

Short Communications

Scandinavian bovine practitioners' attitudes to the use of analgesics in cattle

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IN recent years, pain in cattle (Stafford and Mellor 2007) and the welfare of diseased animals (Broom 2006) have received increased scientific attention. New knowledge has emerged regarding the pain that may be associated with typical production diseases (Todd and others 2007) and routine management procedures such as castration (Boesch and others 2008) and dehorning (Stewart and others 2009). As well as these changes in scientific focus, the emphasis on the treatment of pain in veterinary medicine has changed dramatically during the past 10 to 15 years (Flecknell 2008). In order to allow implementation of new knowledge regarding pain in dairy cattle, it is important to understand the attitudes of bovine practitioners and their perceived limiting factors. This short communication presents the results of a questionnaire survey focusing on the use of analgesics in cows and calves among bovine practitioners in the Scandinavian countries.

A total of 1164 questionnaires were sent to practising veterinarians in Denmark (493), Sweden (284) and Norway (387) during the period June to September 2006. The questionnaire, which was supplied with a prepaid envelope and a letter explaining the aim of the project, was distributed to veterinarians on the mailing list of a pharmaceutical company (Boehringer Ingelheim). No reminders were sent after the initial mailing.

The questionnaire consisted of 25 questions, mostly closed or semi-closed, and took approximately 30 minutes to complete. The first part of the questionnaire collected demographic information such

as the respondent's sex and year of graduation, and the proportion of time they spent working with cattle. The second part of the questionnaire asked questions about which analgesic drugs were used in the respondent's practice and the respondent's perception of the importance of various factors when choosing which drugs to use. The third part focused on general attitudes towards pain in cows and calves and the use of analgesics.

A total of 352 veterinarians returned the questionnaire (137 from Denmark, 132 from Norway and 83 from Sweden), giving an overall response rate of 30.2 per cent. The response rate differed only slightly between the countries. On average, the veterinarians spent 61 per cent of their time working with cattle. The distribution of the respondents' sex and decade of graduation from veterinary school is shown in Table 1. Overall, 59 per cent of the respondents were male and 41 per cent were female; the sex distribution has changed markedly over time, with an increasing proportion of female veterinarians graduating in more recent decades. Table 2 shows the answers to a number of questions exploring the veterinarians' general opinion towards a number of statements regarding pain and analgesics. The results are presented for all respondents and also stratified by sex and decade of graduation. The statistical significance of differences was evaluated using logistic regression, with sex and decade of graduation as explanatory variables. Country was also included in the model to take any differences between the three countries into account; the effects of country will not be addressed further in this paper. The differences between male and female veterinarians were generally small. However, a larger proportion of the female veterinarians agreed that cattle recover more quickly after the use of analgesics ($P=0.02$).

Veterinarians who graduated in the 1970s or earlier were significantly more likely to agree that analgesics may mask deteriorations in the condition of an animal than veterinarians who graduated in the 1980s and 2000s ($P=0.01$). Additionally, younger veterinarians (those who graduated in the 2000s) more often agreed with the statement that cattle recover more quickly after the use of analgesics than their older colleagues ($P=0.01$).

Table 3 summarises the veterinarians' answers regarding their perceptions of the importance of a number of factors when using NSAIDs, α_2 agonists and local anaesthetics for cows and calves. Generally, there was no difference in the veterinarians' perceived importance of factors when considering the treatment of cows and calves. For NSAIDs, the veterinarians stated that the anti-inflammatory effect, the antitoxic effect, and the potency and duration of the analgesic effect were most important when making their choice of drug. The sedative effect was stated to be the most important factor in relation to the use of α_2 agonists. Finally, the potency and duration of analgesia were judged to be most important when making a choice of local anaesthetic. For all three groups of drugs, the veterinarian's relationship to the representative from the pharmaceutical company and the general purchase policy in the veterinary practice were of minor importance.

The present study highlights some characteristic differences between veterinarians of different ages regarding their attitudes towards pain in cows and calves and the use of analgesics. Generally,

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TABLE 1: Distribution of sex and decade of graduation among Scandinavian veterinarians answering a questionnaire about attitudes to pain in cows and calves

	Decade of graduation				
	1960s	1970s	1980s	1990s	2000s
Sex					
Male	7	71	62	36	30
Female	0	7	37	47	52
No answer				1	
Proportion (%) of women	0	9.0	37.4	56.6	63.4

TABLE 2: Proportion of Scandinavian veterinarians who agreed with a number of statements regarding pain and the use of analgesics in cows and calves

