The following pain management protocol is tiered to ensure a global relevance, recognizing that not all analgesic modalities are available to veterinary practitioners and vary from region to region around the world. Its implementation will be guided by the various analgesic modalities available along with the needs of the individual patient requiring treatment. This protocol is reproduced from the WSAVA Pain Committee guidelines, a succinct yet comprehensive review of pain assessment, various pain modalities, and the treatment of various clinically painful scenarios in both dogs and cats. The WSAVA Pain Committee Guidelines are published in the Journal of Small Animal Practice and is available for open access at the Pain Committee pages of **www.wsava.org.**

EMERGENCY AND CRITICAL CARE

Injured or ill animals require analgesia for painful conditions as well as diagnostic and emergency procedures. Due to their safety, opioids are the mainstay of immediate analgesia in the intensive care unit (ICU), and most also provide some degree of sedation, which may facilitate restraint for procedures and diagnostics (see Chapter 2.2 of the Guidelines). Intravenous access should be achieved as soon as possible so that volume deficits can be corrected, and additional analgesics and sedatives can be titrated to effect.

In general, short-acting opioids are preferred, and titrated to an effective dose by starting with 10-20% of the recommended dose, and incrementally increasing until establishing a positive response (i.e. pain relief) while avoiding adverse effects. A CRI can be started afterwards and adjusted as the patient is stabilised and frequently assessed.

NMDA antagonists such as ketamine may prevent or treat central sensitisation particularly in cases of invasive and severe pain involving a neuropathic component. Ketamine infusions can be started concurrently or after opioid therapy. The drug must be administered as an infusion as boluses are short-acting and more likely to induce behavioural changes. In dogs and cats, lidocaine may also be given IV (loading dose and infusion), but lidocaine infusions should be used cautiously in cats due to the risk of haemodynamic compromise. The CRI rates should be adjusted based upon pain assessment, patient tolerance, and response; for example, rates can be increased for break-through pain, and decreased if the patient becomes heavily sedated and difficult to arouse.

Non-steroidal anti-inflammatory medications can be valuable in emergency and critical care situations, but should be withheld until volume, cardiovascular and renal status are stabilised, and with diseases that do not involve the gastro-intestinal system. When not contra-indicated, the anti-inflammatory effects of NSAIDs can be valuable for decreasing secondary inflammatory cascades. Likewise, low-dose alpha$_2$-adrenoceptor agonists (dexmedetomidine, medetomidine) can be part of multimodal analgesia and provide sedation and muscle relaxation.

Managing stress, fear and anxiety are also an important consideration in critically ill, hospitalised cases and can be addressed with medications (e.g. trazodone, acepromazine or gabapentin), nursing care, and low-stress handling techniques.

For additional pharmaceutical dosing information, see the dosing tables in the WSAVA Pain Committee Treatise at www.wsava.org

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