

Serum Melatonin: New MI Outcome Predictor?

BY BRUCE JANCIN
Denver Bureau

VANCOUVER, B.C. — Serum melatonin shows considerable potential as a prognostic indicator in acute MI patients, Alberto Dominguez-Rodriguez, M.D., said at a meeting sponsored by the International Academy of Cardiology.

He reported on 80 consecutive patients admitted to a coronary care unit for ST-segment elevation MI (STEMI) in whom

serum melatonin was measured along with, for purposes of comparison, two widely accepted acute-phase prognostic biomarkers: troponin I and C-reactive protein (CRP). A low serum melatonin proved to have the greatest predictive power of the three for the end points of death and development of heart failure within the ensuing 6 months, according to Dr. Dominguez-Rodriguez of Canarias University Hospital in Tenerife, Spain.

The investigators obtained blood sam-

ples for measurement of melatonin, CRP, and troponin I at 2 a.m. within the first 24 hours after patients arrived at the hospital. The six STEMI patients who died within 6 months had a mean nocturnal melatonin level of 5.30 pg/mL. Twenty-nine who developed heart failure had a mean level of 19.45 pg/mL. In contrast, the 45 patients who remained event free during follow-up had a mean nocturnal melatonin of 24.80 pg/mL.

In a multivariate analysis, nocturnal

melatonin level early after MI emerged as the most powerful independent predictor of poor outcome at 6 months. A melatonin level below 15.13 pg/mL was associated with a 4.2-fold increased risk of death or heart failure. The other significant predictors were age greater than 70 years, which conferred a 2.8-fold increased risk, and presenting in Killip class II or higher, with an odds ratio of 2.21. Neither troponin I nor CRP was a significant predictor of poor outcome. ■

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Safety and effectiveness in pediatric patients have not been established. Greater sensitivity of some older individuals (eg, ≥75 years) with heart failure must be considered.

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Reference: 1. McMurray JJV, Östergren J, Swedberg K, et al, for the CHARM Investigators and Committees. Effects of candesartan in patients with chronic heart failure and reduced left-ventricular systolic function taking angiotensin-converting-enzyme inhibitors: the CHARM-Added trial. *Lancet*. 2003;362:767-771.

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