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Provision for advanced pain management techniques in adult palliative care: a national survey of anaesthetic pain specialists

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Introduction: It is estimated that 8% of cancer patients could benefit from advanced pain management techniques; some 12 000 patients per year in the UK. In 2002, Linklater *et al.* surveyed palliative medicine consultants to assess their access and attitude to such techniques, finding under-utilization with a lack of formal arrangements for referral. We report a survey of pain specialist anaesthetists on the same topic. **Method**: Postal questionnaire survey of lead anaesthetists in UK pain clinics. **Results**: 106 responses were received from 170 questionnaires sent (62%). Referral rates from palliative medicine to pain clinics were low; only 31% of respondents received more than 12 per year. Joint consulting arrangements were rare, but were associated with more referrals. Only 25% of anaesthetists' job plans had time allocated for palliative medicine referrals, but where present this correlated positively with referrals received ($P < 0.002$). Total interventions were estimated at less than 1000 per year. **Discussion**: There is evidence of under-referral of patients for advanced pain management procedures with a lack of integrated services.
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Key words: advanced pain management techniques; delivery of health care; pain clinics; palliative care; questionnaire survey

Introduction

The World Health Organization (WHO) analgesic ladder can result in successful pain control for up to 90% of adult cancer patients; 10% do not achieve adequate analgesia.[1] This can be due to incomplete response to systemic opioids or side effects limiting dose escalation. Up to 90% of these patients can benefit from advanced pain management techniques.[1] National guidelines recommend that cancer networks should have a named lead pain specialist and palliative care multidisciplinary teams (MDT) should have access to named anaesthetists with expertise in nerve blocking and neuromodulation techniques.[2–5]

There is evidence to support the use of neurodestructive techniques including coeliac plexus blocks,[6] splanchnic nerve blocks (SNB),[7] cordotomy[8,9] and intrathecal neurolysis.[10] Neuraxial infusions given by either epidural or intrathecal catheter[11–14] are also of benefit. Patients must be carefully selected for such procedures and the pain specialist should have adequate training in advanced pain management techniques.[1]

In 2002, a national survey of palliative medicine consultants by Linklater *et al.* highlighted an apparent under-referral to pain specialist anaesthetists.[15] In this study we provide a comparison to the Linklater paper through a postal questionnaire survey of UK pain specialists.

Method

A list of UK pain clinics was obtained from a 2003 survey by Dr Foster® and The British Pain Society (BPS).[16] Each hospital was contacted by telephone and the name of the lead anaesthetist for chronic pain management obtained. A questionnaire (Appendix 1), previously piloted in the West Midlands region, was posted to the anaesthetists identified. Questions sought to establish the number of anaesthetists receiving cancer referrals, annual referral rates, the type and number of interventions undertaken and, if none, whether a trained operator and equipment was available. Questions were also included on the relationship between the anaesthetist and palliative care team and about awareness of organisational structure of cancer networks. Non-responders were contacted by telephone. Analysis of responses was undertaken using SSPSv13 statistical software.

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Results

A total of 170 questionnaires were sent and 107 (63%) replies received. One uncompleted questionnaire was discarded. All respondents were consultant anaesthetists.

Numbers of referrals and resources

Over 90% received some referrals for patients with cancer, the number of referrals per anaesthetist was low with 68.9% of respondents receiving 12 or less referrals per year and the majority (53.8%) receiving five or less (Figure 1).

Joint consultations with a palliative care specialist were uncommon, 25 (23.6%) respondents having held one in the last month. Almost half the respondents, 51 (48.1%), had never held such a consultation, with a further 15 (14.1%) having done so more than a year ago.

Regular joint sessions in a palliative care facility were uncommon, being reported by 11 (10.4%) respondents. Time formally allocated on the job plan to accommodate palliative care referrals was available to 27 (25.5%), averaging 6 (median) to 8 (mean) hours per month. Most, 78 (73.6%) had no allocated time for advanced pain management referrals. Over half, 67 (63.2%) used hours outside their job plan to accommodate palliative care referrals, averaging 2 (median) to 3.8 (mean) hours per month. There was a positive correlation between formally allocated time for and the number of referrals received from the palliative care services, chi-squared test, $P < 0.002$ (Table 1).

