Clinical Digest

PULMONARY MEDICINE

The Role of Anemia in COPD

Rarely has the prevalence and relevance of anemia in chronic obstructive pulmonary disease (COPD) been studied. So, operating under the assumption that anemia is common in COPD and hypothesizing that, in COPD, it is associated with inflammatory responses and relative erythropoietin resistance, researchers from University Hospital Charité, Berlin, Germany and National Heart and Lung Institute, London, UK set out to study whether anemia in COPD is related to the presence of cachexia.

They compared data from 101 patients with COPD to data from 15 healthy volunteers. Of the COPD patients, 13 were anemic (hemoglobin levels below 12 g/dL in the women and below 13.5 g/dL in the men). The anemic COPD patients had higher levels of erythropoietin and an increased inflammatory response compared to both nonanemic COPD patients and control subjects. In the anemic patients, there was a significant inverse correlation between levels of hemoglobin and erythropoietin, which was not observed in the nonanemic patients.

The inflammatory response, say researchers, confirms that anemia is at least partially due to excessive production of inflammatory cytokines, such as interleukin-6, which inhibit the production and effect of erythropoietin and iron in bone marrow. Once anemia has developed, they explain, an autoregulatory upregulation of erythropoietin helps maintain homeostasis, but COPD patients with anemia don't respond to this erythropoietin boost. The increased levels, they note, indicate a relative peripheral erythropoietin resistance in COPD similar to that found in other diseases. The researchers did not find a relationship between anemia and weight loss or cachexia, which suggests that the anemia was not due to nutritional factors.

More detailed investigations are needed, say the researchers, to show whether anemia is merely a marker or a mediator of processes that impair physical functioning in COPD. Then it would be clearer whether erythropoietin and iron supplementation would help improve patients' prognoses.

Source: *Chest.* 2005;127: 825–829.

WOMEN'S HEALTH

Failings of Osteoporosis Screening

Three commonly used clinical prediction rules (CPRs) may not be doing their job, according to researchers from Mayo Clinic and Mayo Foundation, Rochester, MN and Beth Israel Deaconess Medical Center, Boston, MA. They compared the general screening capacity of the Simple Calculated Osteoporosis Risk Estimation (SCORE), Osteoporosis Risk Assessment Instrument (ORAI), and National Osteoporosis Foundation (NOF) practice guidelines and found that none performed well. These CPRs were quite sensitive, they say, but none was very specific.

When applied to an independent, population-based sample of 202 postmenopausal women aged 45 or older, the SCORE and the ORAI, respectively, recommended bone mineral density (BMD) testing in 71% and 60% of the women who did not have osteoporosis. The NOF guidelines were the least specific, recommending testing in 90% of the women who did not have osteoporosis.

The SCORE and ORAI were more specific in postmenopausal women under the age of 65. But even in this group, they recommended BMD testing in 59% and 31% of women without osteoporosis, respectively.

Although these tools do not perform well for general screening, the researchers concluded, they may be helpful in identifying women who do not need to undergo BMD testing. They add that most of the osteoporosis CPRs were developed and tested in "rather homogeneous cohorts" of non-Hispanic, white women and are thus of limited use in broader populations.

Source: *Arch Intern Med.* 2005;165:530–536.

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NATIVE AMERICAN HEALTH

Disparity Between CVD Risk and Mortality?

Native Americans are at higher risk for cardiovascular disease (CVD) than the rest of the U.S. population—yet national vital statistics have indicated disproportionately low CVD mortality rates. Now, researchers from the University of Colorado Health Sciences Center, Denver say the answer to this conundrum is that racial misclassification has contributed to falsely low CVD mortality rates in the national data.

Since the 1950s, the IHS has compiled mortality reports, using population estimates from census reports and vital event data from the National Center for Health Statistics, for roughly 60% of the total Native American population. It wasn't until the 1990s, however, that it began to adjust for racial misclassification. The Denver researchers analyzed these IHS-adjusted data, along with earlier IHS data (between 1989 and 1993) they adjusted themselves.

The adjustments raised mortality rates for heart disease and cerebrovascular disease in the IHS population by 18% and 11%, respectively, pushing them

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above those for the "U.S. all races" and "U.S. white" groups. Furthermore, because heart disease and related mortality have increased in Native Americans while declining in these other groups, the gap has only widened.

Heart disease was the leading cause of death among Native Americans beginning at age 45, whereas it didn't reach that status for the rest of the population until age 65. In the 45-to-54 age group, both unadjusted and adjusted CVD mortality rates were dramatically higher in Native Americans than in all races and whites, and the disparities increased over time. Over age 65, however, rates were lower among Native Americans and the changes over time were similar for all populations studied.

The researchers note that mortality from "signs, symptoms, and ill-defined conditions" was a disproportionately leading cause of death among Native Americans in New Mexico, which likely contributed to underestimation of CVD deaths. They add that racial misclassification among Native Americans nationwide also has resulted in substantially underestimated rates of cancer death, injury, and end-stage renal disease. ●

Source: *Circulation*. 2005; 111:1250–1256.