

LDA Conference - University of Cambridge, 12 Sept

The 2015 conference will address treatment of Lyme disease. It is acknowledged that not everyone recovers completely following the 2-4 week course of antibiotics currently recommended by guidelines and we shall also discuss why this might be.

Topics so far are -

- Antibiotics
- How immunology may affect recovery
- The [PLEASE trial](#) investigating follow on treatment for those with persistent symptoms due to Lyme disease
- Persister cell theory and how this might apply to Borrelia
- Pain mechanisms and treatment
- Action in the UK

International speakers will include Dr Hadewych ter Hofstede from Radboud University Medical Centre in the Netherlands and Professor Ying Zhang from Johns Hopkins University in the USA.

As always the conference is open to all patients, carers, clinicians, researchers, health officials; anyone with an interest in Lyme disease. Expect more details in the following couple of months as we finalise the programme.

In the news

Willy Burgdorfer died on 17th November 2014 at the age of 89. His contribution to the science surrounding Lyme disease is undisputed and we have an [outline of this story](#) in one of our news items. [The Lancet](#) also published an open access obituary.

Canada passed a Federal Framework on Lyme Disease in December, but not without considerable debate [as we related in a news item](#) on the website. The Framework will include, and we quote -

- the establishment of a national medical surveillance program to use data collected by the Agency to properly track incidence rates and the associated economic costs of Lyme disease;*
- the establishment of guidelines regarding the prevention, identification, treatment and management of Lyme disease, and the sharing of best practices throughout Canada;*
and
- the creation and distribution of standardized educational materials related to Lyme disease, for use by any public health care provider within Canada, designed to increase national awareness about the disease and enhance its prevention, identification, treatment and management.*

All of which sounds so eminently sensible, one wonders why there was so much resistance from the infectious diseases consultants.

UK tick collecting planned

As you are probably aware, 4 volunteers collected ticks from their home areas in July, and sent them with one of our [speakers at the 2014 conference](#), Martin Andersson, back to the University of Lund, Sweden, for pathogen testing. Martin was particularly interested in the newly discovered tick-borne pathogen *Candidatus Neoehrlichia mikurensis* but he was intending to screen for other pathogens as well.

We will let you know when we have any information on the results.

Meanwhile, back on home ground, a PhD student is undertaking a joint project with the Institute of Infection and Global Health at the University of Liverpool and the Medical Entomology & Zoonoses Ecology group at PHE, Porton and will shortly be looking for volunteers to help in tick collections.



There are small matters like risk assessments and field procedures to finalise, but look out for news of this. We shall circulate details when we have them but if you would definitely like to be on the mailing list for this, please email other@lymediseaseaction.org.uk

Also coming up in the UK

January 19th : A [conference organised by a patient](#) through their MP, held at the House of Commons. This has been organised through a Facebook group and LDA has been asked not to attend. We will request feedback and hope to include it in our next newsletter.

March 7th : LDA Spring trustee meeting. We all meet once every 6 months - other work is conducted by email with the occasional meeting of one or two people on specific issues. We shall be reviewing progress, strategy and information production.

March 18th 6.30 pm : Huddersfield University Public Lecture: Dr Richard Bingham will be talking on "[Playing Hide and Seek with Lyme Disease; From a Tick Bite to Persistent Infection](#)" This lecture series is free and open to everyone, so if you are in the area, why not go? The talk will describe the complex lifestyle and unique features of this unusual pathogen. Several features of the *Borrelia* outer-membrane make it particularly hard to detect by the human immune response and allow the bacteria to survive for an extended period of time in the host. As you can guess, there will be a lot of scientific detail, but if you have attended LDA conferences you will be familiar with some of the material.

May 19th - 20th : [Primary Care Exhibition at the NEC](#) where LDA will be exhibiting and handing out information on the RCGP e-learning module on Lyme disease as well as LDA leaflets.

May 27th - 30th : [Royal Bath & West Show](#) at the showground near Shepton Mallet. LDA will have a stand and be discussing ticks, tick removal and Lyme disease with allcomers.

Negative Lyme disease serology

LDA remains concerned that negative Lyme serology test results continue to be interpreted as excluding a diagnosis of Lyme disease. The experience of LDA's helpdesk is that this is a regular occurrence, despite this being contrary to manufacturers' intended use of the serology test kits, both first and second tier ¹.

