

Geriatric Psittacine Medicine

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KEYWORDS

• Aging • Arthritis • Atherosclerosis • Cataracts • Neoplasia

Geriatric is defined as “related to old age.” The determination that a bird is geriatric should therefore be based on knowledge of the average life expectancy of that species. Few psittacine species have been raised in captivity in significant numbers and subsequently reached geriatric status to determine at what age geriatric changes begin to occur. A preliminary table of ages for psittacine species at which they are considered geriatric has been developed, but it is anecdotal.¹ In addition, nutrition, genetics, and exercise are all major factors that can either expedite or delay changes related to aging. For purposes of discussion, geriatric is defined as the age at which medical conditions associated with aging in other species are currently being reported in psittacines.

In addition to overt disease, issues in geriatric patients include preservation of functional ability/mobility, recognizing and providing supplemental care needs, and quality of life concerns.

EVIDENCE-BASED MEDICINE

The term “evidence-based medicine” (EBM) has come into common usage in veterinary medicine, and is often used incorrectly. The consequence of this is hesitancy on the part of some veterinarians to attempt treatment when there are no controlled studies published on a given condition. If treatment is attempted, there may be concern that sharing the outcome with colleagues may lead to liability or ridicule.

The term “evidence-based medicine” is borrowed from human medicine, in which it is applied to the individual practitioner and to entire health care systems. It involves the analysis of existing data, including the critical statistical analysis of the validity of those data, as they relate to a particular treatment of a disease in a given population. As further defined by the Centre for Evidence-based Medicine, “Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.”² Randomized, double-blind, placebo-controlled trials involving a homogeneous patient population and medical condition are the most reliable in establishing risk versus benefit ratios and recommendations

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for patient care. However, this information is not readily available in veterinary medicine, much less in specific species of exotics.

The principles of EBM do not suggest that treatment options should not be offered in the absence of a high level of confidence in the efficacy of a drug or treatment protocol. On the contrary, the principles state that when scientific evidence is lacking, of poor quality, or conflicting, such that the risk versus benefit balance cannot be assessed, clinicians should help patients understand the uncertainty surrounding the clinical service or treatment.

Veterinarians, especially in avian medicine, seldom have the support of controlled studies in any treatment of disease conditions. A few simple guidelines should allow exploration of treatment modalities for avian patients without concern for legal ramifications or derision from colleagues. Veterinarians must be:

1. Hesitant to extrapolate from other species when a drug or treatment carries significant risk of negative side effects
2. Cognizant that in clinical practice, concurrent changes (eg, improved diet and husbandry) and tincture of time may simulate efficacy for a given treatment
3. With the owners' informed consent, willing to treat avian patients with medication and other procedures for which there is no documented species-specific efficacy or safety, when not to treat presents a greater risk, "in our best conscientious, explicit and judicious interpretation of current best evidence."

Numerous medications have been discovered inadvertently, and the method of action of many others is still unknown. A lack of research does not indicate a treatment is ineffective, only that its effectiveness is not known. Veterinarians should share their anecdotal findings (positive and negative) honestly with other veterinarians. EBM is dependent on these initial anecdotal observations for direction.³

WHY GERIATRIC PSITTACINES ARE ATYPICAL

The life expectancies of birds are considerably longer than those of comparably sized mammals. This fact is of research interest and relevant to veterinary care for geriatric psittacine patients.⁴

Models for Human Aging

The metabolic process in all animals produces free radicals that can damage DNA. Therefore, it is counterintuitive that birds with high metabolic rates have some of the slowest rates of senescence. Poultry and caged birds are increasingly being used as models for the study of cellular damage, including degenerative neurobiology. For instance, the enzyme telomerase allows for replacement of short pieces of DNA known as telomeres, which are otherwise lost when a cell divides. Telomerase is considered an antiaging enzyme, preventing the degradation of cell chromosomes by allowing the replacement of terminal DNA. The expression of telomerase is downregulated with age in humans. This downregulation is believed to serve as protection against neoplasia, because high telomerase activity is associated with neoplastic processes. However, in 4 species of long-lived birds tested, telomerase activity was maintained throughout the lifespan of the birds, with the longest-living birds (storm petrels) having the highest telomerase activity in most tissues tested.⁵

Although the overall incidence of neoplasia increases with age in the bird species for which there are data (poultry and quail), discrepancies between the incidences of different neoplasias in older birds may elucidate the role telomerase plays in certain types of cancer.⁶

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