Letters to the Editor

RE: “USE OF PENICILLIN AND OTHER ANTIBIOTICS AND RISK OF MULTIPLE SCLEROSIS: A POPULATION-BASED CASE-CONTROL STUDY”

We read with great interest the recent article by Nørgaard et al (1). This large Danish cohort has been the subject of many important contributions in our understanding of the etiology of multiple sclerosis (2, 3). The authors showed that antibiotic prescriptions redeemed before disease onset were associated with increased risk of multiple sclerosis later in life (1). Nørgaard et al. suggest a causal association between the underlying infections and multiple sclerosis. The results from this study by Nørgaard et al. raise important questions regarding multiple sclerosis causality, and we agree with the authors on a potential role for infections in multiple sclerosis. However, we also believe that vitamin D deficiency may be involved, at least in part, in the observed association.

Vitamin D is a secosteroid hormone with numerous actions in multiple tissues, and deficiency has been found to be highly prevalent in the developed countries (4), including Denmark (5, 6). Both intake and high levels of vitamin D are inversely associated with risk of multiple sclerosis later in life (7, 8). Possibly the strongest evidence for vitamin D in multiple sclerosis comes from the observation that genes involved in vitamin D metabolism have been associated with multiple sclerosis susceptibility (9).

Notably, recent studies have shown that vitamin D increases the production of the antimicrobial peptide cathelicidin, as well as promoting several other antibacterial effects (10). Its involvement in vitamin D metabolism have been associated with multiple sclerosis susceptibility (9).

REFERENCES

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References
