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Parenteral anti-epileptics – What is your experience?

May – July 2015

Number of responses = 99

1a) In patients with pre-existing epilepsy controlled by PO medication that are imminently dying (prognosis <1 week), and are no longer able to take PO tablets, what is generally your first-line course of action? (one_of)

answer	*votes*	*% of vote*
Stop all anti-epileptics, prescribe only p.r.n. benzodiazepine (buccal or SC midazolam or PR diazepam)	18	18%
Start parenteral midazolam	68	69%
Start parenteral levetiracetam	4	4%
Start parenteral phenobarbital	3	3%
Start parenteral valproate	1	1%
Other (please supply information in question 1b below)	5	5%

1b) Enter further details for 'other' from question 1a. (freetext)

Clonazepam (3 responses – 1 reported buccal use)
The majority of the further comments reported that their choice would depend on a combination of factors such as previous fitting control, whether there was a parenteral version of the PO drug the patient was taking, other symptoms (including degree of acceptable sedation) and the situation (i.e. hospice, community, hospital)

1c) Please indicate if there is any specific reason for your choice, e.g. availability, cost, familiarity, sedative effects. (freetext)

A summary of the responses received for each of the drug choices:
p.r.n. benzodiazepine
Availability (1 response)
Parenteral midazolam
Familiarity (42 responses), availability (21 responses), effective (9 responses), useful for additional symptoms associated with end of life care (7 responses), compatibility information known with other CSCI drugs (4 responses), and low cost (4 responses)
Parenteral levetiracetam
Lack of sedative effect (1 response), convert directly from PO levetiracetam (1 response)
Parenteral phenobarbital
Effective (2 responses)
Parenteral valproate
Availability (1 response)

2a) In patients with pre-existing epilepsy controlled by PO medication that are *not* imminently dying (prognosis >1 week), and are no longer able to take PO tablets, what is generally your first-line course of action? (one_of)

answer	*votes*	*% of vote*
Stop all anti-epileptics, prescribe only p.r.n. benzodiazepine (buccal or SC midazolam or PR diazepam)	8	8%
Start parenteral midazolam	39	39%
Start parenteral levetiracetam	11	11%
Start parenteral phenobarbital	6	6%
Start parenteral valproate	6	6%
Other (please supply information in question 2b below)	25	25%

2b) Enter further details for 'other' from question 2a. (freetext)

Clonazepam (5 responses – 2 reported buccal use)
May use PR levetiracetam or use prn benzodiazepines (1 response)
Parenteral midazolam + p.r.n. phenobarbital (1 response)
Valproate suppository (1 response)
The majority of the other responses reported that their choice would depend on a combination of factors such as previous fitting control, whether there was a parenteral version of the PO drug the patient was taking, other symptoms (including degree of acceptable sedation) and the situation (i.e. hospice, community, hospital)

2c) Please indicate if there is any specific reason for your choice, e.g. availability, cost, familiarity, sedative effects. (freetext)

A summary of the responses received for each of the drug choices:
p.r.n. benzodiazepine
For the best clinical outcome, cost and sedative effects (1 response)
Parenteral midazolam
Familiarity was the predominant reason (12 responses), the rest of the responses received (8 responses) gave reasons such as availability, effectiveness, useful for additional symptoms associated with end of life care, compatibility information and low cost
Parenteral levetiracetam
Lack of sedative effect was the main reason reported for use (4 responses). Comments were received that members are considering/interested in its use
Parenteral phenobarbital
Effective (2 responses), familiar (2 responses), not too sedative at therapeutic doses (1 response)
Parenteral valproate
Lack of sedative effect (1 response)
Other
Clonazepam is indicated for epilepsy, and is easily accessible

3a) If you use parenteral midazolam as prophylaxis for seizures when patients are unable to take PO medication, what is generally your initial starting dose? (one_of)

answer	*votes*	*% of vote*
5mg/24h	7	7%
10mg/24h	18	18%
15mg/24h	10	10%
20mg/24h	33	33%
30mg/24h	14	14%
60mg/24h	0	0%
Other	4	4%
Do not use	7	7%

