NationWide Labs **NEWS**
ISSUE 16 **WINTER** 2015

Thank you for your business in 2015

The team at NWL would like to say a big thank you to all our customers for their business during 2015.

We are dedicated to providing you with the support you need to deliver the right diagnosis and treatment.

2016 Price Lists

This year we will be bringing out some new tests and profiles designed to assist you further, some of these are included in our 2016 pricelists which are being distributed in December 2015.

We wish you a prosperous, happy and healthy 2016.

2016 CPD Dates

We will be holding a series of CPD events in Preston, Cambridge and Leeds in 2016.

Our first CPD evening of 2016 is near Cambridge on **January 27th**, for more information call 01223 493400.

Our second event is on **January 28th 2016**
Flea insecticide resistance. Is it why my flea control is failing? Speaker Ian Wright. Venue Preston Marriott Hotel.
Following dates planned for Preston are 31/3/16, 23/6/16, 29/9/16, 24/11/16 Venue booked, speakers to be arranged.

Watch out for dates in Leeds

Dates for your diary

NWL will be attending – BSAVA, BEVA, BCVA and London Vet Show.

At BSAVA our Stand is 702, why not come along and meet some of the team.

Watch out for more details on twitter and on our website.

BSAVA Congress
7–10 April 2016
Birmingham · UK

New Website

NWL will be launching their new website in February 2016, the new site will be more interactive, providing excellent support materials and giving access to on-line CPD sessions.

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NEWS
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Feline leukaemia virus

General The prevalence of FeLV is not clear, but has probably fallen to <1% (Gruffyd Jones 2006). With the introduction of PCR testing our understanding of the pathogenesis and outcomes of infection has been challenged. More recent proposals have suggested the following stages in infection and FeLV status categories (Greene 2012):

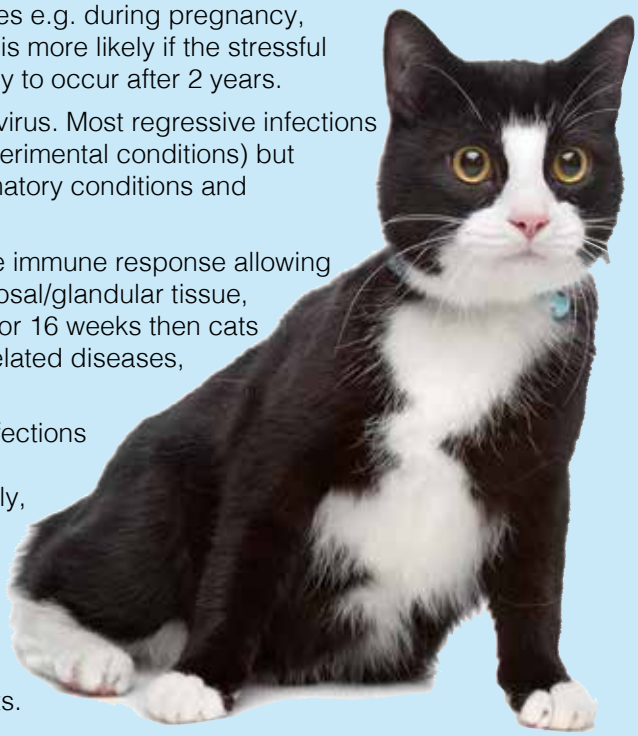
Abortive/complete elimination Virus replicates in local oropharyngeal lymphoid tissue but systemic spread is prevented by humoral and cell-mediated responses. Exposure to infection is indicated by the presence of antibodies but cats are negative for antigen and proviral DNA. It is unclear how often this occurs in natural infection but it is likely to be very uncommon. Studies using newer, sensitive PCR techniques indicate that proviral DNA may be detected at a later date in many patients previously believed to have eliminated the virus. However, the clinical significance of persistence of proviral DNA is unclear since the life expectancy is the same as for cats which have never been infected.