There was no correlation between the size of the pain clinic (question 5) and: the number of palliative care referrals received (question 6); the time formally allocated for such referrals (question 10) nor the number of interventions performed (question 17).

Role of the pain specialist anaesthetist

The majority of respondents 81 (76.4%), felt the role of the pain specialist in patients with advanced cancer should include advice on analgesic prescriptions in addition to performing anaesthetic procedures, whilst 18 (17.0%) disagreed; seven gave no response.

Table 1 Cross-tabulation of formally allocated time for palliative care work against the number of referrals received from palliative care services (chi-squared test, $P < 0.002$)

Do you have time allocated in your job plan to accommodate some of these referrals?	How many referrals do you receive from palliative care?					
	None	1–2	3–5	6–12	>12	Total
Not stated	0	0	0	1	0	1
Yes	0	3	6	4	14	27
No	10	21	17	11	19	78
Total	10	24	23	16	33	106

Interventions performed

A majority of units, 91 (85.8%) were able to offer epidural or intrathecal infusions to inpatients in their institution with 22% using epidural catheters, 18% intrathecal and 45% both. Just over half 60 (56.6%) were able to discharge patients to a community setting with a neuraxial infusion in situ. Whilst 64 (60.4%) of respondents reported performing neurolytic coeliac plexus blocks (NCPB) or SNB fewer, 29 (24.5%), performed intrathecal neurolysis and only two respondents performed percutaneous cordotomy. Although 16 (15.1%) reported performing neuromodulation procedures, it is unknown how many of these were for cancer patients (Table 2).

Awareness of organizational structures

Awareness of cancer networks was poor with most respondents, 73 (68.9%) not knowing the name of their local network. Twenty-one (19.8%) stated that their network had a named lead pain specialist clinical whilst 37 (34.8%) stated that it did not and 46 (43.3%) did not know. Thirty-four (32.1%) respondents reported that a named pain specialist was available for their local palliative care multidisciplinary

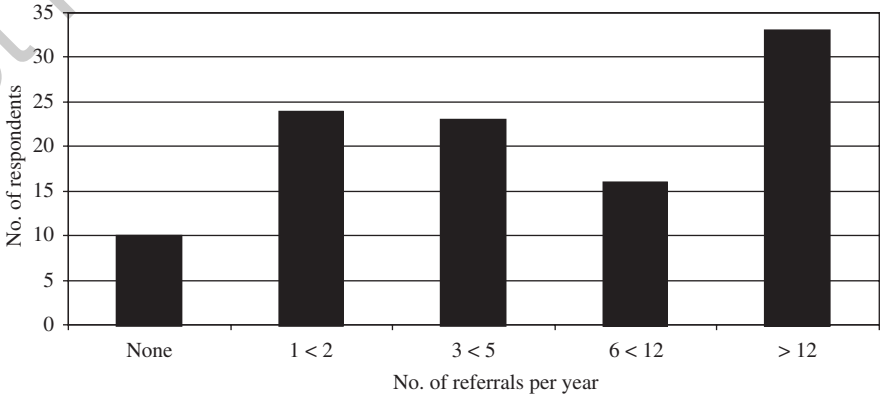

Figure 1 How many referrals do you receive each year from the palliative care services?

Table 2 Availability of specific interventions

Procedure	Respondents performing procedure		Number of procedures per year				Additional respondents with training and facilities
			Range	Median	Mean	Total	
NCPB/SNB	64	60.4%	1–11	2	3	193	25
Intrathecal neurolysis	29	24.5%	1–12	1	3	75	28
Percutaneous cordotomy	2	1.9%	1–10	—	—	11	7
Neuromodulation	16	15.1%	1–75	8	14	233	15

NCPB = neurolytic coeliac plexus block, SNB = splanchnic nerve block.

team whilst 43 (40.6%) reported that there was not and 27 (25.5%) did not know.

