Universität Basel

Publication

Depression and cardiovascular disease are not linked by high blood pressure: findings from the SAPALDIA cohort

Depression and cardiovascular disease (CVD) are main contributors to the global disease burden and are linked. Pathophysiological pathways through increased blood pressure (BP) are a common focus in studies aiming to explain the relationship. However, studies to date have not differentiated between the predictive effect of depression on the course of BP versus hypertension diagnosis. Hence, we aimed to elucidate this relationship by incorporating these novel aspects in the context of a cohort study. We included initially normotensive participants (n = 3214) from the second (2001-2003), third (2009-2011), and fourth (2016-2018) waves of the Swiss Cohort Study on Air Pollution and Lung and Heart Diseases in Adults (SAPALDIA). We defined depression based on physician diagnosis, depression treatment and/or SF-36 Mental Health score < 50. The prospective association between depression and BP change was quantified using multivariable censored regression models, and logistic regression for the association between depression and incident hypertension diagnosis. All models used clustered robust standard errors to account for repeat measurements. The age-related increase in systolic BP was slightly lower among people with depression at baseline (beta = - 2.08 mmHg/10 years, 95% CI - 4.09 to - 0.07) compared to non-depressed. A similar trend was observed with diastolic BP (beta = - 0.88 mmHg/10 years, 95% CI - 2.15 to 0.39), albeit weaker and not statistically significant. Depression predicted the incidence of hypertension diagnosis (OR 1.86, 95% CI 1.33 to 2.60). Our findings do not support the hypothesis that depression leads to CVD by increasing BP. Future research on the role of depression in the pathway to hypertension and CVD is warranted in larger cohorts, taking into account healthcare utilization as well as medication for depression and hypertension.

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