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Abstract: The natriuretic peptides BNP and NT-proBNP are potent cardiac markers, but knowledge of long-term changes is sparse. We thus quantified determinants of change in BNP and NT-proBNP in a study of south German residents (KORA). A total of 1005 men and women (age 25-74 years, mean 48 years) underwent physical examination and echocardiography at baseline and at follow-up after 10 years. The current analysis comprised 877 subjects with dual measurements of BNP and NT-proBNP. Both markers increased in both sexes (P< 0.001) during the 10-year follow-up, and higher levels in women persisted across time (P for sex difference<0.001). Among baseline covariates, predictors for 10-year change of NT-proBNP, BNP, or both were age, sex, diabetes status, and heart rate (multivariable regression analysis, each P< 0.05). However, changes of covariates over the 10-year follow-up were much stronger determinants. Specifically, incident myocardial infarction, new beta-blocker medication, and increased cardiac parameters (left atrial diameter, LV end-diastolic diameter, and LV mass index) were associated with increasing BNP,
NT-proBNP, or both, whereas increased heart rate, haematocrit, and body mass index (BMI) were associated with decreasing BNP and NT-proBNP (all $P<0.05$). Next to ageing and sex, a variety of changes in covariates reflecting the sequelae of cardiac remodelling as well as myocardial infarction and diabetes influence long-term changes of BNP and NT-proBNP. Of note, diabetes and increased BMI exert opposite effects. For interpretation of individual marker concentrations, a host of covariates needs to be considered, especially in subjects without prevalent or incident cardiac disease.