UTI: Urinary Tract Infection

By Linda Sardou

The first sign in sugar gliders is a hissing noise when peeing (because it hurts/burns to go potty). Other indications are excess licking of the cloaca area, or Self Mutilation. This may be accompanied by crystals in the urine. The vet will need to check for crystals if UTI is suspected, along with checking the PH levels of the urine.

UTI's can be a difficult problem to deal with. It seems unfair that some are plagued with this problem and get more than their share. There are many suggestions posted about this topic, and some of the advice is inconsistent with sound principles of microbial management or any logic or fact of physiology. I offer another point of view for your consideration. And despite what I post, I would still suggest letting your veterinarian guide your glider care.

1. The water that one uses has nothing to do with causing UTI's. Bottled, tap, filtered or not. Water is absorbed from the gut (a non-sterile area which has many more bacteria than the water) into the blood stream which is a sterile area. The sterile water-containing blood is filtered by the kidney which is still a sterile spot. The kidney filters out protein, blood products and desirable products, and lets the urine (still sterile) pass down the ureters to the bladder to be eliminated. Because gliders have cloacae, they bring gut contents of the intestine (loaded with bacteria) in close proximity together with urinary tract contents (urine still sterile until then) which can allow bacteria to enter. What one drinks is not the cause.

2. Many different kinds of bacteria exist normally in the intestine – as the intestine's normal flora. Some of them grow better in acidic environments. Some grow better in alkaline environments. Using vinegar (a weak acid) or other methods to change the urine pH can help with infections caused by some bacteria that are sensitive to pH, but may not help with others. It depends on which germ is growing there.

3. Many antibiotics are eliminated from the body in the urine. Because of this, relatively high levels of antibiotics can be achieved in the urine. That works in our favor when treating infections of the urinary tract.

4. Urinary tract infections will occur from time to time no matter what one does. There is no foolproof way to use the right cage material and water and diet and everything else and change that.

5. Urine in the urinary tract is more like a river than a pond. Its contents are constantly being washed away as drinking fluids brings new urine that is filtered in the kidney and runs downstream toward elimination. So, it is relatively easy to sterilize urine if an appropriate antibiotic is used. If the germ isn't pickled by the med in a couple of days, it won't work better in a week or a month or a year. For UTI, no improvement in a week ought to make one consider changing meds, but not treating longer.

6. UTI's are a different situation than soft tissue infections and sinus infections which are closed cavities within bone, and where good antibiotic levels can be more difficult to achieve (see # 3 above). Those areas also do not offer the same drainage to de-bulk the infection as the urinary tract does (# 5 above). Length of treatment recommendations therefore is very different.

7. A principle of antibiotic therapy is to use the most specific (narrow spectrum) drug possible. An advantage of culture is to know what germ one is dealing with and therefore selecting an antibiotic with activity against that germ and which bothers others as little as possible. Disrupting flora in a bigger way with broad spectrum meds affects nutrition, antibiotic resistance, and other processes in a negative way.

8. Broad spectrum meds does not necessarily mean a good thing. If an infection is life-threatening and one does not know what germ is present, they are a good choice. But if a culture has identified a germ and better directed care, the more narrow spectrum drug that works, the better.

9. Using longer treatment, broad spectrum drugs, or multiple drugs are the recipe for developing drug resistance. We all get faced with situations where nothing is working and we get pushed into trying such things. But starting with that strategy in every infection comes with negatives not to be overlooked.

10. I've never had much faith in the thought that galvanized wire cages cause UTI's. I've never seen proof of that assertion.

11. Every hissing glider may not have a UTI. To my way of thinking, there can be irritations of the lining of the cloacae that would be burned by urine. Voiding even sterile, non-infected urine could sting in that situation. Although a UTI may be the reason for that membrane to become irritated, it does not necessarily have to be that the bladder or urinary tract structures above the bladder are infected. And since urine cultures from a glider are growing germs from two mixed tracts, a theoretically sterile urinary tract and a known dirty and infected intestinal tract, it is difficult to interpret those results.

12. The tough part of gliders urinary work-up is that we are not collecting urine in a sterile manner. That which we collect has come through the cloacae. Since the cloaca is a shared passage of both urinary tract and gastro-intestinal tract, the bacteria-laden poop and the sterile urine are mixed before exit. Although it is true that urine should be sterile, glider urine is difficult to get before mixing with poop bacteria. One should see a single germ growing in very high colony count (greater than 100,000 colony forming units per high power field) to conclude that that germ is a pathogen. If multiple germs grow, it is usually a flora sample and totally normal.

13. Lastly, some are just prone to getting infections. It might be that there is a subtle difference in anatomy that allows germ entry. Some have minor differences in their DNA that affects immune system function and natural protections. Some have dietary shortcomings that may play a role. If repeated and resistant UTI's are present, using a daily antibiotic forever as a prophylactic to help maintain a sterile urinary tract can help. That med should ideally be narrow spectrum, low-dose, and one that will be eliminated (concentrated) in the urine.

If the infection recurs and if it's the same bacteria, than what you now have (likely from not being on the meds long enough the first time) is a RESISTANT STRAIN. That means that even though a particular med SHOULD kill it - it may not. If you've used the same antibiotic every time, it's time not only for a different one, I would recommend a combination of TWO antibiotics for a duration (length of time) NO LESS than 21-30 days-personally, I'd go (and have - I had one in the same situation - it took a 3 month course of Clindamycin, Flagyl, and Baytril to finally cure - he had a recurrent facial/sinus infection) AT LEAST 30-45 days. Resistant bacteria are nasty, and very hard to get rid of.

In rare cases, or if the infection is very mild, that might work, but in most, with gliders, you end up with a resistant bug. Glider metabolism processes differently from domestic animals. After the first two resistant bugs we managed to spawn doing that, I always recommend, for ANY course (and follow my own advice) NO LESS than 14 days even for a first occurrence - because you only have to miss a few, and you have a drug resistant infection that is more difficult every time to try to get rid of.

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