Addendum: Doxycycline for Young Children?

A reader commenting on our Treatment of Lyme Disease article (Med Lett Drugs Ther 2016; 58:57) objected to a footnote in the table advising against use of doxycycline in children <8 years old. This warning has been included in the labeling of all tetracyclines since 1970 when it was recognized, after decades of use, that these drugs caused permanent staining and enamel hypoplasia of developing teeth. The CDC recently stated that short courses of doxycycline, which was first marketed in the US in 1967 and has less affinity for calcium than other tetracyclines, have not been shown to cause tooth staining. That statement was prompted by the discovery that children <10 years old have a disproportionately high fatality rate from rickettsial diseases, particularly Rocky Mountain spotted fever, for which doxycycline is the drug of choice and chloramphenicol is the only proven alternative.

The main evidence supporting the CDC's statement was a retrospective cohort study consisting of a record review and dental examination of 271 children living on a Native American reservation. No staining was detected in any of the 58 children who had been treated with doxycycline before the age of 8 years or in any of the 213 children who had not been exposed to the drug. Enamel hypoplasia was present in 4% of children in both cohorts.

Lyme disease, unlike Rocky Mountain spotted fever, is seldom fatal and can be treated with antibiotics other than doxycycline. A single dose of doxycycline is recommended for prophylaxis after a tick bite. Given the CDC's statement about its safety, it would seem reasonable to use doxycycline for prophylaxis in all age groups. When longer treatment courses (10, 14, or 28 days) are recommended for the various clinical manifestations of Lyme disease in children <8 years old, alternative antibiotics generally could be used instead.


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