Low vitamin D while pregnant or breastfeeding may not be associated with multiple sclerosis relapse

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A small study suggests women with multiple sclerosis have lower vitamin D levels during pregnancy and breastfeeding, according to a report posted online today that will appear in the March 2011 print issue of *Archives of Neurology*. However, these vitamin D levels were not associated with a greater risk of multiple sclerosis relapse after childbirth.

"During the last decade, low level of vitamin D, a potent immunomodulator, has emerged as an important risk factor for multiple sclerosis (MS) as well as other autoimmune diseases and certain cancers," the authors write as background information in the article. "The observation that healthy pregnant and lactating women are at particularly high risk of vitamin D insufficiency, regardless of race, suggests that pregnant and nursing mothers with MS may have a higher risk of relapses. However, it has already been well established that the risk of MS relapse decreases during pregnancy and increases in the postpartum period and that breastfeeding does not increase the risk of relapses."

Annette Langer-Gould, M.D., Ph.D., then of Stanford University School of Medicine, Stanford, Calif., and now of Kaiser Permanente Southern California's Department of Research and Evaluation, Pasadena, and colleagues studied 28 pregnant women with MS from Kaiser Permanente Northern California and the Stanford University outpatient neurology

clinics. Participants donated blood and completed questionnaires at the beginning of the study, during their remaining trimesters of pregnancy and regularly during the first year after birth.

Of the 28 women, half (14) breastfed exclusively and 43 percent (12) relapsed within six months after giving birth. During pregnancy, average blood levels of 25-hydroxyvitamin (25[OH]D, a common measure of vitamin D) were 25.4 nanograms per milliliter, and were associated with the season. After birth, levels remained low among women who were exclusively breastfeeding. By four and six months after childbirth, 25(OH)D levels were an average of 5 nanograms per milliliter lower among women who breastfed exclusively than among women who did not.

However, these low postpartum vitamin D levels were not associated with risk of MS relapse. "If anything, by three to six months after childbirth, 25(OH)D levels were marginally higher among the women who relapsed within the first six months after childbirth compared with women who were relapse-free during the corresponding period," the authors write. "We do not believe that higher vitamin D levels increase the risk of postpartum relapses, as the rise we observed did not appear to occur prior to the onset of symptoms and the findings were of marginal statistical significance after accounting for season. Instead, we think this apparent inverse association is a reflection of the fact that most of the women who relapsed in the study also did not breastfeed or did so only briefly."

The findings imply that the recommended dose of vitamin D supplementation for women with MS during pregnancy and breastfeeding should be the same as for women who do not have MS, the authors conclude. "Our results suggest that future studies aimed at identifying and unraveling the relationship between vitamin D, pregnancy/lactation-related hormones and regulation of MS

inflammation may reveal novel insights into MS pathophysiology," they write.

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