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Glucose Metabolism and Coronary Heart Disease in Patients with Normal Glucose Tolerance

Source: Sasso FC, et al. *JAMA*. 2004;291:1857-1863.

THERE IS A CLEARLY ESTABLISHED relationship between frank diabetes (DM) and increased vascular risk, especially coronary heart disease. Whether more modest perturbations in glucose regulation might be reflected in coronary vascular pathology has not been satisfactorily elucidated. Results studying the association between cardiovascular risk and markers such as subsyndromal levels of hemoglobin A1c, fasting glucose, or postload glucose have not provided consistent results. The relationship between glucose metabolism amongst persons with coronary heart disease (CHD) but without frank evidence of glucose derangement (ie, diabetes, impaired fasting glucose, or postload glycemia) is unstudied.

Glucose metabolism was examined in patients admitted and underwent coronary angiography for suspected CHD (n = 234). Patients who met criteria for diabetes, impaired fasting glucose, or postload glycemia were excluded from evaluation.

The level of fasting glucose was similar amongst all subjects. The number of stenosed coronary vessels was associated in a linear fashion with the levels of post load glucose and hemoglobin A1c. Even amongst persons without demonstrable stigmata of deranged glucose metabolism, risk for CHD is associated with increasing A1c and postload glucose levels. These data suggest that the relationship between some markers of glucose metabolism and CHD may be linear and continuous, even below the currently recognized thresholds for intervention. ■

Evidence of Airborne Transmission of the Severe Acute Respiratory Syndrome Virus

Source: Yu ITS, et al. *N Engl J Med*. 2004;350:1731-1739.

FOR THE MOMENT, THE IMMEDIATE threat of Severe Acute Respiratory Syndrome virus (SARS) appears to have passed in the United States. The serious morbidity and mortality of the virus mandate clarification of just how disease may be transmitted, which has been as yet incompletely understood.

A large outbreak of SARS cases (n = 187) in a single housing complex provided sufficient information to model potential transmission channels.

The place of residence of the SARS cases (Anoy Gardens, Honk Kong), was able to be stratified into distance between buildings in the complex, direction of prevailing winds, height of units from the ground (buildings were categorized into low, middle, and high distance off the ground), and presence or absence of a window admitting the prevailing wind. Computational fluid dynamics was utilized to model the airflow pattern in and around buildings in the complex.

Data analysis supports the hypothesis that there was a common source outbreak at this site, spread by virus-laden aerosol. Were SARS to recur, such knowledge may assist future disease prevention and containment. ■

Alcohol Intake and Risk of Incident Gout in Men

Source: Choi HK, et al. *Lancet*. 2004; 363:1277-1281.

THE ASSOCIATION BETWEEN GOUT AND alcohol consumption has been oft quoted, though never previously established by a prospective trial. It has been confirmed that alcohol loading acutely induces elevations in blood uric acid; case-control studies and cohort studies have found an association between gout and alcohol, but suffer from retrospectively reported alcohol consumption.

Subjects from the Health Professionals Follow-up Study (n = 51,529) comprise an all-male, predominantly white cross-section of clinicians including dentists, optometrists, physicians, and veterinarians. At enrollment, 5.6% of these men reported gout, and were excluded from this analysis. Subjects were periodically monitored for nutrient and alcohol intake from 1986-1998.

Alcohol intake and gout were found to be related in a linear fashion. Men consuming more than 50g/d alcohol (1 beer was designated as containing 12.8 g alcohol in this study) demonstrated a 3-fold increased likelihood of developing gout than non-drinkers. The strongest relationship

between alcohol and gout was found for beer; a lesser relationship was seen with spirits. Wine intake was not associated with subsequent gout, regardless of type (white vs red) or level of intake. This prospective study is the first to confirm an association between alcohol intake and gout. ■

Prevention of Strokes by Successful Carotid Endarterectomy in Patients without Recent Neurological Symptoms

