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MANAGEMENT OF GERIATRIC HORSES

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Many geriatric horses (>20 years old) are able to maintain good to excellent body condition and health on normal maintenance rations. However, weight loss is not uncommon in old horses, especially in severe weather. Geriatric horses often suffer the adverse effects of irreparable dental abnormalities (tooth loss, wave mouth), chronic intestinal parasitism and pituitary dysfunction. If renal or hepatic function is reduced, tolerance of excess calcium and edible oils respectively may be adversely affected. Chronic pain associated with arthritic changes may exacerbate problems with appetite.

Evaluation

When confronted with a failing older horse, the first step should be to thoroughly evaluate what the horse is being fed, determine if there have been any recent changes in diet or environment and check the schedule of anthelmintic administration. Merely changing the horse to a better quality feed or hay will frequently solve the problem. Changes in environment can be particularly stressful to aged horses. Competition from new herd mates or loss of a herd companion can result in reduced intake and weight loss. Old horses are more sensitive to extremes of weather than are younger horses, regardless of body condition or pituitary/thyroid function (Ralston et al., 1988). Geriatric horses should have adequate shelter, though confinement to a stall can exacerbate orthopedic problems and stiffness. Intestinal parasitism may reduce digestive capabilities due to chronic mucosal damage and scarring.

The horse should be given a thorough physical examination, especially with regard to its teeth. Correctable dental abnormalities (sharp points, hooks, broken or infected molars) should be amended. Because most of these horses do not have much tooth growth left, overcorrection or aggressive floating should be avoided if possible (Scrutchfield et al., 1996). Before instituting dietary changes, blood should be drawn for blood chemistry and complete blood count to rule out medical causes of weight loss such as chronic infection, renal dysfunction, or hepatic failure. The standard indices for renal and hepatic function can be applied to the geriatric horse (Ralston et al., 1988). Chronic laminitis or infections, hyperglycemia and/or hyperinsulinemia following a glucose challenge, polyuria/polydypsia and hirsutism are suggestive of pituitary dysfunction (equine Cushing's disease), which is extremely common in geriatric horses (Ralston et al., 1988; Dybdal et al., 1994). If these signs are present the horse should be tested. A modified dexamethasone suppression test (MDST) is the single most sensitive and specific test for pituitary dysfunction (Dybdal et al., 1994). For the MDST a baseline blood sample is drawn followed by administration of 40 g dexamethasone/kg body weight IM between 12 PM and 4 PM. The second blood sample is drawn 20 to 24 hours later

(Scrutchfield et al., 1996). Cortisol concentrations exceeding 1 g/dl 20 to 24 hours after dexamethasone administration indicate pituitary dysfunction (Dybdal et al., 1994). A simple screening test for hyperglycemia/hyperinsulinemia can be employed to assess the need for the MDST. A blood sample can be obtained for glucose and insulin analysis before and then 1 to 2 hours after feeding the horse 3 lb of concentrate, preferably a sweet grain mix (Ralston, 1989-1998). If the values reported for the two samples differ by more than 100 mg/dl for glucose or by more than 200 IU/ml for insulin, these results are strongly suggestive of pituitary dysfunction (Ralston, 1989-1998).

Feeding Failing Older Horses

If there are no medical problems other than pituitary dysfunction and/or poor dentition, I recommend switching the horse to a ration formulated specifically for geriatric horses. All changes, however, should be done slowly. Long stem hay may still be offered as long as choke is not a problem. Most of the major feed companies now offer "geriatric" feeds (usually have the word "senior" or "vintage" in the product name) that are supplemented with water soluble vitamins and which contain 12-16% protein, <1.0% calcium, and 0.45-0.6% phosphorus. Most are designed to be "complete" feeds and contain at least 12% crude fiber. These feeds are usually either "predigested" or extruded to increase digestibility for the geriatric horse. Hay cubes can be used as a forage source if the horse has a problem chewing long stem hay. The hay cubes should be a mixture of grass hay or the whole corn plant and alfalfa, rather than straight alfalfa due to the high calcium content of alfalfa.

Cautions

Calcium intakes in excess of need result in high urinary calcium excretion in horses (Lewis, 1995). In my experience, there is an unusually high incidence of renal calculi in otherwise clinically normal geriatric horses fed straight alfalfa. Therefore alfalfa and beet pulp, both relatively high in calcium, should be used with caution in failing older horses. Sweet feeds (>3% molasses) may exacerbate glucose intolerance and also should be used with caution in horses with pituitary dysfunction. Hay cubes and pelleted/extruded geriatric feeds can be soaked in water to make a slurry if choke or impactions are a problem.

Supplements

Vegetable oil (1 to 2 cups per day) may be added to the ration for extra calories, but must be introduced slowly. Aged horses were documented to have lower plasma ascorbic acid than younger, healthy horses and the cause of this has yet to be determined (Ralston et al., 1988). However, vitamin C supplementation (10 gm twice a day) increased antibody response to vaccines in aged horses, especially those with pituitary dysfunction (Ralston and Quackenbush, unpublished data) and in my experience helps old horses with chronic infections.

Other Considerations/Treatments

If chronic pain due to arthritis appears to be a contributing factor to weight loss, the horse may be administered small amounts of anti-inflammatory or glucosamine/chondroitin sulfate compounds. Nontraditional therapies such as acupuncture have also been effective in some cases. Confinement appears to exacerbate stiffness and pain, so horses should be turned out as much as possible (Ralston, 1989-1998).

If pituitary dysfunction is present, consideration should be given to treating the horse with either cyproheptadine (0.6 – 1.2 mg/kg BW) or pergolide (0.005-0.01 mg/kg BW) in addition to dietary modifications (Beech, 1987). Although these drugs are not approved for use in horses, they can be effective in reducing clinical signs associated with pituitary dysfunction (Beech, 1987; Beech, 1995). Both drugs should be started at the lower dose and increased slowly over the course of two or three weeks. If signs of anorexia or depression develop, the dose should be reduced. Note that the cyproheptadine dose is based on metabolic weight, rather than the conventional body weight. Cyproheptadine causes fewer side effects and is less expensive than pergolide, but it is not as effective (Ralston, 1989-1998; Beech, 1995).

If renal or hepatic dysfunction are present, lower concentrations of protein (8-10%) and higher concentrations of carbohydrate should be fed (Lewis, 1995; Ralston, 1989; Ralston and Breuer, 1996). Grass hay (chopped or cubed), corn and/or barley are the feeds of choice. Beet pulp may be used as a roughage source for horses with hepatic disease, but should be avoided in horses with renal disease due to its high calcium content. Vegetable oil may be used as an additional calorie source for horses with renal disease but not for horses with evidence of hepatic dysfunction due to the danger of hyperlipidemia. Digestive aids such as yeast cultures may be of benefit.

Summary

Just because a horse is old does not mean it has to be thin and in poor health. With proper attention to dentition, ration and veterinary care, horses can maintain excellent body condition and health well past thirty years of age.

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