Pain Management:
The Veterinary Technician’s Perspective

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As the practice of pain management becomes mainstream in veterinary medicine, experts continually offer up, and debate, the efficacy of analgesic drugs, combinations, methods of administration, and alternative therapies. The search also continues for the most objective scientific methods of measuring and assessing pain in our patients. A survey (Shaffran and colleagues, unpublished data, 1993) of veterinarians and technicians at four teaching hospitals revealed consistency in terms of answering the simple question: “How do you know when your patient is in pain?” The responses were quite similar among the different groups (ie, veterinarians, veterinary students, veterinary technicians) and across geographic areas. The only striking difference between veterinarians and the other groups was that nearly all the veterinarians responded “because my technician tells me,” which was within the top 10 reasons on their lists. This is not surprising, given the huge role that human nurses have played in pain management for their nonverbal patients. Human neonatal and pediatric nurses and veterinary technicians share the position of patient advocate, giving their patients voice and attending to their perceived needs. Unlike human medicine, however, veterinary technicians typically do this without the help of parents, who play a large role in advocating for their hospitalized children.

The quality of pain management in practices seems to be directly related to veterinary technicians. A study done in Canada in 1999 showed that pain management practice increased proportionately with the number of licensed veterinary technicians on staff and relative to the amount of continuing education the technicians received.

The role of advocate for a nonverbal patient can be daunting. Veterinary technicians are in the unique position of being responsible for most of and the quality of patient care without the freedom to prescribe or initiate therapy. This often results in the recurring, and sometimes frustrating, pursuit of a positive response from veterinarians.
toward administration of analgesics. Knowledge of the physiology of pain and pharmacology of analgesics is essential for good communication between veterinarians and veterinary technicians. Optimally, the veterinarian regards the technician as an integral member of the pain management team. The skilled technician is a source of vital information required to choose and administer appropriate analgesics. He or she is a trusted caretaker for hospitalized patients. The success of this relationship is terribly important for all patients and applies to elective, routine, and extraordinary cases. The critical care setting may best demonstrate the crucial role that veterinary technicians play in providing optimum patient care, wherein the concentrated interactive nature of the nurse-patient relationship is coupled with severely diminished communication skills of the critically ill patient. Nowhere more than in the intensive care unit (ICU) is this relationship more apparent. Technicians in the ICU observe patients closely for extended periods and are usually the first to notice changes in status. Familiarity with patient personalities and reactions to stimuli give additional insight into how particular patients may react to painful stimuli. This includes the differences in expression between dogs and cats, the young and old, and variations among certain breeds. For example, Siberian huskies and Doberman pinschers, who vocalize regularly even in nonpainful situations, can be more difficult to assess with respect to pain. They are often thought to be more “sensitive” to pain, or to possess a lower pain threshold than other breeds, when, in fact, they are likely using a communication style typical of the breed to convey similar pain or stress to other patients. On the other hand, pit bulls and Labrador retrievers seem to remain stoical in the face of pain, also making pain assessment difficult. The skilled technician factors this into his or her pain assessments.

Many technicians perform daily responsibilities without adequate knowledge about the pharmacology of analgesics or the physiology of the pain process. This knowledge is essential, however, if the technician is to contribute maximally to the pain management strategies of his or her practice. Familiarity with the current principles of pain management, including preemptive and multimodal therapies, and prevention of the wind-up phenomenon are vital and must be put into practice. When technicians are appropriately trained in all these aspects of pain management, they become a vital force in the perpetuation of optimum care for surgical, medical, and chronically painful patients.

- Patient assessment
- Providing nonpharmacologic comfort and care
- Differentiating pain from other stress
- Requesting appropriate analgesia and sedation
- Administering medications and performing analgesic techniques
- Monitoring and treating drug effects
- Assessing patients after surgery
- Communicating with clients about hospital and at-home care
- Logging controlled substances

TREATMENT GOALS AND COMMUNICATION

The goal of providing the best pain management protocols for small animal patients is achieved when working together as a team. Communication among all members of the entire health care team, including veterinarians, veterinary technicians and nurses, assistants, and pet owners, is essential for consistent pain management. The veterinary nurse and veterinarian perpetuate optimum care through written and verbal communication. The veterinarian should write clear orders, including specific drug(s) and
initial dosages. Veterinarians should not fall into trap of “ticking the box” when it comes to pain management, however. In that case, once a particular analgesic is ordered, the subject is closed. Veterinary technicians have the responsibility of continually monitoring their patients and often develop a sense of which analgesics seem to work best under various circumstances.