Source: MRC Asymptomatic Carotid Surgery Trial Collaborative Group. *Lancet*. 2004;363:1491-502

Clear-cut benefit from carotid endarterectomy for secondary prevention of stroke amongst persons with carotid stenosis who have suffered a stroke/TIA has been well established. Less data is available to lead clinicians towards the best therapeutic choice in persons with asymptomatic carotid stenosis (aCST). The MRC Asymptomatic Carotid Surgery Trial studied patients (n = 3120) with at least 60% stenosis confirmed by ultrasound, in the absence of prior neurologic symptoms suggesting ischemia. Study subjects were enrolled beginning in 1993, and followed for up to 5 years.

When immediate perioperative stroke and death was excluded, the overall 5-year stroke risk was 3.8% in the operative group, versus 11% in the medically managed group. Even when including the perioperative stroke/death risk (= 3.1%), the overall 5-year risk profile supported carotid endarterectomy (stroke rate 6.4% vs 11.8%).

No particular subgroup was noted to have any greater or lesser benefit. For instance, similar benefits were seen in both genders, for all degrees of stenosis greater than 70%, and for all ages up to age 74. For those older than age 74, mortality benefits were notably absent, due to the overriding effect of deaths from other causes.

These data should enhance clinician confidence in the appropriateness of carotid endarterectomy for asymptomatic individuals with greater than 70% stenosis. A critical factor in the decision path will be whether any one clinician's local surgical outcomes are as excellent as those demonstrated here: a higher perioperative stroke/mortality rate could completely defeat long-term benefits. ■

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Cox-2 Inhibitors vs Nonselective NSAIDs and CHF Outcomes in Elderly Patients

Source: Mamdani M, et al *Lancet*. 2004;363:1751-1756.

Use of non-selective NSAIDs can induce retention of Na+, K+, and water. Whether selective Cox-2 inhibitors (COXIBs) are fraught with an equally daunting likelihood of potential for fluid and electrolyte imbalance is uncertain. One large study of rofecoxib indicated an increased risk for acute MI, but the implication of these data is much debated. Because many senior adults are receiving either NSAIDs or COXIBs, the relative risk for induction of heart failure (CHF) by these classes of agents is important to discern.

To compare the likelihood of CHF in patients receiving COXIBs, as compared to NSAIDs, Mamdani and colleagues performed a population-based retrospective cohort study of adults over age 66 who had been prescribed rofecoxib (n = 14,583), celecoxib (n = 18,908), NSAIDs (n = 5391), and a control group (non-users of NSAIDs, n = 100,000).

The relative risk for CHF admission amongst recipients of NSAIDs and rofecoxib was increased compared to controls (RR = 1.8 and 1.4, respectively). Celecoxib use was not associated with an increased CHF risk vs control.

NSAIDs are confirmed to increase risk for CHF admission. Amongst COXIBs, celecoxib does not appear to be associated with the same increased CHF risk as rofecoxib. ■

Interventions for the Prevention of Falls in Older Adults

Source: Chang JT, et al *BMJ USA*. 2004;4:223-226.

One-third of persons older than age 65, and one-half of those older than 80 sustain a fall annually, many of which result in hospital admission, impairment of mobility, or even death. A variety of interventions intended to reduce falls in the elderly have been studied, including exercise, environmental modification, education, and multifactorial risk identification and management.

Chang and associates performed a meta-analysis to evaluate comparative benefits of individual fall-prevention interventions and multifactorial fall risk assessment and management (MFRAM) programs, compared to usual care. A MFRAM was defined as a post-fall evaluation coupled with intervention recommendations and followup. Assessing data from 40 trials, an overall risk reduction of 12% was seen. Meta-regression of individual fall-reduction program components indicated that MFRAM was most effective (NNT = 11), followed by exercise interventions (NNT = 16).

The environmental modification or educational program components of fall prevention did not emerge with a statistically significant favorable effect upon falls. The best investment of effort for fall prevention in seniors appears to be MFRAM and exercise. ■