

FOCUS

RESEARCH NOTE:

Diagnostic Markers for Transitional Cell Carcinoma

Transitional cell carcinoma (TCC) is the most common bladder cancer in dogs, and its prevalence is increasing. Most dogs are diagnosed late in the disease course and do not respond to therapy as well as dogs diagnosed earlier. A diagnostic screening test has low positive predictive value. MicroRNAs (miRNAs) have been used in human medicine as disease biomarkers and in determining prognosis. In mammals, miRNAs play a role in cell proliferation, differentiation, and apoptosis; in humans, they may be upregulated in cancerous cells.

One objective of this study was to determine expression of miRNAs in urinary bladder samples obtained from dogs. Diseased urinary bladder tissue samples were obtained from formalin-fixed paraffin-embedded archived samples; grossly normal bladder tissue samples were obtained from animals undergoing necropsy for reasons unrelated to the study. Included were tissues from 4 grossly normal bladders, 13 with nonneoplastic inflammatory bladder disease, and 18 with TCC. There was a significant differ-



ence in the expression of some miRNAs from all 3 groups. These results support the potential use for miRNAs as diagnostic biomarkers for identifying dogs with TCC.

■ ■ Source

Expression of microRNAs in urinary bladder samples obtained from dogs with grossly normal bladders, inflammatory bladder disease, or transitional cell carcinoma. Vinall RL, Kent MS, deVere White RW. *AM J VET RES* 73:1626-1633, 2012.

Guinea Pig Pruritus

The most common cause of pruritus in guinea pigs is sarcoptiform mange, caused by the mite *Trixacarus caviae* that burrows into the skin, creating epidermal tunnels and eliciting a cell-mediated immune response. The mite's life cycle is 10–14 days. Most transmission is direct from carrier animals. Lesions are typically on the head, shoulders, dorsum, or flanks but can become generalized. Lichenification can occur with chronic infection. Secondary bacterial infections are common, and seizures have been reported.

Affected guinea pigs become thin and lethargic; the disease can be fatal. Diagnosis is made via skin scrapings and visualization of eggs and mites. The mites resemble *Sarcoptes scabiei* var *canis*; however, *T caviae* mites are smaller and have

longer hair-like dorsal setae. There are no licensed antiparasitic drugs for guinea pigs.

Seventeen mixed-breed guinea pigs with active mite infestations received either topical selamectin (15 mg/kg, $n = 9$) as a single dose or ivermectin (400 µg/kg) SC q10d ($n = 8$) for 4 injections. Pruritus resolved in 10 days for all animals; all were microscopically mite-free on day 30 (selamectin group) or day 40 (ivermectin group). Neither infection recurrence nor adverse reactions were noted in either group.

■ ■ Commentary

Some animals can be subclinical carriers and can introduce the disease into a colony. As with other species of sarcoptic

mites, they can cause transient dermatitis in humans. Although there was no significant difference in treatment outcomes, most owners would much prefer a one-time topical than an injection series. Topical ivermectin has also been suggested, but >1 treatment is recommended. These are extralabel uses of antiparasitics, and owners should be advised. Cleaning bedding and living quarters is also important in management.—*Patricia Thomblison, DVM, MS*

■ ■ Source

Comparison of efficacy, safety, and convenience of selamectin versus ivermectin for treatment of *Trixacarus caviae* in pet guinea pigs (*Cavia porcellus*). Eshar D, Bdolah-Abram T. *JAVMA* 241:1056-1058, 2012.