Regressive infection (transient viraemia) Infected cats become viraemic (primary viraemia) but an effective antibody response is mounted and virus replication/viraemia is terminated before or shortly after bone marrow infection (around 3 weeks post infection). In most cats the primary viraemia lasts 3-6 weeks (maximum 16 weeks) during which time, FeLV p27 antigen (ELISA) is detected in the plasma and cats are infectious. Previously, it was thought that termination of the viraemia was accompanied by rapid, total elimination of the virus from all cells (based on negative ELISA results within 2-8 weeks). However, recent studies suggest that FeLV becomes integrated into the cat's genome and thus can be detected by qPCR for months after the initial viraemia. It has been proposed that integration of proviral DNA is essential for solid protective immunity and some investigators propose that small quantities of proviral DNA may actually persist for life. The clinical significance of an antigen negative/proviral DNA positive pattern is unclear but cats with this outcome of infection have effective immunity, are likely protected against new exposure and have a low risk of developing FeLV associated diseases. They are unlikely to shed virus via oronasal secretions but may pose a risk to other cats via blood transfusion.

Some cats do not clear the primary viraemia prior to infection of the bone marrow precursors (secondary viraemia) and in these patients viral antigen is detected within platelets and granulocytes by immunofluoresence testing (IF). Once infection is established in the stem cells the virus cannot be eliminated from the bone marrow by the host immune response and most of these patients go on to develop progressive infection (see below). Progressive infection is more likely when viraemia persists for more than 16 weeks. However, in a small number of cats the immune response does limit systemic replication of the virus shortly after bone marrow infection. Although proviral DNA persists in the stem cells of these cats, it is not translated into proteins and affected individuals do not produce virus, become negative for FeLV antigen (ELISA, IF) and are not infectious to other cats. This is termed latency and may be a permanent state but it appears that the majority of cats lose functional viral material (e.g. through gene reading errors during cell division) by 16 months after infection, with only 10% still affected at 30 months.

Regressive (latent) infections may reactivate if the host immunity wanes e.g. during pregnancy, periods of stress or after high doses of glucocorticoids. Reactivation is more likely if the stressful event occurs shortly after the initial viraemia and is considered unlikely to occur after 2 years.

Regressive infections are likely to be a stage in the elimination of the virus. Most regressive infections are not clinically significant (reactivation is uncommon under non-experimental conditions) but clinical signs may occur and include cytopenias, suppurative inflammatory conditions and haematopoietic neoplasia.



Progressive infection In progressive infections there is an ineffective immune response allowing extensive viral replication in lymphoid tissues, bone marrow and mucosal/glandular tissue, accompanied by virus shedding. If the viraemia persists unchecked for 16 weeks then cats remain persistently viraemic and infectious and most develop FeLV related diseases, often within 3 years.

FeLV DNA provirus is detected in both regressive and progressive infections and these can only be differentiated by repeat antigen tests, which in regressive infections become negative after 2-8 weeks, or occasionally, after some months.

Focal Infections Focal infections of specific tissues (mammary gland, spleen, lymphoid tissue, small intestine) can lead to low grade or intermittent virus production and affected cats may have weak positive or discordant results (ELISA, IF) or variable results over time. They should be considered a potential source of infection to other cats.

NEWS
ISSUE 16 WINTER 2015

Improving your monitoring of Cushing's disease in practice

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After a diagnosis of Cushing's disease has been made it is tempting to think that the job is done. However these patients may easily live for 2 years or more after the diagnosis and during this time it is important that their condition is monitored properly. This monitoring prevents both over-treatment, which can lead to hypoadrenocorticism, and under-treatment, which can lead to complications such as pancreatitis, diabetes mellitus and recurrence of the original signs of the condition.

The most important monitoring method is to obtain an accurate clinical history from the owner. This is greatly assisted by the owner using some form of diary to record, often over several months, the dog's appetite, thirst, demeanour and coat condition. A clinical examination is very important but rarely as rewarding as the history.

