Analysis Results of Antibiotic Safety and Efficacy in Treating Lyme Disease

The ***American Society for Microbiology*** published a new article in which researchers performed a network meta-analysis (NMA) to assess safety and efficacy of antibiotics to treat Lyme disease. Studies in the databases of Embase and PubMed were searched from the date of their establishments until April 22, 2021, a period of 40 years. When applying search parameters, a total of 31 randomized controlled trials were generated. Published clinical data from these trials included 2,748 patients and 11 antibiotics that were used in the analysis.

Results of the metadata analysis showed oral amoxicillin, oral azithromycin, injectable ceftriaxone, and injectable cefotaxime were effective for treating Lyme disease. It also found that Cefuroxime and penicillin were safe for treating Lyme disease, and amoxicillin was effective for treating Erythema migrans.

Researchers did not find evidence proving the advantage of doxycycline in efficacy and safety for treating Lyme disease, Lyme arthritis, Lyme neuroboreliosis, nor Erythema migrans of children or adults. Evidence was also lacking to prove the significant difference of efficacy for treating Lyme arthritis and Lyme neuroboreliosis in adults and Lyme disease in children, to show a significant difference of safety of oral drugs for treating Lyme disease, and to show significant difference of safety of drugs for treating Erythema migrans.

Researchers noted several limitations of their study that may have influenced results, including that the number of studies analyzed and the number of patients treated with the included drugs was relatively small, some studies were open label, and some studies were very dated. They highlighted that more research is needed to validate these findings and continue discussion of potential issues.

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