Obesity Paradox Identified in Non–ST-Elevation MI

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NEW ORLEANS — An obesity paradox applies in non–ST-segment-elevation MI, such that being overweight or obese is associated with a strikingly lower in-hospital mortality than being lean, R. Scott Wright, M.D., reported at the annual scientific sessions of the American Heart Association.

The explanation for this phenomenon remains unclear. So do its long-term implications. One thing for sure, however, is that physicians who treat patients with acute coronary syndrome are going to be seeing a lot more of the obesity paradox.

"The pandemic of obesity will be associated in our lifetimes with patients coming in at a younger age with non–ST-segment-elevation MI [NSTEMI]. We must carefully establish future risks of recurrent infarction and long-term mortality—that is, the risks beyond hospital discharge—before concluding that the obesity paradox is a benign paradox or a favorable thing," cautioned Dr. Wright of the Mayo Clinic, Rochester, Minn.

"Indeed, I would caution that the obesity paradox is in fact probably not benign, that it's perhaps a predictor of patients who'll present again later and may in fact have increased long-term mortality risk rather than simply lower short-term risks," the cardiologist added.

He and others have previously described the presence of an obesity paradox in patients with ST-elevation MI, work he characterized as based upon limited patient numbers and single-center studies.

He decided to take a more comprehensive look at the obesity paradox, this time in patients with NSTEMI, a population in which the phenomenon had not previously been examined. He did so using the National Registry of Myocardial Infarction-4 (NRMI-4) database.

NRMI-4, sponsored by Genentech Inc., is the largest, most comprehensive registry of MI patients in the United States. It includes roughly one-quarter of all patients experiencing acute MI nationwide. He reported on 280,341 patients with NSTEMI, of whom 44.6% were obese.

In-hospital mortality in the obese NSTEMI patients was only half that in the 25.8% of the NRMI-4 cohort who were lean, while overweight patients had an intermediate mortality rate. Obese patients with NSTEMI also had significantly lower rates of new-onset atrial fibrillation and heart failure, although their in-hospital recurrent MI rate didn't differ from that of lean patients.

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The superior short-term prognosis associated with NSTEMI in obese patients was present despite the much greater prevalence of diabetes in the obese subgroup: 45%, compared with 32% in overweight and 26% in lean patients. A history of hypertension also was significantly more common in obese patients.

Dr. Wright offered several possible explanations that might account for the obesity paradox. Perhaps the most compelling had to do with patient age. Advanced age is one of the strongest predictors of poor outcome in acute MI. At a mean age of 65.5 years, obese NSTEMI patients were a full decade younger on average than lean ones.

Also, obese patients tended to present with NSTEMIs having lower-risk features. This was reflected in their Thrombosis in Myocardial Infarction risk scores. The prevalence of a high TIMI risk score was only 28.5% in obese patients, compared with 35.4% in overweight and 51.4% in lean patients.

Moreover, obese patients in this large registry were more likely than overweight or lean patients to receive appropriate aggressive therapies for their NSTEMI. They had higher rates of utilization of ACE inhibitors, β-blockers, glycoprotein IIb/IIIa inhibitors, and other medications.

The coronary revascularization rate was 42.4% in obese patients, 39.7% in overweight ones, and only 24.2% in lean patients, which could be yet another key factor in the reduced short-term mortality in the obese, Dr. Wright observed. ■