The second most important monitoring method is to perform some endocrine testing. However helpful the history, endocrine testing provides additional information which is important because:-

a) Some owners are less reliable / observant
   - endocrine testing provides a 'check on owners'

b) Some clinicians are not confident or experienced with drugs like trilostane
   - endocrine testing provides a 'confidence boost for vets'

c) Some cases show few signs of overtreatment until they become seriously ill
   - endocrine testing provides an 'early warning system'

d) Some doses need to be adjusted
   - endocrine testing provides a 'guide to dose changes'

The most common method of monitoring trilostane is to use ACTH stimulation tests at 10–14 days, 30 days and then every 90 days after starting therapy. As trilostane has a short plasma half-life, the manufacturer recommends that ACTH stimulation tests are performed 4–6 hours after dosing. However, the current preference is to start the ACTH stimulation test 2–4 hours after dosing because this is more likely to be the nadir of cortisol production following trilostane administration.

However, despite its widespread use, the ACTH stimulation test has never been validated for trilostane therapy. If ACTH is not available or too expensive to use regularly it is also possible to monitor trilostane therapy by measuring cortisol just before, and 2–3 hours after the administration of trilostane (Pre- and post-pill cortisol concentrations). This new monitoring method may be better than traditional ACTH stimulation tests and also be cheaper for the client as it avoids the use of ACTH. Whatever method is used it is imperative that the cortisol measurements are interpreted in conjunction with the clinical signs.

On 27th January 2016 Professor Ian Ramsey will be speaking at our ClinPath Club, free CPD at The Park, Cambridge Regional College, Kings Hedges Road, Cambridge, CB4 2QT, 7.30 for 8.00 pm start about how this new method of monitoring Cushing's disease was developed and is being used to improve the lives of dogs, their owners and their vets.

Did you know?

Diagnosis may be easy but how are you going to make sure you do not overtreat this patient?

Come and find out on 27th January at our CPD session.
Call 01223 493400

NEWS
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One step closer for Amur leopards

For many years Amur leopard numbers have been considered stable at about 40 individuals in the Russian Far East. However, thanks to recent work by WCS Russia, ZSL, the Russian Academy of Science's Institute of Biology and Soil and other NGOs, evidence of leopards crossing the border into China has been discovered, and in 2014 camera trap surveys for Amur leopards were increased and the resulting population estimate rose to around 70.

This may appear to be encouraging news, but this estimated population is still critically low and the Amur leopard remains the world's most endangered big cat. Despite the increased numbers the Amur leopard in the wild continues to have an poor genetic base which means that establishing a second wild population is an essential strategy in its conservation.

The current plan is to send captive Amur leopards (including some from the UK) on short term breeding loan to a reintroduction centre in the Russian Far East and their offspring will be released to form this second population. However, to do this responsibly requires a risk assessment of diseases that the captive leopards might introduce to the Russian Far East, an assessment of the disease risks that they might face during their stay there, and identification of local disease threats to released offspring and from released offspring to local wildlife and domestic stock.

While WVI has not been in the field to trap Amur leopards for the past three years due to difficulties with trapping permits, we have not been idle. The enormous amount of health data collected over the past 10 years from both wild and captive Amur leopards has now been analysed and combined with health data from other species in both the existing range and proposed reintroduction site. All this information forms the basis of the 'Disease Risk Assessment for Reintroduction of Amur leopards (Panthera pardus orientalis) into the Russian Far East' – now completed by WVI and made available to the Russian authorities. The DRA not only identifies disease risks, but also ways in which such risks can be mitigated. Therefore it forms a practical manual for future veterinary work in the Russian Far East, and its recommendations will be incorporated in the next phase of this exciting project.

The DRA, as well as the Framework document which defines its' methodology, are the first in depth veterinary assessments to be done for any big cat reintroduction and could be used as a blueprint for other species. WVI will make them available to all bone fide cat reintroduction projects thereby making the most efficient use of our efforts and our sponsors' generosity.

WILDLIFE VETS INTERNATIONAL

Wildlife Vets International was formed by a group of wildlife vets in 2004 to give the conservation community veterinary support and skills. The charity is now in a unique position to provide independent veterinary support to projects around the world. Detailed sample analysis enables WVI to get a real grasp on the disease threats to endangered species. WVI is grateful to NationWide Laboratory Services for the service they provide and the support they give to WVI.

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