

Vitamin D Deficiency Linked to Tuberculosis Progression in Healthy Patients

Low vitamin D levels are associated with a 5-fold increased risk for tuberculosis (TB) disease progression in previously healthy household contacts of patients with TB, according to the results of a 4-year cohort follow-up study in Pakistan, reported in the May issue of *Emerging Infectious Diseases*. During 2001 to 2004, the researchers studied 109 healthy people in close contact with 20 different patients with TB and found that those with low vitamin D levels, especially women, were 5 times more likely to contract TB. Cohort participants were in “household contact” with patients recently diagnosed with sputum-positive pulmonary TB. The researchers collected blood samples at baseline and at 6, 12, and 24 months’ follow-up.

The researchers classified vitamin D levels as low, middle, or high. Median level for the cohort participants was 9.1 ng/mL. Median level for the disease-free household contacts was 9.6 ng/mL, 7.9 ng/mL for the TB index case-patients, 4.6 ng/mL for 2 co prevalent TB case-patients who were receiving antituberculous treatment at recruitment, and 5.1 ng/mL in 6 household contacts with a history of TB treatment.

Vitamin D levels of the disease-free study participants were significantly higher than in participants with a history of TB diagnosis at baseline ($p = .02$).

As the authors explain, vitamin D supplementation during TB treatment remains controversial, with mixed results from clinical trials to date of vitamin D for pulmonary TB. “Our findings,” conclude Talat and colleagues, “indicate that further studies should be conducted regarding use of vitamin D as a supplement for persons undergoing treatment for TB and those with latent TB infection.” *Emerg Infect Dis* 2010;16:853-855.

Lung Cancer Risk in Painters: A Meta-analysis

A meta-analysis to quantitatively compare the association between occupation as a painter and the incidence or mortality from lung cancer was conducted.

Data from 47 independent cohort, record linkage, and case control studies (from a total of 74 reports), including > 11,000 incident cases or deaths from lung cancer among painters was analyzed. The summary relative risk (meta-RR, random effects) for lung cancer in painters was 1.35 [95% confidence interval (CI), 1.291.41; 47 studies] and 1.35 (95% CI, 1.211.51; 27 studies) after controlling for smoking. The relative risk was higher in never-smokers (meta-RR = 2.00; 95% CI, 1.093.67; 3 studies) and persisted when restricted to studies that adjusted for other occupational exposures (meta-RR = 1.57; 95% CI, 1.212.04; 5 studies). The results remained robust when stratified by study design, sex, and study location and are therefore unlikely due to chance or bias. Furthermore, exposure response analyses suggested that the risk increased with duration of employment. These results support the conclusion that occupational exposures in painters are causally associated with the risk of lung cancer. *Environmental Health Perspectives* 2010;118(3)

Bariatric Surgery May Reduce Risk for Hypertensive Disorders in Pregnancy

Bariatric surgery may reduce risk for hypertensive disorders in subsequent pregnancy, according to the results of a retrospective analysis of US insurance claims data published online April 13 in the *BMJ*.

The goal of this retrospective cohort study, by Wendy L. Bennett, MD, and colleagues from Johns Hopkins University School of Medicine in Baltimore, Maryland, was to determine whether women who had a delivery after bariatric surgery had lower rates of hypertensive disorders in pregnancy than women who had a delivery before bariatric surgery. Using claims data for 2002 to 2006 from 7 US insurance plans, the investigators identified 585 women aged 16 to 45 years who had undergone bariatric surgery, had at least 1 pregnancy and delivery, and had continuous insurance coverage during pregnancy plus 2 weeks after delivery. The primary study endpoint was hypertensive disorders in pregnancy identified from *International Statistical Classification of Diseases and Related Health Problems, Ninth Edition*, codes, and the independent variable was the timing of delivery — before vs after

bariatric surgery. For each type of hypertensive disorder in pregnancy, odds ratios (ORs) and confidence intervals (CIs) were calculated from logistic regression.

Of the 585 participants, 269 delivered before bariatric surgery and 316 delivered after surgery. Most women (82%; 477) had gastric bypass surgery. Compared with women who delivered after surgery, those who delivered before surgery were younger at delivery (mean age, 31.3 vs 32.5 years; $P < .002$) and had higher rates of preexisting diabetes and gestational diabetes mellitus.

After adjustment for age at delivery, multiple pregnancy (twins or more), surgical procedure, preexisting diabetes, and insurance plan, rates of hypertensive disorders of pregnancy were markedly lower in women who delivered after surgery than in those who delivered before surgery. For preeclampsia and eclampsia, OR was 0.20 (95% CI, 0.09 - 0.44); for chronic hypertension complicating pregnancy, OR was 0.39 (95% CI, 0.20 - 0.74); and for gestational hypertension, OR was 0.16 (95% CI, 0.07 - 0.37).

The study authors point out the important clinical, public health, and policy implications of their findings. They suggest considering bariatric surgery in women of childbearing age who wish to start a family and who have a body mass index of 40 kg/m² or more, or a body mass index of 35 to 40 kg/m² with associated conditions. Addressing weight concerns at this visit, while not easy for both patient and provider, can lead to improved health outcomes for both mother and neonate. This is difficult, however, as over half of pregnancies occurring in the US are unplanned. *BMJ* Published online April 13, 2010.

Emergency Department Cardioversion Safe in Low-Risk Patients

Patients who undergo cardioversion in the emergency department (ED) but who are otherwise not at

particularly high cardiovascular risk do well in the subsequent month, Canadian researchers report.

Their study, published in the April issue of *Academic Emergency Medicine*, focused on patients with atrial fibrillation or flutter that began no more than a few days ago. Nearly all received primary cardioversion, according to the article; few patients were taking medications to control heart rate or rhythm.

"In a low-risk group of 400 emergency department patients who were in atrial fibrillation or flutter for less than 48 hours, and who underwent electrical cardioversion to restore normal sinus rhythm, there were no strokes or deaths within 30 days," lead author Dr. Frank Xavier Scheuermeyer of the University of British Columbia, Vancouver, told Reuters Health by e-mail.

Dr. Scheuermeyer and his colleagues reviewed data from 2 emergency departments to identify patients with atrial fibrillation or flutter. After excluding hemodynamically unstable patients and those with an underlying acute condition, the researchers studied 400 patients who had direct-current cardioversion. The majority had a CHADS2 stroke risk score of zero, indicating a 1-year stroke risk of 2%. Within 30 days, none died, and there were no new thromboembolic events. A formal chart review involving 141 randomly-selected patients showed that 5 (3.5%) failed cardioversion and 6 (4.3%) required assisted ventilations during the sedation procedure, but there were no other adverse events. In total, 5 patients were hospitalized at the index visit.

"Because rates of stroke, thromboembolism, and death are more closely related to underlying patient factors than to treatment approach," the researchers cautioned, "it may be inappropriate to extrapolate findings from non-ED settings to the management of relatively young healthy ED patients with atrial fibrillation or flutter."

The findings, the researchers conclude, suggest "that ED selection of cardioversion candidates is appropriate and that the procedure is safe up to 30 days for both atrial fibrillation and flutter." *Acad Emerg Med* 2010; 17:408-415.