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Reptile Associated Salmonella

Background Information

Salmonellosis is by no means a new disease. Its potential to cause disease has been recognized since 1946. Salmonella is a gram negative flagellated rod. In addition, it is a facultative anaerobe. Salmonella is a very stable organism. It is capable of remaining virulent for several months to years depending on the medium it is living in.

Medium Length of virulence

- Tap Water 89 days
- Pond Water 115 days
- Pasture Soil 120 days
- Garden Soil 280 days
- Avian Feces 28 months
- Bovine Feces 30 months

There are about 2,000 serotypes of salmonella, 200 of which have been isolated from reptiles. Of the 200 types seen in reptiles, only a few have been known to be involved in reptile zoonosis.

Transmission

Transmission of salmonella is through the fecal-oral route for the most part. In the case of turtles, eggs laid in contaminated soil may be infected by the passage of the organism through the shell. Another point of note is that infection does not need direct contact with infected reptiles or their fecal material. To become infected, contact with individuals who have had contact with infected reptiles or the infected reptiles cage material may be all that is needed.

Clinical Signs

You may be wondering, "How do I know if my pet reptile has Salmonella?" Unfortunately, infected reptiles usually show no signs of disease. Occasionally they may become anorexic, lethargic, have diarrhea, or they may suddenly die. Fecal testing is often unrewarding. Several samples may have to be taken over several months to turn up a positive result. The problem is that negative results cannot be regarded as truly negative because the



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organism can undergo periods of latency. For this reason, it is almost impossible to say with 100% certainty an animal is free of salmonella.

In contrast to reptiles infected with salmonella, humans more often show very severe signs of infection. Common signs often exhibited by humans are: gastroenteritis, profuse diarrhea, sometimes bloody diarrhea, cramps, vomiting, fever, abdominal pain, dehydration, dermatitis, red rash, and septicemia. In some cases, it may lead to more severe diseases such as osteomyelitis, encephalitis, and meningitis, Death is always a potential out come. Individuals diagnosed with salmonella must be reported to the Public Health Department, and carriers must be registered with the Public Health Department even after hospital discharge.

Individual that are at greater risk of infections include:

- Children under age 5
- Individuals with HIV/AIDS or other immunodeficiency disorders
- Transplant patients on anti-rejection therapy
- Individuals on drugs that suppress or alters the immune system
- Individuals receiving radiation therapy
- Pregnant women
- Elderly with poor nutritional status.

Treatment

Treatment of salmonella infected reptiles is not recommended because in most cases the animal simply stops shedding the organism until antibiotics are stopped. Similarly, treatment of salmonella in humans is not warranted unless it becomes life threatening. The reason for this is that treatment may lead to individuals becoming carriers. Also, misuse of antibiotics has lead to development of antibiotic resistant strains of salmonella in both humans and reptiles. Because treatment is not recommended in all cases and is not successful in all, prevention of salmonellosis has been the main area of focus.

Prevention

Prevention of salmonella is relatively easy and usually requires little time commitment. The first and the most important thing to do is to your hands with antibacterial soap and water after handling reptiles or their cage materials. Avoid washing cage materials or placing reptiles in areas were food is to be prepared or eaten. Do not let young children to handle reptiles unsupervised and teach them to wash their hand after the do handle reptiles. Keep reptile cages/enclosures and accessories clean. Try to avoid splashing water when cleaning or wear eye



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and face protection if splashing is unavoidable. Individuals in the high-risk category should avoid contact with reptiles. Overall, the main point in preventing salmonella, is adhere to good hygiene. Also, keep in mind that reptiles are not the only source of salmonella. Other animals carry it, such as dogs, cows, horses, and chickens. Raw chicken and other uncooked meats serve as a greater risk than do reptiles. So, adhere to proper hygiene when dealing with these animals and food products, as well as when dealing with reptiles.