TECHNICIAN AND CLINICIAN

Discussion about each case directly with the clinician should address particular concerns or expectations, potential for adjustments in analgesic regimens (eg, as needed injections to a constant rate infusion [CRI]), changes or additions to drug protocols (eg, adding a nonsteroidal anti-inflammatory drug [NSAID] or an adjunctive analgesic), or the possible addition of sedatives if needed. Once these guidelines have been established, allowing the nursing staff to decide when the drug is needed creates the most appropriate approach to pain management. This also empowers the nursing team to use their critical thinking, observation, and interpretation skills.

As previously mentioned, veterinary technicians often complain that their requests for patient analgesia go unheeded. The actual method of communication plays a large part in achieving a positive outcome. For example: “Can I give Charlie something for pain?” is inadequate to convey the situation and often results in a negative response. To be effective, technicians must present two sets of information: (1) what the patient is doing that indicates painfulness and (2) that which already has been done and considered inadequate. For example: “My patient Charlie, the black lab, which had a cruciate repair yesterday, is not doing as well as I would like. Despite the fact that his bladder is empty and I have offered him food and water, he seems restless and has difficulty in getting comfortable. He is panting excessively, although his temperature is normal. I checked the bandage, and it does not seem too tight. The record says he got morphine last night at midnight, which allowed him to sleep for 4 hours, but he has not had any since. Could we try a repeat dose to see if it makes him more comfortable? Or, because his biochemical profile is normal, would you consider administering a nonsteroidal analgesic?”

This approach delivers the necessary information to gain the veterinarian’s confidence in the technician’s assessment skills and knowledge of the case. He or she is much more likely to agree to administer pain medication under these circumstances.

Technicians can also play a vital role in the administration of preemptive medication, which is often overlooked in a busy hospital setting. For example: “I have really noticed a difference in the recovery of the animals who receive a dose of NSAID or hydromorphone before surgery. We have the preoperative blood work and the renal values are normal. Would you like me to give an NSAID to this patient now?” This approach should also be used when suggesting the placement of transdermal analgesic patches, starting CRIs, and performing local or regional nerve blocks.

TECHNICIAN TO TECHNICIAN

Overlap in schedules provides the team members time to discuss the animal’s case in detail before the shift change occurs. This exchange of information during rounds is vital in that it provides specific information, such as history, complications, current concerns, and treatment goals. Pain management issues, such as the appearance and behavior of the patient that prompted the administration of analgesics; the type, dose, and timing of previous analgesic administration; and the response and any adverse reactions after administration, should be described. This information can be used to guide treatment during the next shift and to improve the continuity
of care. Treatment objectives should also be clearly expressed at this time. For example, is a plane of steady analgesia with regular dosing optimal, or is weaning off the goal? It can be quite frustrating for the day shift to work to achieve a steady state of pain management only to have the night shift omit scheduled dosages because of misunderstood objectives. Conversely, a shift change allows for a fresh perspective. It is not uncommon, after a long shift, for staff to become accustomed and nonreactive to behaviors that may indicate discomfort to the incoming team. Completing a patient summary at the end of every night shift, including comments on the patient’s comfort level, provides a valuable source of information for incoming personnel who were not present for rounds and for retrospective pain management studies.

