

Left ventricular filling profiles and angiotensin system activity in elite baseball players

王子哲;張念中;賴志洋

Lai ZY;Chang NC;Tsai MC;Lin CS;Chang SH and Wang

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摘要

Abstract

Left ventricular (LV) filling profiles in elite baseball players has not been reported in the literature. Also, angiotensin system activity in athletes has never been reported. We used echocardiography to compare 20 male elite baseball players (aged 21.9 ± 1.0 years) with those of age- and sex-matched healthy sedentary subjects. Compared with the normal group, the athlete group showed a significant increase in LV mass, LV diastolic and systolic dimension, and left atrial dimension ($P < 0.05$, < 0.001 , < 0.001 , and < 0.001 , respectively). No differences in relative wall thickness or fractional shortening were found between these two groups. Diastolic filling profiles, including peak early diastolic filling velocity (E), peak late diastolic filling velocity (A), E:A ratio, early time-velocity integral (Ei), atrial time-velocity integral (Ai), Ei:Ai ratio, early filling time, deceleration time of early filling, and isovolumic relaxation time, were similar in both groups. Angiotensin system activity, including plasma renin activity, plasma aldosterone, and 24-h urinary aldosterone excretion, showed no difference between these two groups. Conclusion: This study suggests that normal LV filling profile, which is mediated partly by normal angiotensin system activity, is not related to increase in LV dimension and mass in elite baseball players.