

Neighborhood Factors May Predict Cardiac Risks

BY ROBERT FINN

SAN FRANCISCO — Women who live in economically deprived neighborhoods or neighborhoods that lack social cohesion have higher rates of coronary artery calcification than other women.

In men, however, the association with coronary artery calcification is statisti-

neighborhood deprivation had about a 2.5-fold risk of coronary artery calcification (CAC), compared with women in the lowest quartile. Similarly, women in the lowest quartile of neighborhood cohesion had about twice the risk of CAC as women in the highest quartile, Dr. Kim reported.

Neither neighborhood cohesion nor neighborhood deprivation alone was significantly associated with CAC in men, but those living in the lowest three quartiles of neighborhood cohesion who were also living in deprived neighborhoods were about three times as likely to have CAC as those living in deprived neighborhoods with the highest levels of cohesion.

Data from the study came from 2,974 adults participating in the Coronary Artery Risk Development in Young Adults (CARDIA) study, said Dr. Kim of the Harvard School of Public Health, Boston.

CARDIA is a prospective cohort study of young adults in four urban areas—Birmingham, Ala.; Chicago; Minneapolis; and Oakland, Calif.—who have been followed since 1985. Included in this study were those participants who had undergone measures of CAC in 2005 when they were 37-50 years old.

The investigators assessed neighbor-

hood deprivation by combining six indicators: median household income; median value of housing units; percentage of households receiving interest, dividend, or rental income; percentage of adults who had completed high school; percentage of adults who had completed college; and percentage employed in executive, managerial, or specialty occupations.

They assessed perceived neighborhood cohesion from participants' answers to five survey items: people's willingness to help their neighbors, whether the neighborhood is "close-knit," whether people in the neighborhood can be trusted, whether they get along with each other, and whether they share the same values.

Investigators adjusted their results. ■

VITALS

Major Finding: Women in the highest quartile of neighborhood deprivation had about 2.5-fold the risk of coronary artery calcification as women in the lowest quartile.

Data Source: The CARDIA study of 2,974 adults.

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cally significant only for those who live in neighborhoods characterized both by economic deprivation and lack of social cohesion.

"Neighborhood deprivation and low cohesion may predict very early coronary heart disease in younger, asymptomatic adults," Dr. Daniel Kim said at a conference sponsored by the American Heart Association. "These results are consistent with neighborhood deprivation and low cohesion as fundamental or root causes of coronary heart disease."

Women in the highest quartile of

Access to High-Quality Food Is Key

Dr. Kim's study is important because we don't pay enough attention to neighborhoods and their role in encouraging or discouraging good dietary practices. It's well known that economically deprived neighborhoods tend to have lots of fast-food emporia and not much in the way of first-class supermarkets.

I'm reminded that back in the 1940s two great congressmen, Sen. Lister Hill (1894-1984, D-Ala.) and Sen. Harold Burton (1888-1964, R-Ohio), were successful in passing the landmark Hospital Survey and Construction Act. This financed the construction and renovation of more than 9,200 medical

facilities, many of which were in low-income communities.

The modern version of the law would be an act by Congress to finance the construction of first-class supermarkets in more communities. These supermarkets could stock high-quality food and make it available at low prices. This would allow people living in deprived

communities to improve their diets and overcome their unfavorable cardiovascular risk status.

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Genotyping for Warfarin Sensitivity May Cut Hospitalization

BY MITCHEL L. ZOLER

ATLANTA — Genotyping patients to determine warfarin sensitivity was associated with a 30% relative cut in hospitalizations during the initial 6 months after the start of warfarin therapy in a controlled study of more than 3,500 patients.

The Medco-Mayo Warfarin Effectiveness Study identified outpatients who filled first-time prescriptions for warfarin through Medco, and invited them to participate in the study and obtain free genotype testing with their physicians' approval. Three-quarters of the warfarin-prescribing physicians approached about the study agreed to receive the genotype information, and they then had the option of modifying the dosages they prescribed based on the genotype reports. There were 890 patients whose physicians received genotype reports and 2,688 in the control group, Dr. Robert S. Epstein said at the annual meeting of the American College of Cardiology.

The test included the gene for cytochrome p450 2C9, an enzyme involved in metabolizing warfarin into its active form, and the gene for VKORC1, an enzyme that produces the active form of vitamin K needed for blood clotting. These two genes together account for a third of the variance in stable warfarin dosing, said Dr. Epstein, chief medical officer of Medco Health Solutions in Franklin

Lakes, N.J. He estimated that running the two tests, which are approved for U.S. use, cost about \$200-\$400.

Genotyping identified 29% of patients with below-normal warfarin sensitivity, 28% with normal sensitivity, and 43% with varying levels of above-normal sensitivity, which was subdivided in the reports into mild, moderate, high, and very high levels of elevated sensitivity. The genotyping results reached physicians a median of 32 days after warfarin therapy had begun, with a range of 11-60 days.

In the 6 months after the study began, the all-cause hospitalization rate was 18.5% in the patients whose physicians received genotype reports and 25.5% in the control patients, a 28% relative reduction that was statistically significant. Hospitalizations for bleeding or thromboembolic events occurred in 6% of the genotyped patients and in slightly more than 8% of the controls, a 27% relative reduction that was statistically significant.

Warfarin genotyping was linked with a relative drop in all-cause hospitalization of 31%, and a relative drop in hospitalizations for bleeding or thromboembolism of 28%, both statistically significant effects, after the researchers controlled for baseline differences in patients' age, comorbid conditions, other drugs used, warfarin indication, prior gastrointestinal bleeding, venous thromboembolism, history of hospitalization, and propensity score.

"We can reduce hospitalization for a cost savings that is greater than the cost of testing. If testing raises attention that a patient is an outlier [who is] very sensitive or insensitive to warfarin, and brings more precision to warfarin dosing,

I think it's a good thing," said Dr. Epstein.

Medco and the Mayo Clinic Center for Individualized Medicine funded the study. Dr. Epstein said he and his associates had no relevant financial conflicts. ■

Poor Design Limits Study Findings

The value of warfarin genotyping in the real world was not established by this study. Any primary outcome must have some direct biological plausibility of the intervention tested. The thromboembolism and bleeding outcome is clearly in line with what one would expect, but all-cause hospitalization creates some reservations. There is some doubt that warfarin has a disease-modifying effect of equal magnitude on other primary-disease etiologies. One has to assume that we are merely seeing a Hawthorne effect on a population with much closer and better follow-up.

Even when you include propensity scoring, one can only control for the baseline variables that one can see. The dynamic variables that occur by following patients with war-

farin titration are not accounted for by the propensity score analysis. In addition, there is considerable doubt as to whether control patients were equally managed during the postintervention phase. Also, there were no data on the international normalized ratio achieved.

My conclusion is that the outcome was more likely the result of closer attention and better follow-up. The trial design was not adequate to answer the question that was posed.

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MY TAKE