Managing Pain to Increase Cow Comfort

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The idea that dairy cattle housed in well-designed and comfortable environments produce more milk and have longer, healthier, and more productive lives has been well supported by formal research studies as well as by the personal observations of experienced dairy personnel (1,2). Known as cow comfort, this concept includes a wide range of issues and measures aimed at improving animals’ welfare and dairy businesses (3).

Environment
As indicated in the diagram below, the primary focus of many comfort-enhancing efforts is improvements to the animals’ environment.

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PAIN-INDUCING CONDITIONS

Infections
- Mastitis
- Metritis
- Diarrhea
- Pneumonia
- Foot rot

Surgical Procedures
- Dehorning
- Castration
- Tail docking
- C-section
- Laceration repair

Other
- Post-calving
- Fractures
- Dislocations
- Strain
- Sprains

Pain Management
Given that these represent commonly encountered conditions have great economic impact for the dairy farmers, it becomes apparent that what’s missing in discussions about cow comfort is pain management, which encompasses the interventions used to understand and ease pain, and alleviate its cause if possible.
Drugs to Alleviate Pain

Pain management often includes the use of therapeutic agents specifically designed for that purpose. The list below is a representation of drugs commonly used by dairy practitioners.

<table>
<thead>
<tr>
<th>PAIN-MANAGEMENT DRUGS</th>
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<tbody>
<tr>
<td><strong>Anesthetics</strong></td>
</tr>
<tr>
<td>Lidocaine</td>
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<tr>
<td>Carbocaine</td>
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<tr>
<td>Mepivacaine</td>
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<td>Xylazine</td>
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<td>Detomidine</td>
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Anesthetic agents, such as lidocaine, are used to prevent the pain associated with surgical incisions for procedures such as correction of displaced abomasum, cesarean sections and umbilical hernia repair. They have long been a part of a standard of care that veterinarians provide as routine pre-operative surgical preparation of the patient. However, use of this or a similar agent for some other commonly performed procedures is not standard practice. A recent report, “Use of analgesia in cattle by Ontario veterinarians,” which focused on lameness and animal welfare, determined that although many veterinarians recognized that their treatments for certain lameness-related conditions were painful, many did not administer analgesics to decrease the pain in the cattle undergoing treatment. This same article reported that following presentations and discussions on pain management, many veterinarians indicated that they planned to increase their use of analgesics in their future pain management protocols (4).

Another example of pain management is the use of non-steroidal anti-inflammatory drugs (NSAIDs) such as aspirin or Banamine® for control of post-operative pain. Although documented evidence that this practice should be a standard of care has not as yet been established, a growing body of research supports the administration of pain medication before a painful event, such as surgery, is encountered. Optimally, pain medication should be administered at least 30 minutes before an incision is made to decrease pain associated with surgical procedures. When preparing an animal for surgery, a dose of Banamine administered by intravenous injection will rapidly provide pain control, and decrease post-operative discomfort.

Conclusion

Although the body of knowledge about pain management is much greater than presented here, the important message to dairy managers and veterinarians alike is to consider expanding your appreciation for cow comfort to include not only environmental comfort, but also protocols that can ease or possibly alleviate pain in our hard working dairy cattle. This approach will add slightly to the cost of overall treatment, however, it will be well worth it.

Notes

Most of the drugs listed, although not approved for use in food-producing animals, are available for use in an extra-label manner by veterinarians following the Federal Animal Medicinal Drug Use Clarification Act. It is important to use them in a way that is consistent with identified indications, contraindications, dosages, routes of administration, and withdrawal times for milk and meat.

References