As Needed Orders

Giving technicians greater choice and control over pain management involves trusting their judgment and experience. After standing orders are established, the success of pain management relies on giving skilled technicians the freedom to give analgesics as needed, to adjust dosages when required, to administer adjunctive medications, and to potentially reverse drugs when severe adverse reactions occur. Most opioid orders should be on a set schedule; however, there must be the option to provide additional doses on an as needed basis. This gives the technician the ability to respond to patients quickly, without looking for authorization after the patient becomes painful. Conversely, as perioperative pain subsides, the requirement for every 4 hours dosing of an opioid may be reduced to every 5 or 6 hours, avoiding the unwanted adverse effects of too frequent dosing when not required. CRIs should be ordered with a dose range allowing the technician to titrate up or down easily depending on individual patient response. When appropriate, orders for additional sedation, if needed, can significantly improve pain management by removing the fear and anxiety that can exacerbate pain. When anxiety is assumed to be a component of abnormal behavior, bolus dosing or CRI using a low dose of an \(\alpha_2\)-agonist can be quite effective; however, patients must be healthy otherwise. Alternatively, especially when the patient may be older or there are cardiovascular concerns, acepromazine administered intravenously at a dose of 0.01 mg/kg (Karol Mathews, DVM, DVSc, personal communication, 2008) is an excellent sedative or anxiolytic. This dosing has no effect on blood pressure, as noted on direct blood pressure monitoring. The reader is referred to specific articles elsewhere in this issue for suggested pain management regimens.

Working with painful patients for long hours often creates a stressful environment for veterinary technicians. Technicians should be entrusted with the responsibility and freedom to administer agreed-on analgesics. Giving technicians a voice in the pain management process creates a truly positive team environment in which their thoughts and skills are valued. Patients ultimately receive better care, and technicians are satisfied knowing that they are doing everything they can to ensure the well-being of patients in their charge.

PATIENT ASSESSMENT

In current human medicine, preventing and treating pain is recognized as an essential part of overall patient management. In fact, pain is considered to play such an important role in overall health and well-being that it is now considered to be a fifth vital sign, ranking it of equal importance with temperature, pulse, respiration, and blood pressure. Not only do human health care providers view pain as a symptom of an underlying disease or condition, but they view pain as an important syndrome in its own right. This is attributable to the vast array of negative physiologic events attributable
to pain, regardless of the patient’s underlying disease or condition. There has been a lag in regulation of the approach to pain management in veterinary medicine; however, recent changes to the American Animal Hospital Association (AAHA) standards require that pain assessment be included in every veterinary patient assessment regardless of presenting complaint. Other requirements include making repeat regular assessments throughout hospitalization and recording of those assessments in the medical record. A full listing of the AAHA pain management standards can be found on the AAHA Web site.

In people and animals, pain triggers a series of physiologic changes that increase stress. Although the nervous system is the main target of nociceptive (pain transmission) information and provides the means for the body to react to that information, the body’s resulting response is not limited to the nervous system. Most, if not all, of the body’s major systems are affected by inadequately controlled pain. For example, the increased cortisol levels that can accompany pain may interfere with wound healing and reduce the immune system’s ability to work effectively. In addition to suppressing the immune system, increased sympathetic nervous system activity associated with unrelieved pain may result in increased catabolism and metabolic rate, anorexia, ileus, and atelectasis. The cardiovascular system is also adversely affected, resulting in increased heart rate and blood pressure, irregular heart rhythms, and coagulopathies. Reducing or suppressing the stress response by managing pain can minimize adverse effects on the cardiovascular system, including fewer cardiac arrhythmias. Given these potential consequences, it becomes obvious that, like human beings, animals in pain require more intensive medical care than those whose pain is adequately managed (see the article on The Stress and Distress Associated with Pain).