Statement	All respondents (n=350) Agree (%)	Stratified by sex		Stratified by decade of graduation			
		Male (n=206) Agree (%)	Female (n=143) Agree (%)	1970s and earlier (n=85) Agree (%)	1980s (n=99) Agree (%)	1990s (n=84) Agree (%)	2000s (n=82) Agree (%)
Analgesics may mask a deterioration in the condition of the animal	43.8	44.4	43.4	56.3 ^a	36.4 ^b	45.2 ^{ab}	37.8 ^b
Cows and calves benefit from the use of analgesics used in combination with other treatment	96.3	96.1	96.5	95.4	94.9	96.4	100
Some pain is necessary to prevent the animal from being too active	21.0	22.2	19.6	28.7	20.2	16.7	18.3
Cow and calves recover faster after the use of analgesics	91.2	88.4 ^x	95.1 ^y	86.2 ^a	89.9 ^a	91.7 ^a	97.6 ^b
Drug side effects limit the advantages of administering analgesics for cattle	5.7	4.8	7.0	9.2	5.1	4.8	3.7
Farmers are happy to pay the cost of analgesics for cattle	72.4	71.0	74.1	67.8	70.7	72.6	79.3
Farmers would like their cattle to be treated with analgesics, but the price is a major problem	37.8	35.3	42.0	33.3	35.4	38.1	45.1
EU legislation limits my possibilities to use analgesics in cattle	37.2	36.7	37.1	37.9	36.4	35.7	39.0

Different superscript letters (^a, ^b and ^x, ^y) indicate a statistically significant difference (P<0.05)

TABLE 3: Scandinavian veterinarians' opinions about the importance of factors in relation to the use of NSAIDs, α_2 agonists and local anaesthetics in cows and calves (scored on an ordinal scale: 1 Not important, 4 Very important)

Factor	NSAIDs		α_2 agonists		Local anaesthetics	
	Adult cattle Mean (median) score	Calves Mean (median) score	Adult cattle Mean (median) score	Calves Mean (median) score	Adult cattle Mean (median) score	Calves Mean (median) score
Possible side effects	2.3 (2)	2.2 (2)	2.5 (3)	2.4 (2)	2.2 (2)	2.2 (2)
Costs	2.5 (3)	2.2 (2)	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Lack of sedative effect	2.0 (2)	2.0 (2)	NA	NA	NA	NA
Sedative effect	NA	NA	3.7 (4)	3.7 (4)	NA	NA
Availability of product support	1.9 (2)	1.7 (2)	1.7 (2)	1.6 (2)	1.6 (1)	1.6 (1)
Relationship to drug company representative	1.5 (1)	1.4 (1)	1.4 (1)	1.3 (1)	1.3 (1)	1.3 (1)
Anti-inflammatory effect	3.7 (4)	3.6 (4)	NA	NA	NA	NA
Antitoxic effect	3.7 (4)	3.4 (4)	NA	NA	NA	NA
Combination with adrenaline	NA	NA	NA	NA	2.5 (3)	2.5 (3)
Analgesic potency	3.8 (4)	3.7 (4)	2.7 (3)	2.8 (3)	3.9 (4)	3.9 (4)
Duration of analgesic effect	3.6 (4)	3.7 (4)	2.4 (2)	2.6 (3)	3.6 (4)	3.6 (4)
Route of administration	2.2 (2)	2.3 (2)	2.2 (2)	2.3 (2)	NA	NA
Dose volume	1.9 (2)	2.0 (2)	2.0 (2)	2.0 (2)	2.5 (3)	2.4 (2)
Which indications the drug is licensed for	3.0 (3)	2.9 (3)	3.0 (3)	2.9 (3)	3.0 (3)	2.9 (3)
Purchase policy in practice	1.7 (1)	1.5 (1)	1.6 (1)	1.5 (1)	1.6 (1)	1.5 (1)
Time to onset of effect	2.8 (3)	2.9 (3)	3.3 (3)	3.2 (3)	3.2 (3)	3.2 (3)

NA Not applicable

younger veterinarians were more in favour of the use of analgesics and more concerned about the possible negative effects upon cattle of experiencing pain. This finding is in line with other studies that showed that younger veterinarians tend to emphasise the importance of analgesic treatment, whereas older veterinarians tend to focus on the side effects of analgesic drugs and more often state that 'some pain is necessary' to prevent excessive physical activity of the animal (Raekallio and others 2003). The observed differences between veterinarians of different ages may well be due to the changes in emphasis on treatment of pain that have taken place in veterinary medicine during the past 10 to 15 years. In addition, research on pain and the importance of analgesia in farm animals has expanded in recent years and has drawn attention towards both acute pain associated with various husbandry practices (Viñuela-Fernández and others 2007) and more prolonged conditions that cause pain, especially the pain associated with lameness in cattle (Flower and others 2003). Furthermore, various national laws/regulations in all the Scandinavian countries now include regulations governing the use of anaesthesia and analgesia for different husbandry procedures (for example, dehorning and castrating calves) (Anon 1988, 1991, 2004), which may well have contributed to veterinarians becoming more aware of the treatment of pain.

