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Letter to the editor

## Experience of three French centers in the management of more than 1,000 patients consulting for presumed Lyme Borreliosis

*Expérience de trois centres français dans la prise en charge de plus de 1000 patients consultant pour une maladie de Lyme présumée*

**Keywords:** Lyme borreliosis; Diagnostic holistic approach; Lyme overdiagnosis

**Mots clés :** Maladie de Lyme ; Approche diagnostique holistique ; Surdiagnostic de Lyme

We read with great interest the article by Jacquet et al. about the management of 478 patients consulting for a presumed Lyme borreliosis (LB) in Nancy, France [1]. We would like to discuss some of their results, and to compare them to those of two other French studies published after the authors submitted their article [2,3]. The aim is to highlight some of the specificities of these patients in France. Taken together these three studies include more than 1,000 patients consulting for a suspicion of LB.

The most striking result is that approximately 10% of such patients have a final diagnosis of LB: 9.6% in Paris [3], 12% in Besançon [2], and 15% in Nancy [1]. Such results clearly highlight the overdiagnosis of LB. This has already been discussed in the 1990s in the United States [4]. However, at that time the rate of LB was approximately 20% compared with 10% nowadays [5,6]. This alarming phenomenon of overdiagnosis has therefore increased over the past years despite less evidence to support it.

Overdiagnosis leads to overtreatment with antibiotics, but also to the overuse of antiparasitic, antifungal, and even antiviral drugs which are inappropriate in this setting [1,3]. The burden of this overdiagnosis is high as 85% of patients had received antibiotics active against LB in the Nancy study [1], which is in line with the 82% rate of overtreatment observed in our study [3]. This phenomenon should be tackled as the overuse of antibiotics leads to the increase in antibiotic resistance [7]. The emergence of antibiotic resistance is a worrying phenomenon worldwide. Moreover, many studies reported that the long-term use of antibiotics is useless in such patients [8].

The spectrum of the diagnosis in patients presenting with diseases other than LB should be specified in the Nancy study. It would be interesting to compare these results to those in Paris and Besançon, where 12% to 19% of patients were respectively diagnosed with neurological diseases whereas the corresponding figures were 15% and 43% for rheumatologic diseases, and 25% and 13% for psychological disorders [2,3]. We were not able to

find these results for the entire cohort of 478 patients in Nancy [1].

The group of undetermined diagnosis is the most important category in Nancy (36%) and the second most important in Besançon (31%) [1,2] compared with 6% in Paris [3]. In contrast, psychological disorders accounted for 25% of diagnoses in the Paris study [3] compared with 13% in Besançon, and probably less than 5% in Nancy [1,2]. It is obvious that more than 80% of patients complained of arthralgia, myalgia, and asthenia [1,3]. We thus hypothesized that the subset of patients presenting with somatoform signs could have been classified as psychological disorders in Paris and as undetermined diagnosis (or eventually as another group such as rheumatologic diseases) in Besançon and Nancy [1,2]. Indeed the overlap with fibromyalgia is obvious [9]. The holistic approach used in the Paris study led to the diagnosis of psychological disorders such as burn-out syndrome, post-traumatic stress disorder, moral harassment, sexual harassment, and depression that could have been missed in the Nancy study [3]. It is well-known that such syndromes could lead to so-called somatoform signs [10].

### Contribution of authors

E.C. wrote the article.  
E.H. and E.C. reviewed the article.

### Disclosure of interest

The authors declare that they have no competing interest.

### References

- [1] Jacquet C, Goehring F, Baux E, et al. Multidisciplinary management of patients presenting with Lyme disease suspicion. *Med Mal Infect* 2018, <http://dx.doi.org/10.1016/j.medmal.2018.06.002> [S0399-077X(18)30183-5].

- [2] Bouiller K, Klopfenstein T, Chirouze C. Consultation for presumed Lyme borreliosis: the need for a multidisciplinary management. *Clin Infect Dis* 2018 [CID-91953].
- [3] Haddad E, Chabane K, Jaureguiberry S, Monsel G, Pourcher V, Caumes E. Holistic approach in patients with presumed Lyme borreliosis leads to less than 10% of confirmation and more than 80% of antibiotics failure. *Clin Infect Dis* 2018, <http://dx.doi.org/10.1093/cid/ciy799>.
- [4] Sigal LH. The Lyme disease controversy. Social and financial costs of misdiagnosis and mismanagement. *Arch Intern Med* 1996;156:1493–500.
- [5] Steere AC, Taylor E, McHugh GL, Logigian EL. The overdiagnosis of Lyme disease. *JAMA* 1993;269:1812–6.
- [6] Reid MC, Schoen RT, Evans J, Rosenberg JC, Horwitz RI. The consequences of overdiagnosis and overtreatment of Lyme disease: an observational study. *Ann Intern Med* 1998;128:354–62.
- [7] Bell BG, Schellevis F, Stobberingh E, Goossens H, Pringle M. A systematic review and meta-analysis of the effects of antibiotic consumption on antibiotic resistance. *BMC Infect Dis* 2014;14:13, <http://dx.doi.org/10.1186/1471-2334-14-13>.
- [8] Berende A, ter Hofstede HJM, Vos FJ, van Middendorp H, Vogelaar ML, Tromp M, et al. Randomized trial of longer-term therapy for symptoms attributed to Lyme disease. *N Engl J Med* 2016;374(13):1209–20.
- [9] Sigal LH, Patella SJ. Lyme arthritis as the incorrect diagnosis in pediatric and adolescent fibromyalgia. *Pediatrics* 1992;90(4):523–8.
- [10] Murray M, Toussaint A, Althaus A, Löwe B. Barriers to the diagnosis of somatoform disorders in primary care: protocol for a systematic review of the current status. *Syst Rev* 2013;2:99.

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