

Urinary Tract Infections

Urinary tract infections (UTI) are very common in our canine companions. They are just as miserable and uncomfortable to them as they are to us. The urinary tract includes the urethra, bladder, ureters, and kidneys. Bacteria ascend through the urethra and into these normally sterile areas inside the body. These infections can be very persistent.

Symptoms of a urinary tract infection include increased water consumption and frequency of urination, voiding small amounts and straining, accidents in the house, leaking urine during sleep, strong smelling or atypically colored urine, and incessant licking at the prepuce or vulva. Difficulty in housebreaking a puppy can also be a sign of a UTI.

When a UTI is suspected, a urine sample is collected by the veterinarian in order to perform a urinalysis (UA). Care should be taken to avoid contaminating the sample with artifact. The “cleanest” method of collection is called a cystocentesis - passing a very fine needle through the abdominal wall directly into the bladder. Less ideal methods are passing a urinary catheter and collecting a voided sample, since contaminate may be introduced from outside of the body. The urine sample is analyzed for blood, inflammatory cells, bacteria, and crystals. A specific gravity measures urine dilution caused by increased water consumption or kidney dysfunction. A reagent dipstick tests for nitrite (bacterial metabolite), pH, glucose (to screen for diabetes), and bilirubin (produced by the liver). A portion of the sample is centrifuged to separate solids from the urine such as cells, casts of the renal (kidney) tubules, bacteria, and crystals. This material is called urine sediment.

The urine may be sent to a reference laboratory for a culture and sensitivity (C&S). The sample is incubated in a special agar or broth, a food medium to grow bacteria. When bacterial growth is present, the organisms are isolated and tested to determine their species. Then they are exposed to a battery of antibiotics on a susceptibility disc. This information will tell the doctor which antibiotic to prescribe and what dose will be effective. Also, the C&S will give some idea as to how the infection will respond to treatment.

Abdominal x-rays are taken to check for the presence of bladder and kidney stones, especially if crystals are found in the urine sediment. If bladder stones are discovered, they must be removed or dissolved if possible. The stones will harbor bacteria and make resolution of the infection impossible. X-rays can also reveal a congenital defect in the bladder wall called a persistent urachus. This is a remnant of the tube that connected the bladder to the umbilicus before birth. It can also harbor bacteria and make the infection persist despite antibiotic therapy.

When your veterinarian prescribes an antibiotic for your dog’s urinary tract infection, is critical to give it as instructed. Antibiotic resistance is a real problem in UTI. Also, the urinalysis should be repeated at the end of the treatment period to gauge the response to the antibiotic. If time lapses between treatment and rechecking, the infection may recur, causing the need to repeat diagnostics.