Discussion

The number patients who would benefit from advanced pain management techniques is unclear. Widely quoted estimates that 90% of patients can be effectively managed by the WHO analgesic ladder are based on a 1990 study;[1] however, a systematic review of papers from 1982 to 1995 concluded that the evidence was insufficient to estimate its effectiveness.[17] Recent BPS guidelines for intrathecal drug delivery systems suggest that the WHO approach can control pain in 80–90% of patients,[18] quoting 8% requiring nerve blocks, 3% neurolytic blocks and 3% spinal analgesia.[19]

Improvements in systemic analgesia including new opioid formulations and co-analgesics, and more evidence regarding opioid rotation may have increased the proportion of patients achieving good pain control;[20,21] however some studies estimate that at least 30% are not achieving this.[22,23] Since the indication for advanced pain management techniques is the persistence of pain or excessive side effects following analgesic optimization, the decision to proceed is arguably best taken within the context of the extended specialist palliative care MDT.[3,5] For this reason, the estimate of how many patients would benefit from advanced pain techniques is best made in this context. Recently reported UK experience in such a setting shows that 11% of patients were considered, and 8% were treated.[15] On these estimates, the results from this study suggest that relatively few patients for whom advanced pain management techniques are indicated are referred to pain specialist anaesthetists.

In 2004 there were 153 397 cancer deaths in the UK,[24] from which it may be estimated that 15 000 patients might benefit from assessment by a pain specialist anaesthetist leading to a possible 12 000 interventions per year. If equally distributed amongst the 170 clinics identified for this survey, each clinic would expect 90 referrals annually with a potential for 70 procedures. Results from this study suggest that only a minority of pain specialists receive more than 12 referrals a year.

Linklater *et al.* identified lack of formal arrangements and inexperience of working with pain specialist anaesthetists as factors inhibiting referral.[15] This survey confirms the lack of formal arrangements with three-quarters of respondents having no time allocated in their job plans to accommodate referrals. A third of respondents used extra-contractual time to see cancer patients, averaging 2–4 hours a month. A quarter did have hours allocated in their job plans, spending 6–8 hours per month on this work. Only 10% had programmed joint activities with their palliative medicine colleagues. Where such arrangements did exist there were significantly more referrals.

Comparing these results with those presented by Linklater *et al.*,[15] anaesthetists disagree with palliative medicine physicians regarding their role, the latter thinking it appropriate to limit anaesthetists to advice on technical procedures, whereas more than 75% of anaesthetists thought they could contribute usefully to advice on drug management. This illustrates a need for increased interprofessional understanding of skills and a thorough exploration of roles and function within the multidisciplinary team at the local level.

There has been a shift of practice from neurodestructive techniques to neuraxial infusions over recent years. Neuraxial infusions are reported to be available to inpatients in most institutions, although only half the respondents could manage such infusions in a community setting, indicating that this valuable procedure is not universally available to cancer patients. It is recognized that inserting the catheter is a widespread skill, but maintaining supplies and troubleshooting outside hospital is problematic and needs to be addressed. The epidural and intrathecal routes were used with equal frequency and respondents were evenly split in their expressed preference. We did not collect data on the number of neuraxial infusions performed.

The availability of neurodestructive interventions is limited and the fact that respondents with training and facilities are not performing them shows that even this limited capacity is not being fully utilized. Although the skills for NCPB or SNB are widely available, numbers undertaken by individuals are low. The availability of intrathecal neurolysis is lower, again with small numbers per practitioner. Only two respondents undertake percutaneous cordotomy, although the authors have personal knowledge of a third centre. This

reflects the experience of palliative medicine consultants, who found access to cordotomy difficult or impossible. A few centres use neuromodulation extensively, however it is not possible to specify how many use this technique regularly for patients with terminal cancer, since it is commonly used in patients with chronic non-malignant pain.

The recent NICE guidance on supportive and palliative care in cancer highlighted that each Cancer Network should have a named lead specialist for advanced pain management techniques, and each local specialist palliative care multidisciplinary team should have an anaesthetist with expertise in nerve blocking and neuro-modulation techniques as a member.[3,5] The framework is intended to identify and channel suitable patients to a subgroup of pain specialist anaesthetists with particular expertise in advanced pain management techniques. About a third of respondents knew the name of their local cancer network and a third confirmed that their specialist palliative care MDT included a pain specialist anaesthetist, but a further third stated that their MDT did not, suggesting that such systems are not widely established.

Patients with cancer pain potentially requiring advanced pain management techniques have complex needs which require a robust multidisciplinary approach which should include holistic assessment and exploration of needs from a variety of professionals, including pain specialist anaesthetists. Anaesthetists with special interest in cancer pain require adequate time and resources to allow them to be involved in multidisciplinary discussions at an early stage. Linklater *et al.*[15] describe how such a service has enhanced the delivery of advanced pain techniques in their experience, confirming at least anecdotally the benefits of such a model. Only a tenth of the respondents to this study indicated joint working arrangements with palliative care teams and no indication of the quality or effectiveness of such arrangements is possible from our data. Further research is needed to determine the most effective service models for delivering high quality integrated care.