All patients should be evaluated for painfulness on admission and at regular intervals throughout the hospitalization period. Some pain signs may be obvious (eg, vocalization or agitation with increased heart rate, blood pressure, or respiratory rate). Subtle behavioral changes, such as restlessness, decreased appetite, insomnia, resistance to handling, and abnormal posture, are more common and often more significant signs. The observer’s subjective opinion and physiologic signs can be described using a pain scale, such as a visual analog scale (VAS). A VAS designed for use in nonverbal human patients uses pictorial rather than numeric rating systems. The main difference between a human VAS and an animal VAS is that in human medicine, the patient is the reporter of his or her own pain level, whereas in veterinary medicine, VAS readings are most often provided by a veterinary technician who is describing pain for the patient. As an example of a veterinary pictorial rating scale, see Fig. 1 for dogs and Fig. 2 for cats, wherein any score greater than 0 indicates a need for varying degrees of analgesia. Patients scoring 1 may be manageable on NSAIDs alone, whereas patients with higher scores are likely to need additional therapy, such as opioids, CRI, epidural, and anti-windup drugs. Regardless of the specific tool used, pain assessments should be made at 4- to 6-hour intervals throughout hospitalization in the general patient population and much more frequently in the critical care setting, wherein patient status is more dynamic. During the immediate postoperative period, and throughout the critical phase, patients should be monitored as often as every 30 minutes. For consistency, assessments should be performed by the same person whenever possible. Repeated recorded assessments allow evaluation of the efficacy of analgesic protocols and make the response to specific drugs more obvious. A complete patient description, including physiologic signs (eg, temperature, pulse, respiration) and behavioral signs (eg, vocalization, posturing, eating and sleeping habits) should be documented in the medical record. A simple chart system allows evaluation of the efficacy of the analgesic protocol (Fig. 3). The way to move the
The practice of pain management from a rote or happenstance event to a sound medical approach is by careful documentation of analgesic type, dose, frequency, and, most importantly, response throughout the treatment period. Documentation of the patient’s response to the analgesic protocol also helps to determine when discontinuation of analgesics would be possible.

Experienced veterinary technicians rarely need to be trained to recognize an animal in distress. With experience, technicians become skillful observers of behavioral changes in their patients, noticing the slightest expressions of potential pain. Most technicians also acquire a sense of how painful most procedures, conditions, and

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Fig. 1. Colorado State University Veterinary Medical Center Canine Acute Pain Scale. (Courtesy of P.W. Hellyer, DVM, MS, Fort Collins, CO.)
surgical procedures are likely to be, based on repeated prolonged exposure to animals in the recovery phase. Nevertheless, it is often difficult for even the most experienced technician to distinguish between pain and other stress (eg, fear, anxiety). Differentiating between pain and dysphoria after drug administration or anesthesia presents additional challenges.

**Differentiating Pain from Other Stress or Dysphoria**

Postoperative patients frequently display aberrant behavior for several minutes to hours after surgery. These behaviors may include vocalization, thrashing, rolling,
self-mutilation, and tachypnea. Often, it is difficult to discern between pain, other stress, and reaction to opioids or general anesthesia. Differentiation is critical for determining effective treatment (ie, additional analgesics, reversing the opioid, administering sedatives). Many veterinary professionals describe abnormal postoperative behaviors as “emergence delirium,” attributing the events to residual inhalant anesthesia. Anesthesia-related behaviors should resolve within several minutes. Behaviors that persist beyond a few minutes require further investigation and attention. Most animals experiencing mild to moderate pain can be temporarily soothed by speaking

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<tr>
<th>Drug Name</th>
<th>Dosage</th>
<th>Dose</th>
<th>Time Given</th>
<th>Route (CRI, IV, IM, SQ)</th>
<th>Time Effect Assessed</th>
<th>Observations</th>
<th>Interpretation</th>
<th>Scale Rating</th>
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Fig. 3. Analgesia/Response LOG. (Courtesy of Andrea Battaglia, Syracuse, NY.)
in low tones during a petting interaction, although painful behaviors normally resume when the patient is left alone. These patients seem to recognize that someone is with them and usually make eye contact. A patient who stops the abnormal behaviors in the presence of a calming person is likely to be in pain rather than having a drug reaction; however, this may not typify the response of a patient who is consumed by severe pain or is extremely anxious and not painful. Claustrophobia, usually in medium- to large-sized dogs that occupy most of the cage, also contributes to anxiety and vocalization. Painful animals also respond when the area around the source of pain is gently palpated. This should confirm the suspicion of painfulness and prompt the administration of additional analgesics. Animals that are dysphoric or “delirious” because of opioid overdose rarely respond to soothing interaction or to light palpation of the painful area. These patients may benefit from sedation or partial opioid reversal using careful titration, which is usually reserved for patients who do not respond to distraction or sedation or have a physiologic condition that is of immediate medical concern. Recently, treating otherwise healthy patients with a combination sedative analgesia drug, such as a low-dose \( \alpha_2 \)-agonist, has become popular in the immediate postoperative period.

