications	Greater reduction in nerve block group— statistically significant at 15 min and 2 hours Reduced in the 24 hours from admission in nerve block group Significantly reduced in nerve block group	Small number of patients. Only extracapsular fractures included. ? Optimal analgesia given to control group
Chudinov A et *al*, 1999, Israel	40 consecutive patients age 67–96 years with fractured neck of femur undergoing surgery. Continuous psoas compartment block (2 mg/kg/ of 0.25% bupivocaine with 0.8 ml/kg adrenaline) *v* analgesia	RCT	Pain relief (VAS) Complication Rate	Significant difference in psoas block group at 8 and 16 hours preoperatively and 16, 24, and 32 hours postoperatively 3 cases of local erythema in psoas group	Method of randomisation unclear. Small numbers of patients. Unblinded. Unclear whether optimal analgesia given to control group. Type of block not typically used in emergency setting
Parker MJ *et al*, 2000, UK	269 patients from 7 randomised or quasi-randomised trials with fractured neck of femur— analgesia/anaesthesia given preoperatively in 2 of these trials. Patients given either regional block or intravenous analgesia	Systematic review	Pain levels Analgesic Requirements Complication rate	Reduction in mean pain score in nerve block group Reduced analgesic requirements in nerve block group No difference	Heterogenous group of patients Trials involving both preoperative and postoperative patients were assessed together Different forms of block used in different trials Small numbers in contributing studies Unclear if amount of parenteral analgesia given was optimal