Limitations to the study

This is a questionnaire survey relying upon recall by respondents without corroboration of independently collected data. Anaesthetists who have an interest in pain relief for cancer patients were more likely to respond than those who do not which may have led to an overestimate of cancer pain activity. Conversely, the sampling method may have missed key individuals with significant activity. Referrals of cancer pain direct from surgeons and oncologists to pain clinics may not have been captured, but if such referrals resulted in interventions these should have been counted. Although there are potential biases in our data and uncertainty concerning the number of patients who would benefit from advanced pain management techniques, the difference between the predicted number of referrals and our estimate of the number of procedures performed is large (12 000 versus 1000).

Conclusions

Although pain specialist anaesthetists have a vital role in the management of patients with advanced cancer, this questionnaire survey suggests that few anaesthetists are involved in the delivery of an integrated palliative care service and only a small proportion of patients who could benefit from advanced pain management techniques do so.

Under-referral from palliative medicine physicians to pain specialist anaesthetists, lack of resources, lack of formal arrangements for joint working and lack of multidisciplinary relationships are the likely underlying reasons for the present situation and these issues are arguably mutually reinforcing. This situation should be addressed by Cancer Networks as a matter of urgency, funding should be made available to address the lack of resources underlying the issue and further research is needed to determine the most effective models for multidisciplinary service delivery.

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Appendix 1. Sample questionnaire

Provision for Advanced Pain Management Techniques in Adult Palliative Care

Advanced pain management techniques include epidural or intrathecal drug delivery systems, peripheral nerve block, coeliac plexus or splanchnic nerve block, cordotomy and neuromodulation techniques.

Questions about you/your clinic

1	Optional: Your name				
2	Optional: Your base hospital				
3	Your base speciality	Anaesthetics		Other (Specify)	
4	Your grade / job title	Consultant		Other (Specify)	
5	Approximately how many new patients (cancer & non-cancer) do you see per year?				

Questions about referrals

6	How many referrals do you receive each year from the palliative care services?	None		1–2		3–5		6–12		>12	
7	When did you last see a patient in a joint consultation with a palliative care specialist?	Never		>1 year ago		This year		This month		This week	
8	When working with palliative care specialists, the role of the pain specialist should be:	Confined to advice on / performing procedures				Performing procedures *and* extended to include advice on analgesic prescriptions					

Questions about the resources you have available to respond to the above referrals

9	Do you have a regular joint session in a palliative care facilitiy?	No		Yes			
10	Do you have time allocated in your job plan to accommodate these referrals?	No		Yes		*If yes:* Number of hours per month	
11	Do you use time outside your job plan to accommodate some of these referrals?	No		Yes		*If yes:* Number of hours per month	

Questions about neuraxial (epidural/intrathecal) drug infusions for adults with cancer

12	Are you able to offer neuraxial infusions (epidural or spinal) to *inpatients* in your institution?	No		Yes				
13	Which route do you use?	Epidural		Intrathecal		Both		
14	If you use both, which do you prefer	Epidural		Intrathecal				
15	Can you discharge patients home or to a community setting with a neuraxial infusion?	No		Yes				

Questions about specific interventions; your skills and facilities

16	*Please answer the questions below for each of the procedures listed to the right*	Neurolytic coeliac plexus / splanchnic nerve block		Intrathecal neurolysis with alcohol or phenol		Percutaneous cordotomy		Neuromodulation	
17	How many of each procedure do you perform per year?								
18	If none, have you been trained in this technique?	No	Yes	No	Yes	No	Yes	No	Yes
19	If none, do you have the facilities to perform this technique?	No	No	No	Yes	No	Yes	No	Yes

Questions about your local cancer service framework

20	Do you know the name of your local cancer network?	No		Yes		Name		
21	Is there a named lead clinician for advanced pain management techniques within this network?	No		Yes		Don't know		
22	Does your palliative care multidisciplinary team have an anaesthetist trained in advanced pain management techniques as a member?	No		Yes		Don't know		

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Thank you!