The results of this study indicate that the differences between male and female veterinarians' attitudes to pain and the use of analgesics in cattle are relatively small. These results contrast with the findings of

previous studies that showed that female veterinarians are more concerned about painful conditions and the provision of analgesia than their male colleagues (Raekallio and others 2003, Hugonnard and others 2004). The effects of sex and decade of graduation are confounded (Table 1), and therefore the effects of decade of graduation that were found in the present study might to some extent be an effect of sex.

The veterinarians who answered the questionnaire seemed to be very pragmatic when choosing an analgesic drug. The results indicate that they place greater emphasis on the direct pharmacological effects of drugs (such as the potency and duration of analgesia) and much less emphasis on issues such as licensing, the purchase policy in their veterinary practice or product support from the pharmaceutical companies. These results may be useful in the future when deciding how to optimise the use of analgesics by veterinarians.

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References

- ANON (1988) Animal Protection Ordinance. www.notisum.se/mp/sls/lag/19880539.htm (In Swedish). Accessed July 12, 2010
- ANON (1991) Animal Protection Law Number 386 of June 6, 1991. www.retsinformation.dk/Forms/R0710.aspx?id=59433 (In Danish). Accessed July 12, 2010
- ANON (2004) Regulations on Welfare in Cattle Number 665 of 22nd April 2004. www.

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- lovdata.no/cgi-wifit/ldles?ltdoc=/for/ff-20040422-0665.html (In Norwegian). Accessed July 12, 2010
- BOESCH, D., STEINER, A., GYGAX, L. & STAUFFACHER, M. (2008) Burdizzo castration of calves less than 1-week old with and without local anaesthesia: short-term behavioural responses and plasma cortisol levels. *Applied Animal Behaviour Science* **114**, 330-345
- BROOM, D. M. (2006) Behaviour and welfare in relation to pathology. *Applied Animal Behaviour Science* **97**, 73-83
- FLECKNELL, P. (2008) Analgesia from a veterinary perspective. *British Journal of Anaesthesia* **101**, 121-124
- FLOWER, F. C., SEDLBAUER, M., CARTER, E., VON KEYSERLINGK, M. A. G., SANDERSON, D. J. & WEARY, D. M. (2008) Analgesics improve the gait of lame dairy cattle. *Journal of Dairy Science* **91**, 3010-3014
- HUGONNARD, M., LEBLOND, A., KEROACK, S., CADORÉ, J-L. & TRONCY, E. (2004) Attitudes and concerns of French veterinarians towards pain and analgesia in dogs and cats. *Veterinary Anaesthesia and Analgesia* **31**, 154-163
- RAEKALLIO, M., HEINONEN, K. M., KUUSASARI, J. & VAINIO, O. (2003) Pain alleviation in animals: attitudes and practices of Finnish veterinarians. *Veterinary Journal* **165**, 131-135
- STAFFORD, K. J. & MELLOR, D. J. (2007) Pain: a developing issue in veterinary medicine. *Veterinary Journal* **174**, 225-226
- STEWART, M., STOOKEY, J. M., STAFFORD, K. J., TUCKER, C. B., ROGERS, A. R., DOWLING, S. K., VERKERK, G. A., SCHAEFER, A. L. & WEBSTER, J. R. (2009) Effects of local anesthetic and a nonsteroidal antiinflammatory drug on pain responses of dairy calves to hot-iron dehorning. *Journal of Dairy Science* **92**, 1512-1519
- TODD, C. G., MCKNIGHT, D. R., MILLMAN, S. T., DUFFIELD, T. F. & LESLIE, K. E. (2007) Meloxicam therapy for calves with neonatal calf diarrhea complex. Proceedings of the 41st International Congress of the International Society of Applied Ethology. Merida, July 30 to August 3, 2007. p 175
- VINUELA-FERNÁNDEZ, I., JONES, E., WELSH, E. M. & FLEETWOOD-WALKER, S. M. (2007) Pain mechanisms and their implication for the management of pain in farm and companion animals. *Veterinary Journal* **174**, 227-239

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