Lyme Disease

LYME BORRELIOsis ADVICE FOR GPs & IMMEDIATE CARE

NHS Lothian
Main sources: IDSA guidelines 2006, Health Protection Scotland

Transmission
Through the bite of an infected tick (Ixodes spp.). However, most ticks in the UK are uninfected and the tick has to be attached for over 24 hours for transmission to occur.

Prevention
The risk of infection can be reduced by following the advice below:

- Protective clothing – trousers tucked into socks, long sleeved shirts.
- Tick repellents (e.g. DEET).
- Daily whole body tick checks (including hair and clothing).
- Removal of attached ticks preferably with tweezers or with a tissue.

Presentation

Early localised disease (Stage 1 – days to weeks following exposure)

- Erythema migrans (EM), the characteristic circular rash (≥ 5 cm) radiating from the site of a tick bite within 4-32 days of exposure.
- Constitutional flu-like symptoms may occur.

Early disseminated disease (Stage 2 – weeks to months following exposure)

- Constitutional flu-like symptoms, secondary erythema migrans or other rash.
- Neuroborreliosis (includes cranial nerve palsies, radiculoneuropathy, mononeuritis multiplex, lymphocytic meningitis and rarely encephalomyelitis).
- Carditis (atrioventricular heart block, perimyocarditis).
- Arthritis (recurrent mono/oligoarthritis typically involving the knee - rare in Europe)

_Late persistent disease_ (Stage 3 – months to years following exposure)

- Late neurological complications (mainly peripheral neuropathy and encephalomyelitis).
- Chronic arthritis (rare in Europe).
- Acrodermatitis chronica atrophicans (chronic bluish-red skin lesions on extensor surfaces).
- Ocular manifestations (including uveitis and iritis)

**Investigation and Management**

- Patients presenting with erythema migrans following tick exposure should receive antibiotic treatment (discuss with Infectious Diseases Unit if all the following are contraindicated).
  - Doxycycline 100mg bd for 14 days (first choice)
  - Amoxicillin 500 mg tds (child 50mg/kg/day) for 14 days (if doxycycline contraindicated)
  - Cefuroxime 500 mg bd (child 30mg/kg/day) for 14 days (if both above contraindicated)

**Serology:**

- Is seldom helpful in patients with erythema migrans following tick exposure because the diagnosis is already made and the rash usually develops before antibodies are detectable.
- Is not required in asymptomatic patients presenting with a recent tick bite. The patient should be advised to monitor the site for 30 days for signs of erythema migrans.
- Is most likely to be helpful when the rash is uncharacteristic and when symptoms indicate disseminated or later stage disease. Refer these cases to the Infectious Diseases Unit.
- Can take up to 8 weeks to become positive following exposure and is often negative when taken too early, potentially providing false reassurance.
- Requires date of tick exposure, clinical information and treatment history to accompany the request, otherwise may not be tested.

Patients with Lyme Borreliosis should be reported to Health Protection Scotland.

Antibiotic prophylaxis following a tick bite is not normally recommended in the UK. If the bite is (a) caused by a tick, (b) which has been attached for over 24 hours, (c) from an area where >20% of ticks are likely to be infected (although data for Scotland is currently not available) and (d) prophylaxis can be started within 72 hours of exposure, then prophylaxis can be considered and discussed with the on call Infectious Diseases registrar.

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