Evaluation of Lothian spinal line service for complex cancer pain

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Background

A study of 2,118 patients with cancer pain found that 3% of all patients required either epidural or intrathecal analgesia.(1) The Scottish Intercollegiate Guidelines Network (SIGN) publication '106' explicitly states that 'any patient with difficult to control pain despite optimal management of systemic/oral therapy should be assessed by an anaesthetist with expertise in pain medicine' with a view to interventional analgesia.(2)

Objective

To evaluate the spinal line service in Lothian for patients with complex cancer pain, with a view to informing stakeholder discussion and service development. Data was collected on patient characteristics and the efficacy of spinal lines.

Methods

A retrospective case note review was conducted, utilising hospital and hospice casenotes and TRAK (electronic casenotes). Stakeholder discussion informed the indicators of spinal line success. These included: less sedation, improved pain control, increased mobility and discharge home.

Results

12 patients who had received spinal lines met our inclusion criteria, with one set of notes unavailable. See table 1 for data summary.

Patients

- Six females and five males. Mean age 50 (range 19-83 years).
- Range of cancer diagnoses.
- The majority of patients had already rotated through four opioids, with a mean oral morphine equivalent (OME) at line insertion of 1076mg/24 hours.
- Nine out of twelve patients were on ketamine, four of whom were also on methadone.

Spinal lines

- Six patients received intrathecal lines and five, epidurals.
- Mean survival from line insertion to death was 65 days (range 8-205 days).
- Four patients discharged home with spinal lines, after a mean inpatient stay of 32 days.
- These patients spent a mean of 50% of their remaining days at home, and all died in hospice.
- Three patients had clearly successful results from their spinals (two or more positive outcomes).
- Two patients had partially successful results (one positive outcome) and success was equivocal for five patients (no documentation of positive outcomes).
- There was one clearly unsuccessful line (patient unable to tolerate local anaesthetic)
- Three patients with 'clearly successful' lines were discharged home, with a mean survival of 98 days (range 45-174 days).
- There were no serious side-effects, complications or unanticipated events in any of the 11 patients. One patient developed severe sepsis due to mastoiditis, but was able to keep her line and lived for a further four months.

A success story in words: interview with one patient's husband

"Back before Christmas I guess pain was at such a level where she became almost unable to function... it was a job for me caring for someone… the frustration of her not being able to do anything was difficult... she was continually in pain... it was difficult to watch, difficult to be with… she was miserable... a lady who was incredibly alert and had the life taken from her.

The difference to her now is quite marked... we did in fact say 'has the miracle that we have prayed for happened'... we had gone from a lady who couldn't be bothered to go shopping to someone who had taken her grandchildren shopping. We have now been to Wimbledon, we've gone on holidays all be it for one evening at a time. That would be the down side... because the medication we have to wait every day for means that the practical issues of arranging your day... however, what we do have is quality time and that's what we didn't have before".

Discussion

The discussion is presented within the framework of the internationally recognised six dimensions of quality, as outlined in the Healthcare Quality Strategy for NHS Scotland.(3)

Person-centred: Spinal line insertion followed significant consideration and discussion with a number of specialists. Several patients were assessed and had their lines inserted in hospice.

Safe: There were no serious infections or life-threatening complications in the 11 patients.

Effective: Enabled judgements to be made about the relative efficacy of spinal lines. Based on the indicators markers, three patients had clearly successful lines and two, partially successful. The remaining six were of no clear benefit.

Efficient: Lines were inserted quickly for all patients once referred. The three patients with clearly successful spinals achieved discharge home. All patients for whom the spinals were of dubious or no benefit remained in hospice until they died, spinals in-situ.

Equitable: The 11 patients came from Lothian and the surrounding areas in numbers proportional to their respective populations.

Timely: The data suggests that we may be considering patients for spinal lines too late in their disease.

Recommendations

1. Early referral for spinal line assessment. Triggers for referral such as multiple opioid rotations could help identify patients. Early referral may enable more patients to have implanted lines which are less burdensome.
2. Once referred and deemed appropriate, a trial period of spinal analgesia for all patients would help select those for whom it is likely to be successful and worth continuing.
3. Standardisation of documentation is recommended. Indicators of spinal line success, such as reduction of analgesic requirements and fewer medication side-effects could be included.
4. Economic analysis of spinal line insertion is suggested, including drug costs, pharmacy preparation and transport, training of staff to care for patients with lines in hospice, hospital and home, and inpatient stays. Potential savings associated with successful analgesia enabling discharge home should also be calculated.
5. Patient and carer feedback about the impact of spinal lines on their quality of life should be sought.

Table 1: *Summary of data*

Patient no.	Gender	Age	Primary cancer	Hospice	Home location (Ed, WL, EL, ML, Bor)	% time in hospice/hospital between PC referral and line	No. of opioids tried	OME at line insertion (mg)	Line type (Epi/IT)	Time from line insertion to death (no. of days)	Clear success	Partial success	Unclear	Definitely not successful	Discharged home following line	If yes, after how long? (days)	% time at home between line insertion & death	Place of death
1	F	36	Cervix	SCH	Ed	29	5	1800	IT	45			*		No			SCH
2	M	41	Larynx	SCH	Ed	36	5	1200	Epi	9		*			No			SCH
3	M	19	Colon	SCH	Ed	18	4	550	Epi	45	*				Yes	17	57	SCH
4	M	83	Breast	SCH	Ed	26	5	45	Epi	75	*				Yes	20	28	SCH
5	M	71	Myeloma	SCH	EL	100	3	600	IT	8		*			No			SCH
6	F	36	Cervix	MCH	Bor	8	4	2400	IT	40			*		No			MCH
7	M	60	Sarcoma	MCH	Ed	24	3	300	IT	59				*	Yes	2 (no line)	62	WGH
8	F	45	Rectum	MCH	WL	100	3	750	Epi	22			*		No			MCH
9	F	50	Colon	MCH	WL	11	5	450	IT	174	*				Yes	15	92	MCH
10	F	61	Ovary	SCH	ML	34	3	2250	IT	25			*		No			SCH
11	F	54	Lung	SCH	EL	52	4	1500	Epi	120			*		Yes	75	21	SCH

REFERENCES: (1) Zech, D.F.J., Grond, S., Lycn, J. 1995. Validation of the World Health Organisation guidelines for cancer pain relief: a 10 year prospective study. Pain, 63: 65-76. (2) SIGN 106. 2008. Control of pain in adults with cancer. Scottish Intercollegiate Guidelines Network. (3) The Healthcare Quality Strategy for NHS Scotland. 2010. The Scottish Government.

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