Vetpath is a specialist veterinary laboratory dedicated to providing our clients with the finest laboratory diagnostic service. A team of veterinary pathologists and medical scientists with extensive experience in veterinary diagnostic pathology forms the core of the Vetpath team.

VNews

VETPATH LABORATORY SERVICES

OCTOBER 2015

Antibiotic susceptibility in urinary tract infections

Urinary tract infections (UTIs) are common in domestic animals and are best diagnosed via culture of a urine sample obtained by cystocentesis.

Empirical antibiotic therapy is often started before urine culture results are available, or without urine culture. However, repeated therapy of UTIs without correct identification of bacterial sensitivities can increase the risk of selection of resistant bacterial populations.

JVIM recently published a retrospective study from UC Davis culture results of over 1500 urine samples. The data analysis was designed to identify the most common bacterial species isolated from urine and to determine the susceptibility patterns of these isolates.

Commonly isolated bacterial species included *E. coli* (52.5%), *Staphylococcus spp* (13.6%), and *Enterococcus spp* (13.3%). Approximately 35% of infections were classified as uncomplicated (a sporadic infection in an otherwise healthy patient) and 65% were classified as complicated (patients that had an underlying anatomic or functional abnormality, or a co-morbidity predisposing to infection). Bacterial isolates from uncomplicated UTI's were more likely to have higher *in vitro* susceptibility to most antibiotics compared to uncomplicated UTIs. However, antibiotic sensitivity remained less than 90% even for uncomplicated UTIs.

The researchers also assessed resistance patterns of bacterial isolates. They found that bacteria previously treated with amoxicillin, doxycycline or enrofloxacin within the previous 30 days were more likely to become resistant. This pattern was not seen with amoxicillin / clavulonic acid, however. The study also found that multi-drug resistant isolates of *E. coli* and *Staphylococcus spp* were more common in dogs with complicated UTI's.

In vitro susceptibility was highly variable and none of the oral antibiotics tested had over 90% efficacy. The findings of this study highlight the importance of sensitivity testing on cultured bacteria to ensure the correct antibiotic is prescribed. Failure to do so may result in ineffective antibiotic therapy with potential drug side effects and possible selection of resistant bacterial populations.

Reference:
Wong C. et al. Antimicrobial Susceptibility Patterns in Urinary Tract Infections in Dogs (2010-2013). JVIM 2015; 29: 1045-1052.

Vetpath Laboratory Services welcomes feedback on all aspects of our service from couriers to lab results. Please feel free to contact us at 9259 3666 or email enquiries@vetpath.com.au

ACTH stimulation test protocols

The ACTH stimulation test is a commonly performed test of adrenal function. The test is used for both diagnosis and monitoring of hyperadrenocorticism, and for diagnosis of hypoadrenocorticism.

While the ACTH stimulation test is performed using the same protocol for each of these situations, the type of ACTH preparation used will influence the timing of the blood collection.

The table below summarizes the two protocols for Synacthen and Synacthen Depot. Remember to always give the clinical history on the submission form as the cortisol reference ranges and the interpretation will vary depending on the clinical history.

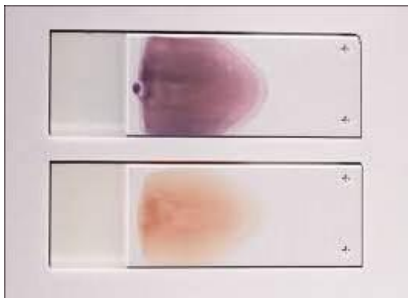
Haematology at Vetpath

Vetpath offers a number of options for assessing haematology and coagulation in patients.

A full **CBC** includes a PCV/HCT, red cell indices, total and differential WBC count and a platelet count/evaluation. In addition, a smear evaluation is always performed by a pathologist. Submission of a freshly made smear is advised to help maximize cell preservation, particularly if the sample will not arrive at the laboratory within 24 hours of collection. A CBC is a good basic choice for assessing the haematopoietic system in most patients.

A **part CBC** (e.g. platelet count, PCV or fibrinogen concentration) and **smear evaluation** are also available. However, a full CBC is recommended as it provides much more information and greater accuracy for minimal extra cost.

The **coagulation screen** includes a CBC plus fibrinogen concentration, PT and PTT. This combination of tests is ideal for assessment of a bleeding patient. The prothrombin time (PT) and partial thromboplastin time (PTT) are also available as stand-alone tests for assessment of the coagulation cascade. Screening for Vitamin K antagonism only requires PT testing as Factor VII in the extrinsic pathway has the shortest half-life and PT will therefore be prolonged before PTT. Always remember that at least 48 hours must elapse between possible rodenticide ingestion or cessation of Vitamin K treatment and PT testing.



ACTH Stimulation Test for Dogs

Drug	Synacthen ACTH	Synacthen ACTH Depot
Formulation	250 µg/vial (reconstituted with 1ml sterile saline)	1mg/vial (1ml bottle)
Dose	250 µg (1 vial) per dog OR 5 µg/kg to a maximum of 250 µg per dog	Body weight < 15kg – 0.25 mg/dog Body weight > 15kg – 0.5 mg/dog
Administration	Intravenous	Intramuscular
Collection	Pre and 1 hour post	Pre and 2 hours post

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