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ANESTHETIC PROTOCOLS IN PATIENTS WITH CHRONIC KIDNEY DISEASE

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The kidneys perform important functions such as hormone secretion, electrolyte balance and filtration. When there is an inflammatory process of the nephron, there will be loss of function leading to kidney injury. Nephropathy can be aggravated pre and postoperatively, it is essential to use the correct anesthetic protocol in order to avoid the occurrence.

The objective is to present possible problems with the use of anesthesia in carrier animals, leading to the understanding of the disease, expression of clinical signs and diagnosis of animals with acute kidney disease, in addition to exposing the appropriate anesthesia protocol for nephropathic animals.

In pre-anesthetic medication, we cite acepromazine (phenothiazine) with vasodilation effect by blocking alpha 1 adrenergic and dopaminergic receptors causing hypotension, but it has a protective action on renal blood flow monitored by systemic blood pressure. Xylazine, dexmedetomidine and medetomidine (alpha-2 adrenergic agonists) decrease cardiac output and the effects can be varied according to the route of administration. Dexmedetomidine minimizes catecholamine concentration and heart rate in a dose-dependent manner, but maintains hemodynamic stability. Diazepam and midazolam (benzodiazepines) promote a sedative effect by inducing GABAergic receptors, have minimal cardiovascular effects, and midazolam is more convenient in patients with CKD (chronic kidney disease) in a water-soluble form.

Fentanyl, alfentanil and methadone (opioids) cause little kidney damage and can be used for analgesia and sedation, with the exception of morphine. For induction, there is thiopental (barbiturate) that causes little change in glomerular filtration rate and blood flow, but is excreted via the kidneys and may change the distribution of the drug due to metabolic acidosis or azotemia. Propofol has rapid induction, potentiation of the inhibitory effects of GABAergic receptors and is safe in cases of RHD because it limits action on blood flow and decreases the glomerular filtration rate. Etomidate does not change the filtration rate, but its application in smaller doses is advisable.

In maintenance, inhalational anesthesia is recommended and isoflurane is recommended, which has a very low level of metabolism and does not affect the kidneys. Based on the classification of CKD, it is possible to define the therapeutic approach according to the pathophysiology of the disease, assessing whether the patient is prepared for an anesthetic plan together with laboratory tests such as blood count, biochemical and urinary tests to avoid risks such as worsening preoperative nephropathy. or kidney injury that can lead to death. The recommended protocol is composed of methadone or fentanyl, propofol and isofluorane.

Aware of the need for anesthetics, it is important to have knowledge of the different protocols, since these are patients with chronic kidney disease, affirming the responsibility of the professional to choose the protocol with caution, knowing the importance of the kidneys for filtration, reabsorption and secretion.