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Depression and Whole Blood Serotonin in Patients with Coronary Heart Disease from the Heart and Soul Study

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Objective: Depression is associated with incident coronary heart disease (CHD) and with adverse cardiovascular outcomes. Dysregulation of peripheral serotonin, common to both depression and CHD, may contribute to this association. However, it is unclear whether depression is associated with serotonin in outpatients with stable CHD.

Methods: We performed a cross-sectional study of 791 participants with stable CHD enrolled in the Heart and Soul Study and not taking antidepressant medication. We assessed major depression using the Computerized Diagnostic Interview Sched-

ule (CDIS-IV) and measured whole blood serotonin (WBS) from fasting venous samples.

Results: Of the 791 participants, 114 (14%) had current (past month) major depression, 186 (24%) had past (but not current) major depression, and 491 (62%) had no history of depression. Age-adjusted mean WBS was higher in participants with current major depression (139 ± 6.5 ng/mL) than in those with past depression (120 ± 5.0 ng/mL) or no history of depression (119 ± 3.1 ng/mL) ($P = .02$). The strength of this association was unchanged after adjustment for demographic characteristics, medical comorbidities, medication use, and cardiac disease severity ($P = .02$). When serotonin was analyzed as a dichotomous variable, current depression was associated with a 70% greater odds of having WBS in the highest quartile (adjusted OR = 1.7; 95% CI, 1.01 to 2.8; $P = .04$).

Conclusions: In this sample of patients with stable CHD, current major depression was independently associated with higher mean WBS levels. Future studies should examine whether elevated WBS may contribute to adverse outcomes in patients with depression and CHD.