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IN BRIEF

ARRHYTHMIAS

No increased risk of cardiovascular disease or death with bradycardia

Bradycardia is usually defined as a resting heart rate of <60 bpm or <50 bpm. Data from the Multi-Ethnic Study of Atherosclerosis (MESA) now show that bradycardia is not generally associated with an increased risk of cardiovascular disease or death. In a retrospective analysis of 6,733 participants from MESA, the mean age was 62 years, 47% were male, and 13.4% were taking a heart-rate-modifying drug. The mean heart rate was 63 bmp among individuals not taking a heart-rate-modifying drug, and 60 bmp among those taking a heart-rate-modifying drug. Bradycardia (heart rate <50 bpm) was not associated with an increased incidence of cardiovascular disease in either group. In individuals not taking a heart-rate-modifying drug, bradycardia did not affect the adjusted risk of death (HR 0.71, 95% CI 0.41–1.09), whereas a heart rate >80 bpm was associated with an increased risk of death (HR 1.49, 95% CI 1.08–2.05, $P = 0.01$). In patients taking a heart-rate-modifying drug, both bradycardia (HR 2.42, 95% CI 1.39–4.02, $P = 0.002$) and a heart rate >80 bpm (HR 3.55, 95% CI 1.65–7.65, $P = 0.001$) were associated with an increased risk of death. "Our results," conclude the investigators, "may be reassuring to most adults found to have asymptomatic bradycardia. In contrast, the association of bradycardia with mortality among participants prescribed drugs that may slow heart rate may have clinical relevance."

ORIGINAL ARTICLE Dharod, A. *et al.* Association of asymptomatic bradycardia with incident cardiovascular disease and mortality: the Multi-Ethnic Study of Atherosclerosis (MESA). *JAMA Intern. Med.* doi:10.1001/jamainternmed.2015.7655

AORTIC DISEASES

FBN1 mutation affects survival in Marfan syndrome

The presence and nature of a mutation in the *FBN1* gene affects the risk of aortic dissection and cardiovascular death in patients with Marfan syndrome. This finding comes from a study involving all 570 adults with Marfan syndrome included in the Dutch CONgenital CORvita registry since 2001. Cumulative survival was 93.8% and dissection-free survival was 84.2% after 10 years of follow-up. A pathogenic mutation in *FBN1*, which encodes fibrillin-1, was present in 357 patients. In 40.9% of these patients, the mutation resulted in haploinsufficiency (reduced fibrillin-1 protein); in the other 59.1% of patients, the mutation had a dominant-negative effect (abnormal fibrillin-1 protein). Patients with a haploinsufficiency mutation had an increased risk of cardiovascular death (HR 2.5, 95% CI 1.0–6.1, $P = 0.049$), the combined end point of death and dissection (HR 2.4, 95% CI 1.4–4.2, $P < 0.001$), and of any aortic complication (HR 1.6, 95% CI 1.1–2.3, $P = 0.014$), compared with patients with a dominant-negative mutation.

ORIGINAL ARTICLE Franken, R. *et al.* Genotype impacts survival in Marfan syndrome. *Eur. Heart J.* doi:10.1093/eurheartj/ehv739