

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

APRIL 2018

AMH – a possible marker for Sertoli and Granulosa cell tumours

Anti-Mullerian hormone (AMH) is a glycoprotein produced in gonadal tissue that is involved in sexual differentiation in both males and females, as well as in folliculogenesis.

AMH is often used to differentiate between neutered and intact males and females of many mammalian species, especially dogs and cats. AMH may also be useful in identifying ovarian and testicular remnants in neutered animals.

AMH has clinical value in equine practice where it is often used as a marker to differentiate between intact, castrated and cryptorchid males (rigs). It shows promise as a marker for

Granulosa cell tumours in mares (95% accurate in some studies) and may be useful in assessing ovarian reserve and reproductive life span of aged mares, as AMH reflects the follicular population in mares.

Sertoli cell tumours are commonly found in retained testicles in dogs, and often do not result in a palpable mass, but may result in feminisation and bone marrow hypoplasia due to oestrogen production, which may be irreversible. AMH was found to be significantly higher in dogs with Sertoli cell tumours than in castrated and entire dogs, often $>155\text{pmol/L}$, and may be a useful marker in dogs with suspected Sertoli cell tumour.

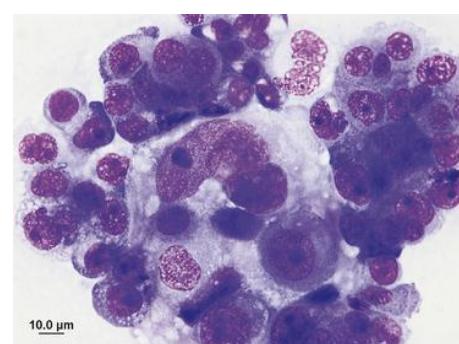
BCS and age (in animals older than 6-12 months) does not appear to affect AMH production. AMH does increase with sample storage, and testing should be done within 24-48 hours of sample collection.

Reference: Bodil S. Holst, BMC Vet Res, 2015, 11, 166.



Criteria of malignancy

Cytological evaluation of neoplastic lesions always includes assessment of the cell population for criteria of malignancy. How many criteria of malignancy can you identify in the cells below?



Source: <https://veteriankey.com>

CRP may be useful for monitoring recovery following surgery

CRP is a major acute phase protein in dogs with systemic inflammation. Vetpath now includes CRP concentration in all complete canine profiles.

Compared to other markers of inflammation such as body temperature and leukocyte count, CRP may be a more sensitive marker of systemic inflammation following surgery in dogs, and could improve the assessment of postoperative inflammation and clinical decision making during recovery after surgery in dogs.

Changes in time may be more useful than a single measurement for monitoring and prognostic prediction. Following uncomplicated surgical procedures, increased CRP concentrations may occur 6 hours after surgery, with maximum concentrations at 12-24 hours, decreasing gradually to baseline values over 14-17 days.

Persistently increased concentrations may suggest ongoing inflammatory processes/infectious complications. Note that surgical inexperience may result in increased surgery time and

tissue trauma, increasing the concentration of CRP.

Reference: Christensen MB et al., Acta Vet Scand. 2015; 57: 71.



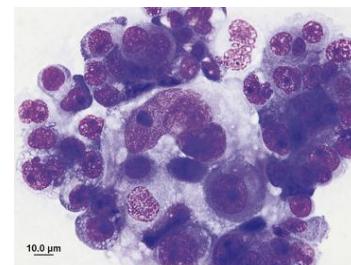
Faecal occult blood

The faecal occult blood test detects blood not apparent grossly in the faeces.

The test used at Vetpath is the Hema-screen test, a guaiac-based test in which faecal peroxidase activity is detected when guaiac reacts with peroxidase to form a green product.

The test is neither very sensitive nor specific, limiting clinical use in dogs and cats. False positive results may occur with meat-based diets, especially red meat and tinned food, though chicken and fish may also interfere. Peroxidase-rich fruit and vegetables may also cause false positives, e.g. beets, tomatoes, broccoli, cauliflower, carrots, mushrooms. A **meat-free diet** consisting of e.g. cottage cheese, rice and pasta should be fed for **3 days** before testing. Test sensitivity may be increased if 3 separate faecal samples are evaluated.

Criteria of malignancy



The cells in the figure above were aspirated from a feline mammary carcinoma. Some of the criteria of malignancy visible include:

- Anisocytosis
- Anisokaryosis
- Binucleation and multinucleation
- Prominent and multiple nucleoli
- Coarse nuclear chromatin
- High nuclear to cytoplasmic ratio

Mitotic figures are not present in this field, however an increased number of mitoses or abnormal mitoses are a commonly identified criteria of malignancy.



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