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SICK AND TIRED: NURSING CARE OF THE CRITICAL GERIATRIC PATIENT

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The understanding of geriatric medicine in dogs and cats is a growing discipline. Advances in available preventative measures and treatments of diseases, advances in nutrition, and the willingness of people to economically invest in their pets, have greatly expanded the life span and expectancy of companion animals. When older animals gets sick, it is essential that the veterinary technician is able to provide the nursing care that this special group requires.

Dogs and cats are generally considered to be geriatric or senior at age 7 and up. Veterinary professionals know that senior animals have special needs. Veterinary technicians should play an important role in educating owners about these special needs. Early detection of diseases in older age can provide an opportunity for early intervention and the potential for better outcomes. Many owners ignore early signs of disease and attribute them to “old age”. Client education is essential to help owners realize that early detection and intervention is important. Senior animals should visit their veterinarian twice yearly for physical examinations and health screening.

Aging is defined as the accumulation of progressive body changes associated with or responsible for disease, decreased physiologic function, and death. It is important to note that old age is not a disease. There are several factors that determine the life span and expectancy of an individual animal and these factors vary by species. Genetics, acquired diseases, and environmental factors and stressors are all contributors. Aging patients often have a combination of diseases that affect multiple organs at varying degrees. Consequently, there are a higher number of medication interactions to consider in these patients.

Changes in the cardiovascular system cause a decrease in cardiac output and an increase in vascular resistance. Hepatic blood flow may be decreased due to decreased cardiac output. Since the liver metabolizes most drugs, it is important to recognize that there may be decreased metabolism and prolonged excretion of medications in geriatric patients. Hepatic and renal function should always be considered when administering drugs in the geriatric patient.

Renal function declines progressively with age and varies between individuals. Diabetes, hypertension and vascular disease may significantly worsen renal function. Often drug doses need to be adjusted to avoid toxic accumulation of drugs and metabolites due to decreased renal clearance. Keep in mind that geriatric animals that have normal renal and liver values on blood chemistry analysis have the potential to still have reduced renal and liver function.

Lung function declines during aging and illness or surgery make geriatric patients at risk for pulmonary related complications. Geriatric patients have decreased respiratory muscle strength and stiffer chest walls that result in reduced lung compliance. Mucous membranes tend to be drier and there is a decreased cough reflex, which may increase the risk for aspiration. In addition, geriatric patients are unable to respond as well to hypoxemia and hypercapnia. Older animals have a reduced lung reserve capability and exercise tolerance and therefore are at risk for dyspnea with exertion. Extra care in positioning must be taken for critical, recumbent, geriatric patients, as there is a high degree of risk for aspiration and atelectasis.

Geriatric patients affected by disease(s) often require drug therapy to treat and alleviate symptoms. Since veterinary technicians are usually the ones administering medications, they should be aware of common drug interactions, and the factors in which an aged animal will be affected by the absorption, distribution and biotransformation of medications. Human geriatric patients have a 2-3x greater incidence of adverse drug reactions than younger patients receiving the same medications. Patients with multiple diseases may be treated with multiple drug therapies, increasing the possibility of drug incompatibilities. In addition, aging organ systems may not be able to metabolize drugs the same way younger patients can, which increases the chances of adverse drug reactions. When choosing drug therapies, several factors should be considered. Clearly, cost is a factor as well as the ease of administration of the drug. The potential side effects of the drug should be considered in relationship to the animal's existing symptoms. When administering oral medications, consideration should be given as to whether or not the patient has gastrointestinal symptoms, or has a condition that could alter GI absorption. Oral drug administration can be potentially stressful in patients who are having difficulty breathing, or whose oxygen supply is decreased during administration, such as an animal housed in an oxygen cage. Aggressive or fractious animals present another challenge to oral medication administration. Absorption rates of drugs administered subcutaneously or intramuscularly may be affected by muscle mass and percent body fat of the patient.