3b) Do your patients usually experience sedation with this dose? (yes_no)

answer	*votes*	*% of vote*
Yes	26	26%
	5mg/24h (1 response) 10mg/24h (0 responses) 15mg/24h (4 responses) 20mg/24h (15 responses) 30mg/24h (4 responses) Other (2 responses)	
No	56	57%
	5mg/24h (6 responses) 10mg/24h (17 responses) 15mg/24h (6 responses) 20mg/24h (15 responses) 30mg/24h (9 responses) Other (1 response)	

4a) If you use parenteral levetiracetam as prophylaxis for seizures when patients are unable to take PO medication, what is generally your initial starting dose? (one_of)

answer	*votes*	*% of vote*
250mg b.d SC over 30min	0	0%
500mg b.d. SC over 30min	1	1%
250mg b.d. IV over 15-30min	1	1%
500mg b.d. IV over 15-30min	2	2%
500mg/24h CSCI	2	2%
1000mg/24h CSCI	0	0%
CSCI dose based on 1:1 conversion from prior PO levetiracetam dose	11	11%
Other (please supply information in question 4b below)	5	5%
Do not use	57	58%

4b) Enter further details for 'other' from question 4a. (freetext)

Use 500mg/24h CSCI if not on levetiracetam orally previously, but would use 1:1 conversion if had been taking levetiracetam orally previously (2 responses)
Use IV with dose based on 1:1 conversion from prior oral levetiracetam dose (2 responses)
Depends on setting. Use parenteral usually IV in hospital
Depends on oral dose of levetiracetam and convert to IV if access, or if not consider SC route

5) If you use parenteral phenobarbital as prophylaxis for seizures when patients are unable to take PO medication, what is generally your initial starting dose and route of administration? (freetext)

Of the 21 members who responded that they used phenobarbital, 13 reported using phenobarbital CSCI. Generally, a 100mg stat dose IM was given followed by 200mg/24h CSCI. For the 3 responses reporting that they would only use phenobarbital second-line, the total daily starting dose was higher at 400-800mg/24h.

Note: We are currently running a new survey on the administration and dilution of phenobarbital by CSCI.

6a) If you use parenteral valproate as prophylaxis for seizures when patients are unable to take PO medication, what is generally your initial starting dose and route of administration? (one_of)

answer	*votes*	*% of vote*
CSCI dose based on 1:1 conversion from prior PO valproate dose	12	12%
Other (please supply information in question 6b below)	2	2%
Do not use	52	53%

6b) Enter further details for 'other' from question 6a. (freetext)

1:1 conversion from PO to IV dose
I usually reduce the dose a little to start with CSCI and then increase to the equivalent of oral dose
15mg/kg in 2 doses 12h apart

7a) If you have used levetiracetam by CSCI, what diluent have you generally used? (one_of)

answer	*votes*	*% of vote*
Water for injection	9	9%
0.9% saline	7	7%
Other	3	3%
No diluent	4	4%

7b) Have you had any issues of infusion site problems e.g. redness, pain, discomfort with CSCI levetiracetam? If yes, please be as specific as possible. (freetext)

Yes – infusion site problem (1 response):
Once a very obese patient experienced necrosis of fatty tissue with 500mg levetiracetam in 500mLGlucose 5%. This was controllable and we then switched to midazolam.
No – infusion site problem (13 responses):
Water for injection (5 responses)
0.9% saline (7 responses)
Additional comments related to the above responses:
No - been well tolerated, including in one patient receiving CSCI for one month (Water for injection)
No - has been tolerated well in the patients we have used this for. This has been 3 patients over the past 6 months used for between a couple of days to a few weeks (Water for injection)
No - used in 2 patients over approx. 6 weeks daily use between them. Diluted as much as possible for McKinley administration in a 50mL syringe - in view of our unfamiliarity with this drug/route (0.9% saline)
We usually dilute levetiracetam with 250 - 500mL (0.9% saline)

8) Further comments. (freetext)
Clonazepam usually works well, usually without undue sedation
Phenobarbital always written up as a p.r.n. in all who are on anti-epileptics whether they take oral or not. This is in anticipation of status epileptics which has not responded to first line p.r.n. midazolam
Levetiracetam seemed to give good control in the 2-3 patients we have used it on. Looks promising for the future

Several members are interested in the use of levetiracetam and valproate CSCI and would like more information/ protocols or guidelines for use. In order to facilitate this, please send any documents you may have to hq@pallliativedrugs.com and we will share them via the website document library.