A positive Lyme serology result depends on the immune response producing enough of the right antibodies to meet a defined threshold. These are some of the reasons why this may not occur:

- Testing too early before the antibody response has time to develop.
- The early immune response fluctuates, so any early test is a 'snapshot' ².
- Early inadequate antibiotics are thought to result in a weaker, unsustained antibody response due to reduction in the bacterial load. A mature well-orchestrated antibody response may be further disrupted by dissociation of T-cell activity from B-cells in the lymph nodes resulting in a lack of coordinated antibody production ³.
- VlsE is an outer surface lipoprotein of *Borrelia* that undergoes extensive antigenic variation, enabling immune evasion by the bacteria ⁴.
- There are different genospecies of *Borrelia* in Europe and many different strains. Antibodies produced may differ from those that the test has been designed to recognise. It is uncertain how effective the current UK tests are in detecting infections due to the genospecies and strains of *Borrelia* in the UK. Further uncertainties are whether the stage of the disease and the patient's immune status should be taken into account when interpreting these tests ⁵.
- Antibodies may be bound to immune complexes which may not be detected by the EIA/ELISA test or immunoblot in the same way as freely circulating antibodies ⁶.

Summary: Definite Lyme disease with negative serology test results has been well documented ^{7, 8}. Careful interpretation, taking into account the clinical details and awareness of the reasons for a possible false negative test result are vital, given that all current commercially available Lyme test kits are not intended to be used as 'Gold standard'.

Over-simplistic interpretation and application of Lyme serology test results continues to compromise patient care and safety and requires remedy. It is one of the most significant factors driving patients to seek positive test results from overseas laboratories.

References:

1. Immunetics, 2005. C6 *B burgdorferi* ELISA kit.
2. Aberer E and Schwantzer G. Course of Antibody Response in Lyme Borreliosis Patients before and after Therapy. ISRN Immunology 2012: 1-4.
3. Dattwyler RJ et al. Seronegative Lyme disease. Dissociation of specific T- and B-lymphocyte responses to *Borrelia burgdorferi*. N Engl J Med 1988; 319(22): 1441-6.
4. Zhang J et al. Antigenic Variation in Lyme Disease *Borreliae* by Promiscuous Recombination of VMP-like Sequence Cassettes. Cell 1997; 89:275-285.
5. <http://www.lymediseaseaction.org.uk/wp-content/uploads/2013/01/JLA-top-10.pdf>
6. Aguero-Rosenfeld ME et al. Clin Microbiol Rev 2005; 18(3): 484-509.
7. Preac-Mursic V et al. Survival of *Borrelia burgdorferi* in antibioticly treated patients with lyme borreliosis. Infection 1989; 17(6): 355-359.
8. Dillon R et al. Lyme disease in the U.K.: clinical and laboratory features and response to treatment. Clinical medicine 2010; 10(5): 454-7.

LDA Help desk experience

LDA's help desk is continuing to help both patients and doctors with sound information. Our continuing relationship with the Lyme disease laboratory at PHE Porton (RIPL) allows us to obtain detailed test results when requested by the patient. This has enabled us to suggest a new interpretation of test results for several patients.

LDA is able to act as a bridge between laboratory staff (who are not given any clinical detail in over 50% of cases) and doctors (who do not understand the complexity of the test results). We have, for example, often established that a past history of early antibiotics can explain negative serology. LDA knows the questions to ask, which most doctors do not.

We now have a great deal of documented evidence of a serious lack of awareness amongst UK doctors - consultants as well as GPs.

Even when people present with an erythema migrans or have a positive test result they may be given a course of flucloxacillin (ineffective) or a 7 day course of amoxicillin (too short).

Of particular concern, the wrong dose of antibiotics seems to be a recurring theme with children whose parents approach the helpdesk.

You don't need a test because -

"You do not live near a deer reservation."

"We do not have Lyme in Scotland."

"It isn't in this area."

"We don't get that in this country."

"Your cat hasn't been out of London."

So what are we doing?

We are continuing to

- **work with PHE** on [long term future plans](#). The past months have proved difficult for all concerned as RIPL (don't forget, this is the Rare and Imported Pathogens Laboratory) has been much involved with the Ebola crisis in West Africa. The head of the laboratory, Dr Tim Brooks, has only recently returned from a solid 2 months in Sierra Leone. Staff at RIPL have continued to work with us, but Ebola has hampered other development work at RIPL;
- keep the **Department of Health informed** of LDA's continuing concerns, especially about the provision of improved NHS specialist care;
- promote the [RCGP e-learning module](#) for GPs;
- **write papers** for publication. The Nursing Standard [published a review](#) in September 2014, another is in press with Nurse Prescribing and we are working on two further papers to address the known uncertainties and the lack of awareness amongst health professionals.
- **provide information** to the press, including TV and radio journalists;
- **keep our information up to date**, by increasing our on-line library and preparing for the annual re-assessment of our leaflets and website by the Information Standard.

You may notice that it is only 2 months since the last newsletter from us. We are actually doing quite a lot, but are aware that you don't know this unless we tell you what has happened. We shall try to improve our communications to keep you better informed. So from now on this will be a bi-monthly update.