Veterinary technicians should be particularly aware of the special needs of geriatric patients when administering anesthesia. The combination of the patient having multiple, concurrent diseases and decreased organ

reserve presents a real challenge to the anesthetist. Geriatric animals undergoing anesthesia should be very closely monitored. Anesthetic protocols should be designed for each individual patient with the goal of selecting drugs that have minimal cardiopulmonary depression, are easily metabolized, and selecting drugs that can potentially be reversed. Drug dosages should be calculated using ideal body weight, not actual body weight in obese patients. The anesthetist should recognize that anesthetic agents, sedatives, and tranquilizers have the potential to have a more profound effect on geriatric patients. Drugs should be administered to effect and not be given in standard doses. Geriatric patients, especially those with decreased muscle mass and fat reserves, are at greater risk for hypothermia. Supplemental heat sources should be used with great care given to avoid thermal burns. Fluid therapy should be carefully calculated to consider the cardiovascular, respiratory, and renal statuses of the patient. Since geriatric patients are more prone to hypotension during anesthesia, it is imperative to know if the patient has underlying renal, respiratory, or cardiovascular disease. Fluid boluses to correct hypotension may not be an option in this population of patients and the anesthetist should have alternatives in mind, such as the judicious use of pressors. Geriatric patients are at increased risk of developing renal failure following anesthesia and surgery due to the fact that anesthesia can further decrease renal blood flow. Hypotension, hypovolemia, hypoxia, and hypercarbia can cause further renal damage to a patient with diminished renal function due to old age.

Post-operative patients also present a unique set of challenges. Geriatric patients often have longer post-anesthetic recovery periods. Supplemental oxygen should be administered to the geriatric patients for a longer timeframe during anesthetic recovery to support the potential for decreased respiratory function, which may be present in the aged patient. Geriatric patients are at greater risk for aspiration as they have diminished laryngeal reflexes. Anesthetic agents can often affect the already diminishing cognitive function in older patients. Geriatric patients should be repositioned frequently during the post-operative period to avoid lung atelectasis, blood flow stasis, and decubital ulcer formation. The use of multiple layers of padding in the cage is essential for patient comfort and cleanliness. Post-operative patients who have undergone major surgery or who have sustained trauma, may need significant help in getting up and ambulating. The use of physical therapy slings, harnesses, and providing traction on slippery floors will help an animal be able to walk and reduce their anxiety of feeling like they are going to slip and fall. Passive range of motion of limbs and massage therapy will stimulate circulation and help preserve joint mobility. Whenever possible, physical therapy should be used to prevent muscle tone and muscle mass loss.

Veterinary technicians are inherently caregivers and nurturers. Therefore, quality of life issues are usually causes of stress in our chosen profession. In geriatric patients, quality of life issues are especially of concern when end of life decisions need to be made. Technicians are especially valuable at counseling owners, especially when there is a long-standing relationship with the client. Our goal as veterinary professionals should be to enhance and protect the quality of life for our patients. In human terms, quality of life is the level of satisfaction one has with one's own life. It is a subjective and objective measurement of the level of pleasant and unpleasant feelings an individual has in their overall life. "Feelings" can be further broken down into pleasant feelings and unpleasant feelings, and those feelings can be either physical or emotional in nature, keeping in mind that a physical feeling can cause an emotional response. Physical feelings include the following: pain, nausea, hunger, thirst, weakness, hypoxia, and pruritus. Emotional feelings include the following: anxiety, fear, depression, frustration, and separation anxiety. When quality of life starts to become an issue, our goal is to try to strike a balance between the pleasant and unpleasant feelings our patients are experiencing. When we are no longer able to keep the balance in positive territory, it is appropriate to start having end of life conversations with the owner.

Geriatric patients present many challenges to us and require critical thinking skills to help care for them effectively. That being said, these animals in their golden years deserve the very best care, which includes a symbiotic relationship of good medicine and TLC.

References available upon request.

Keywords: aging, atelectasis, geriatric, recumbent, senior