

Infant and neonatal pain: anaesthetists' perceptions and prescribing patterns

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Sept 1995

Until 10 years ago neonates and infants were assumed to be incapable of perceiving pain and seldom given analgesics for operations.¹ Advances in neonatal analgesic pharmacology and neurobiology, including biochemical stress response studies, have prompted reconsideration of this approach.²

We studied the changes in attitude and practice among members of the Association of Paediatric Anaesthetists of Great Britain and Ireland since an original survey in 1988.³

Methods and results

A questionnaire designed to allow comparison with the 1988 survey³ was sent to the 151 members of the association from the United Kingdom and the Republic of Ireland. Question 1 asked, "Do you think the following are able to perceive pain?" (a) newborn infants less than 1 week of age, (b) neonates aged 1 week to 1 month, (c) infants aged 1-3 months, (d) infants aged 3-12 months, and (e) infants of less than 60 weeks' postconceptional age who were delivered preterm (before 37 weeks). Question 2 asked about the use of systemic and regional analgesia for major and minor surgery in non-ventilated, non-intensive care unit patients. Responses were on a linear analogue scale: 1 = never, 2 = rarely, 3 = often, 4 = always. Question 3 asked respondents to nominate factors that limited analgesic prescribing.

One hundred and seven questionnaires (71%) were returned for analysis in 1995. There was almost universal agreement that all age groups perceived pain. By contrast, in 1988 eight (13%) respondents thought that newborn infants and four (7%) that neonates did not feel pain. Fourteen (23%) respondents in 1988 were undecided.

For major surgery in newborn infants 97 (91%) anaesthetists prescribed systemic opioids in 1995 as compared with six (10%) in 1988 (table 1). For neonates 98 (92%) anaesthetists used opioids in 1995 as compared with 11 (18%) in 1988. Anaesthetists in 1995 who did not prescribe opioids provided analgesia by local anaesthetic wound infiltration or peripheral or regional nerve block followed by paracetamol. Thus in 1995 all infants received analgesics (opioids or local anaesthetic) during major surgery. In order of usage morphine, codeine, and fentanyl were the most commonly prescribed analgesics in 1995 whereas in 1988 the order was morphine, papaveretum, or

pethidine. Local anaesthetic wound infiltration or peripheral nerve blocks were used by 94 (88%) anaesthetists in 1995 whereas in 1988 only 16 (27%) used these in newborn infants. Continuous extradural infusions were used by 30 (28%) anaesthetists in 1995, though only for major surgery in specialist centres.

For minor surgery only 16 (27%) anaesthetists in 1988 used local anaesthetic techniques whereas in 1995, 106 (99%) used them even in the youngest patients.

In 1995 paracetamol was regularly used at all ages by 95 (89%) anaesthetists for major surgery and by 96 (90%) anaesthetists for minor surgery. Non-steroidal anti-inflammatory drugs were used by 12 (11%) anaesthetists for newborn infants, rising to 63 (59%) for infants aged 3-12 months having major or minor surgery. For babies born preterm in whom there was concern about possible postoperative apnoea only 80 (75%) anaesthetists used systemic opioids for major surgery. However, local anaesthetic techniques were regularly used by 93 (87%).

Factors commonly limiting analgesic prescribing in 1995 were inadequate postoperative care facilities (74 anaesthetists; 69%), lack of experience (63; 59%), lack of scientific data (56; 52%), and lack of a designated pain service (33; 31%).

Comment

The historical impression that neonates could not feel pain accounted for the low usage of analgesics even for major surgery. This study shows that paediatric anaesthetists have responded to new data⁴ and agree that even the smallest babies can respond to noxious stimuli. Of constant concern when using analgesics are the numerous potential complications, especially in neonates with immature physiology and sensitivity to side effects. Delivery of analgesia safely and effectively is now possible with detailed protocols.⁵ More highly specialised techniques—for example, epidural infusions—are used only in specialist centres. Indeed, 74 (69%) anaesthetists commented that less than ideal postoperative facilities inevitably limited their choice of analgesic. Plainly, attention to pain relief is now firmly part of neonatal anaesthetic practice.

Funding: None.

Conflict of interest: None.

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(Accepted 15 July 1996)

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Table 1—Use of systemic opioids and regional analgesia in newborn infants, neonates, and infants having major surgery in 1988 and 1995. Figures are numbers (percentages) of anaesthetists

	Always used		Usually used		Rarely used		Never used	
	1988	1995	1988	1995	1988	1995	1988	1995
Systemic opioids								
Newborn (<1 week)	1 (2)	24 (23)	5 (8)	73 (68)	25 (42)	8 (7)	29 (48)	2 (2)
Neonate:								
1 Week to 1 month	1 (2)	24 (22)	10 (17)	74 (69)	27 (45)	7 (7)	22 (37)	2 (2)
>1 Month to 3 months	7 (12)	38 (3)	26 (43)	68 (64)	23 (37)	1 (1)	4 (7)	0
>3 Months to 1 year	14 (23)	47 (44)	37 (62)	59 (55)	7 (12)	1 (1)	2 (3)	0
Regional analgesia								
Newborn (<1 week)	0	12 (11)	1 (2)	85 (79)	10 (17)	5 (5)	49 (82)	5 (5)
Neonate:								
1 Week to 1 month	0	12 (11)	1 (2)	83 (78)	17 (28)	8 (7)	42 (70)	4 (4)
>1 Month to 3 months	1 (2)	15 (14)	11 (18)	80 (75)	28 (47)	10 (9)	20 (33)	2 (2)
>3 Months to 1 year	2 (3)	12 (11)	22 (37)	81 (76)	29 (48)	11 (10)	7 (12)	3 (3)