

The authors also suggest in their discussion that dogs and cats may play a role in the introduction of *Ixodes* spp (the main vector of Lyme disease) into Hong Kong. This is considered unlikely to occur as dogs imported into Hong Kong are individually examined by quarantine staff on arrival and treated for ticks if these are found. To date, no *Ixodes* spp have been identified on these dogs.

When taking into consideration the above points, it appears that further documentation is still required to confirm the reported case as the first case of Lyme disease in Hong Kong. In addition, we cannot support the recommendation for routine screening of patients with arthritis for Lyme disease in Hong Kong at this stage. We believe that testing for Lyme disease should only be targeted at patients returning from endemic areas with clinical indications. Results must be interpreted in light of epidemiological and clinical features.

## References

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Dear Sir,

### Re: Lyme Disease – A Brief Review and Report of a Case in Hong Kong

We appreciate the comments made by Drs. Lim, Lo, Mak and Sims and would like to make the following remarks.

Prevalence of *Ixodes* ticks in an area is not related to high infection rates<sup>1</sup> and this might be due to the presence of dog ticks and cat fleas, which are cosmopolitan, and which have been implicated in the transmission of Lyme disease.<sup>2</sup> Whether the localities visited were *Ixodes* tick habitats could thus be misleading. The statement was made to show that the patient had travelled and may therefore have contracted the disease outside Hong Kong.

## Letters to The Editor

Their claim that the patient had no concrete epidemiological or clinical evidence of Lyme disease is something upon which we can make little comment, since the diagnosis was made by her physician. He had treated this patient (his wife) for rheumatoid disease and later for degenerative joints, but with no success. His diagnosis of Lyme disease led to a 2 week course of tetracycline (a standard treatment for Lyme disease).<sup>3</sup> She recovered clinically and her anti-B burgdorferi (IFA) titre fell from 320 to <80, while her C-Reactive Protein (CRP), an acute phase protein, fell from an average of 28 to close to 10 mg/L, with no re-occurrence of symptoms to date. These results<sup>4</sup> are consistent with Lyme disease and reconfirm, we believe, the original diagnosis.

Lim *et al* mention that bioMerieux recommends a pathological limit of 160 but, as they correctly state, this has to be determined in particular populations. Since there had never been a reported case of Lyme disease in Hong Kong and since isolating the spirochete is difficult, a pool of "healthy" subjects (n=60) was used to determine the cut-off level, and they all showed a titre of <80. Because these data have not yet been published, however, we used the manufacturer's recommendation of <160.

A number of patients suffering from arthritis (but with negative rheumatoid factor and no antibodies to *T. Pallidum*) and showing different anti-B burgdorferi (IFA) titres were tested and the results (not yet published) were:

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Anti-B burgdorferi titre (IFA)	< 80	=80	≥160
Number of subjects (n)	30	24	14
C-Reactive Protein (mg/L)	17	19	35
Standard deviation	15	19	39

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Since the number of patients with high CRP concentrations and high titres (≥160) is significantly different from the other two populations ( $P < 0.025$ ), we believe that they are more likely to be suffering from infection. We appear to be the first group to study CRP in patients suffering from arthritis with altered anti-B burgdorferi titres, but we look forward to seeing results from similar studies.

Lim *et al* refer to the positive predictive value (PPV). We believe it can be determined more accurately if primary investigations such as seroprevalance studies or other means of detecting the disease have been completed. However, if the PPV is not known, and further studies are therefore not carried out, we end up with a "chicken and egg" problem. One must start somewhere and that is what we have attempted to do.

We do not know of any "clinical evidence" suggesting that Lyme disease is "likely to be very rare in the territory" since, as they rightly point out, "extensive studies for Lyme disease have not been performed in Hong Kong.

Lim *et al* then turn to diagnostic aids. Although serological studies are by no means perfect, they are still the most practical approach and offer the best diagnostic aid.<sup>5</sup> Lim *et al* suggest that immunoblotting is more sensitive and specific. However, it has been shown that the reputation of the western blot as the "gold standard" in HIV testing does not hold for Lyme borreliosis<sup>6</sup> and, this system was still not standardized in the diagnosis of Lyme disease as late as 1994, the last reference we had to the subject at the time of writing the paper.<sup>7</sup>

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Lim *et al* quote a reference<sup>8</sup> from 1995 which postdates our results and seems to claim that immunoblotting should be used to confirm positive results. However, this test is not currently available in Hong Kong, as they also point out, and we reiterate that we have attempted to reach the most practical and economic approach to this disease by using available technology and indeed technology which is used in more than 80% of all the papers, reports, etc., published on the disease worldwide.

We mentioned that pets could have imported the disease into Hong Kong. Although we note the statement that no *Ixodes* ticks have been identified on quarantined dogs, we must reiterate that various dog ticks and cat fleas (which are prevalent in Hong Kong) have been shown to be implicated in the transmission of Lyme disease.<sup>2</sup> Until and unless these findings can be disproved, we therefore stand by our statement that pets imported into Hong Kong could be implicated in the transmission of Lyme disease either by getting through inspection or by avoiding it.

Finally, Lim *et al* state that they "cannot support the recommendation for routine screening of patients with arthritis for Lyme disease in Hong Kong at this stage". We agree entirely and, indeed, did not make such a recommendation. We attempted to make physicians aware that Lyme disease is a possibility in Hong Kong and should be considered therefore amongst other factors during clinical diagnosis. As Vlay<sup>9</sup> put it: "if you forget to include it (Lyme disease) in the differential you will never make the diagnosis".

## References

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