**SOUND APPROACH TO ASSESSMENT**

Historically, animal pain has been recognized and treated only in those patients that display overt behavioral signs, such as vocalization. By requiring animals to show dramatic signs, patients are forced to prove that they are in pain before they are given analgesics. In reality, many animals instinctively hide pain just as they would in the wild to avoid becoming prey. Some may be too ill or injured to have the resources available to commit to behavioral change. By the time these animals do show obvious signs of pain, its intensity is likely to be severe. Patients should never be required to prove they are in pain. A sound approach to pain management favors anticipation of the severity and duration of pain that is likely to occur with any procedure, condition, or operation. A list of anticipated levels of pain associated with surgical procedures, illness, or injuries is available.

Categorization of the expected severity (mild, moderate, or severe) of pain is used to establish the initial type of analgesia and the duration of treatment. Dosages can be adjusted later according to individual patient needs. Baseline treatment is chosen based on knowledge of the mechanisms of pain; drug dosages and expected duration; pain assessment; and the knowledge of the expected levels of pain for injury, surgery, or diseases. The initial approach should be based on the following questions:

- How painful is the condition, procedure, or surgery expected to be?
- Are there any underlying factors, such as stress, anxiety, fear, or preexisting chronic pain conditions, that could intensify acute symptoms?
- What is the normal behavior or disposition of the particular breed and for this animal in particular?
- Are there any contraindications to particular drugs or drug classes for this patient’s condition?
- Does this animal have a history of drug sensitivities?

**Nonpharmacologic Interventions**

Pain likely has physical and psychologic components. Fear and anxiety can exacerbate pain and vice versa. Attending to an animal’s physical and perceived emotional needs can reduce stress, and consequently minimize pain levels. A blind or deaf
patient has special needs, because the stress is compounded by these disabilities. Also, environmental factors seem to affect the perception of pain in pets. The hospitalized patient is in unfamiliar surroundings and may be comforted by a favorite blanket or toy.

Veterinary technicians must be adept at “reading” patients, because the emotional needs of individual dogs and cats vary greatly. A comforting hand or a soothing voice can ease stress and make pain assessment easier. Skilled technicians know when a visit by the owner would be therapeutic and when it would more likely create anxiety in the patient. Astute technicians can also sense which animals are likely to recuperate better in a quiet environment and which patients are best distracted by exposure to a more active area of the hospital.

Patient comfort can be improved by minimizing painful procedures. Many nursing interventions, such as venipuncture and injections, cause pain. This can be reduced by coordination of required laboratory tests and treatments to minimize the total number of painful events. Increased technical skill also reduces the intensity of related pain. Patient protective policies such as a “two-stick rule” (any individual should attempt venipuncture or intravenous catheter placement no more than two times) should be instituted.

Animals have the potential to injure themselves in response to pain, such as an animal recovering from general anesthesia that may be weak and disoriented. Many problems can be avoided by providing a cage of appropriate size, with extra padding and careful positioning to reduce pressure on painful areas, also keeping in mind patients that have preexisting painful conditions, such as arthritis. Cages must be kept clean and dry, and patients should be groomed regularly. Fresh food and water should be available, and opportunities should be created for animals to receive sunshine and fresh air. Physical therapy and warm compresses help to relieve pain after orthopedic procedures.

Wherever the patient is housed in the hospital, environmental stressors caused by continual activity and disruption can be reduced by playing low soothing music or a white noise machine and by installing a dimming switch for the lights. The patient’s cage should be designated as a safe zone, and all procedures considered noxious should be performed elsewhere whenever possible. This allows for the animal to feel comfortable and safe when in the cage.

Given the potential for a varying number of treatments required for the individual patient, care must be taken to allow for periods of undisturbed rest. Grouping treatments to reduce the number of disruptions is optimal. Also, so that animals do not associate contact with an unpleasant experience, initiate a “three-one rule”. For every time the animal is exposed to an uncomfortable situation or invasive procedure, follow with three positive experiences, such as a petting, grooming, or feeding.

