Background. — AF following cardiac surgery is a common complicating risk of embolic events, hemodynamic instability, postoperative heart failure, hemorrhagic complications and increasing in-hospital length of stay.

Methods. — Thirty-one consecutive patients (17 males, 55%), aged (72 ± 9) with severe symptomatic AS (area < 1 cm²), who underwent aortic valve replacement (AVR) were prospectively included in two centers between 2009 and 2010. A complete preoperative echocardiography was performed in all patients, including global and segmental longitudinal strain using 2D speckle tracking. AF was divided into paroxysmal AF when AF lasted less than 48 h and persistent when AF remained at discharge.

Results. — The incidence of postoperative AF was (19/31, 61%). Nine patients had paroxysmal AF and 10 had persistent AF. On univariate analysis, heavy weight (P = 0.038) and GLS (P = 0.01) were the only predictors of paroxysmal postoperative AF. Using ROC curves, a cut-off value of −15% for GLS could predict persistent AF with a sensitivity of 74% and a specificity of 67%; area under curve (AUC) 0.75. On univariate analysis, increased LV end systolic diameter (P = 0.006), E/E' ratio (P = 0.001), systolic pulmonary artery pressure (P = 0.03), LV ejection fraction (P = 0.006) and GLS (P = 0.01) were the only predictors of persistent AF. Using ROC curves, a cut-off value of −15% for GLS could predict persistent AF with a sensitivity of 90% and a specificity of 67%; AUC 0.87.

Conclusions. — Decreased preoperative GLS could predict postoperative paroxysmal and persistent AF. The best sensitivity and specificity were obtained with a cut-off value for GLS of −15%. Indeed, prothrombotic antithrombotic therapy should be particularly proposed in patients with impaired longitudinal systolic function before AVR.

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Echocardiographic changes of cardiac function during ultra distance and trail running

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Background. — Previous studies have suggested that marathon may induce reversible cardiac dysfunction. However, no previous study has assessed cardiac function during ultra distance and trail running. The aim of this study was to assess systolic and diastolic function during ultra distance and trail running.

Methods. — We studied 28 subjects (amateur runners) participating in the 2010 Ecotrail (80 km). All subjects underwent several echocardiographic examinations: before, during the race (Km 21 and Km 50) and at the end of the race. We systematically recorded 2D parasternal long axis and apical 4, 3 and 2 chamber views, allowing to measure conventional LV parameters and longitudinal strain. We also recorded PW mitral inflow and Doppler tissue imaging of the mitral annulus (lateral and septal). All measurements were anonymously performed.

Results. — Mean age was 43 ± 9 years. Twenty-one subjects (75%) finished the race. Left ventricular ejection fraction was significantly depressed at the end of the trail (64 ± 4% versus 70 ± 3% before, P = 0.0001), but not at Km 21 and 50. At Km 50, 2D longitudinal strain was significantly reduced as compared to longitudinal strain observed at baseline (−19.4 ± 3% versus −22.1 ± 2.1% before, P = 0.0008). Significant changes in mitral velocities were observed after 21 km, earlier than the abnormalities observed for the systolic function (E/A ratio: 1.6 ± 0.7 before versus 1 ± 0.4 at Km 21, P = 0.0004).

Conclusion. — Our study suggests that ultra distance and trail running leads to abnormalities of systolic and diastolic function in amateur runners. Diastolic dysfunction arises earlier than systolic dysfunction. The assessment of longitudinal strain allows to detect early systolic dysfunction.

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Is cardiac remodeling physiological in veteran tennis players?

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Background. — Cardiac remodeling may occur in case of intensive training. However, few are known concerning the long-term cardiac effect of sport in veterans. The aim of this study was to analyze the cardiac changes due to tennis practice in veterans.

Methods. — The study population consisted in 353 subjects: 303 veteran tennis players (≥ 35 years) participating in the 2007, 2008 and 2009 veteran Roland-Garros tournaments and 50 healthy patients included in an age- and gender-matched control group. All subjects underwent a physical examination, a 12-lead electrocardiogram and a complete transthoracic echocardiography. Analysis was performed according to the decade of life, to the level of tennis training (intensive >10 hours/week versus moderate training [T+ versus T−]) and to the Henry’s abacus.