Providing these adjunctive nonpharmacologic actions can reduce pain and reduce the analgesic drug requirement by removing other stressors. Tending to patient’s comfort needs should not be seen as a substitute for analgesia, however.

PRINCIPLES OF ADMINISTRATION OF ANALGESIA

Our improved understanding of the impact of pain on the body is shaping new philosophies in managing patient pain. Several basic principles are used in the approach to designing analgesic protocols and are particularly important in the perioperative period.

- Administering preemptive analgesics whenever possible seems to be much more effective than using the same agent to treat pain once it occurs. Analgesia given
before a noxious stimulus reduces postprocedure analgesia requirements, minimizes detrimental effects of pain, improves patient handling, lowers sedation or anesthetic requirements, and reduces hypersensitization.

- Use multimodal analgesia to take advantage of the synergistic effects obtained by combining two or more classes of analgesic drugs to alter more than one phase (transduction, transmission, modulation, and perception) of nociception. Drug combinations often produce better pain relief than single agents, thereby reducing the amount of each drug used and minimizing the risk for side effects.
- Match analgesics (based on dosage and duration of action) to the degree of expected surgical pain rather than to the patient’s ability to express pain in a recognizable way.
- Maintain an analgesic plane once pain control is established. This may include scheduled intermittent dosing and additional administration (as needed) as indicated by patient response. For moderate to severely painful procedures or for more critical patients, the use of epidural analgesia and CRIs may be warranted. Analgesics may be gradually tapered off as patients improve (see the articles by Dyson elsewhere in this issue).

**Analgesics and Analgesic Techniques**

There are a variety of techniques for administering analgesics. Trained technicians are able to deliver drugs by oral, transmucosal, subcutaneous, intramuscular, intravenous, transcutaneous, epidural, and CRI routes. Detailed descriptions of many analgesic techniques are available elsewhere and in various articles in this issue.

Given the fragile, transient, or unknown cardiovascular status of critically ill patients, opioids are often the analgesia of choice. The route of administration should be intravenous or intramuscular for maximal drug absorption. In conjunction with opioids, local and regional blocking techniques can be used safely in several patients. When specific nerves cannot be identified for blockade in dogs, lidocaine can be administered intravenously by CRI for systemic analgesia. Administering drugs by CRI provides excellent control and reduces the overall lower dose of individual agents.

When using an opiate alone, beginning in the middle of the recommended dose range is usually appropriate, with the option to increase the dose if pain behaviors persist or recur sooner than expected. Some animals may not exhibit typical signs of pain or may have a history of not reacting well to typical dosages of analgesics. In those situations, the dosage can be started at the low end and increased incrementally until effective pain control is achieved. With the titration approach, the technician monitors for subtle changes ensuring adequate analgesia and avoiding adverse drug reactions, such as nausea, panting, or an increase in anxiety. If an opioid is not effective, it may need to be given in conjunction with other analgesics. This may involve adding another analgesic class, such as an NSAID, CRI of lidocaine, ketamine, or \( \alpha_2 \)-agonist, or placing a fentanyl patch for long-term care. This approach may allow for a lower dose of opioids to be administered, avoiding the potential development of dysphoria seen with higher doses.

**Monitoring Patients on Analgesics**

One of the most common reasons given by veterinary professionals for withholding analgesics is fear of side effects. In reality, adverse side effects associated with appropriate doses of analgesic drugs are rare. Opioid-induced respiratory compromise is most often mentioned but is of much greater concern in human patients than in
animals. In fact, pain can sometimes play a much greater role in limiting respiration than opioid effects.

Another concern often voiced is “the inability to monitor patients effectively” when analgesics are given. On the contrary, pain can cause several aberrant physiologic findings (eg, tachypnea, tachycardia, elevated body temperature, panting, increased blood pressure, restlessness) and severely limits the ability to assess other causes of this sympathetic response. Managing pain appropriately actually eliminates the pain-induced sympathetic response. Therefore, continuing tachycardia or tachypnea, for example, indicates a physiologic response to abnormal condition(s), allowing for more accurate monitoring of the true physiologic status in most cases. Veterinary technicians should also monitor for the possible adverse effects of analgesic agents during the perioperative period and throughout the course of treatment. Monitoring includes temperature, pulse, heart rate and rhythm, respiratory rate and ventilatory nature, and arterial blood pressure (Table 1). Activity level, behavior, and ability to move are also noted.

**Weaning from Analgesic Therapy**

As patients recover, the level or mode of pain management is decreased or altered to prepare for discharge from the hospital. CRIs are discontinued by slowly decreasing the dose (rate of administration) over a period of hours. Additional bolus injections may be necessary during the weaning phase if the animal begins to display an increased pain response. Fentanyl patches, oral opioids, or NSAIDs can be used in the transitional phase. A combination of analgesics is required until therapeutic levels of fentanyl are reached after the patch is applied. This time may range from 6 to 12 hours in the cat and from 12 to 24 hours in the dog. Do not supplement with butorphanol or buprenorphine. Keen observation is required during this phase so as not to allow managed pain to resume.

**SPECIAL CONSIDERATIONS IN THE INTENSIVE CARE UNIT**

Critically ill patients present unique challenges in terms of pain recognition and treatment options.9 The analgesic needs for this patient population are likely to be increased over those of more stable patients. Choosing the correct analgesic therapy requires an understanding of the pharmacokinetics of a wide range of drugs and

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<th>Table 1</th>
<th>Recommended monitoring techniques for analgesic adverse events</th>
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<td>Agent</td>
<td>Adverse Effect</td>
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<tr>
<td>Opioids</td>
<td>Sedation, dysphoria, low blood pressure, respiratory depression (rare), panting, hyperthermia</td>
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<tr>
<td>Local anesthetics</td>
<td>None unless given by CRI; then, nausea, vomiting, neurologic signs, and seizures</td>
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<tr>
<td>NSAIDs (ensure no contraindications before administration)</td>
<td>Gastrointestinal disturbances, gastrointestinal bleeding, renal disturbances</td>
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<tr>
<td>α2-Agonists</td>
<td>Bradycardia, cardiac arrhythmias, hypertension, and peripheral vasoconstriction</td>
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the levels or types of pain associated with various conditions. Failure to manage pain adequately in the critically ill impedes recovery and can contribute to patient morbidity and mortality. Although critically ill patients may be in the greatest need of pain relief, they are often the least likely to receive it because of persistent fears regarding drug side effects and overall ability to monitor progress. In fact, the physiologic signs accompanying pain, particularly tachypnea, tachycardia, and blood pressure changes, obscure the ability to provide true monitoring of patient condition. Until pain and its myriad of signs are removed from the equation, it is impossible to assess a critical patient’s metabolic needs accurately.

Special considerations are raised for animals with specific critical disorders. For example, the selection of pharmaceutic pain management for an animal with head trauma must be approached with caution. Pharmacologic alteration of central nervous system activity can occur, making it difficult to assess changes in behavior and mentation. Similarly, analgesic selection for pregnant or lactating animals and for extremely young animals requires special consideration (see the articles by Mathews elsewhere in this issue). Selection of analgesics may also need to be approached with caution in animals with other medical conditions, such as pancreatitis or other severe gastrointestinal disturbances, renal disease, or those receiving medication for unrelated problems. Understanding the pharmacology of analgesic drugs and the associated side effects plays a key role in treatment for critical patients. Severe trauma or illness is never a reason to withhold using pharmaceutic pain management, however. It is a reason to be more creative with pain management protocols (see the article by Dyson elsewhere in this issue).

SUMMARY

Effective pain management is not an individual endeavor. It requires a team approach involving everyone who participates in patient care. Veterinary technicians constitute a vital force in this effort. A successful technician understands the goals of pain control and the analgesic options. Combining keen observation with good technical skills, the technician functions as a true patient advocate who appropriately assesses requests and administers analgesics to his or her patients. Veterinary technicians have played a vital role in bringing animal pain management to the forefront of veterinary practice. Through continued teaching and vigilant practice, technicians should be credited in large part for the continuing change in pain management standards.

REFERENCES