Repolarization perturbation and hypomagnesemia after extreme exercise.

Strenuous exercise induces significant increases in inflammatory and cardiac biomarkers and transient dysfunction of the left ventricle. It is still unclear whether the electrophysiological correlate of these alterations can also be observed in ECG recordings, which indicate increased vulnerability for arrhythmias. ECG parameters were measured and compared with inflammatory and electrolyte statuses in 198 healthy men (42 ± 9 yr) 1 wk before (baseline) and at 0, 24, and 72 h after participating in a marathon. HR-corrected QT interval (QTc) duration increased significantly immediately after the race (442.4 ± 23.0 ms) compared with baseline (415.3 ± 22.5 ms, P 0.05). Cardiac repolarization was significantly altered immediately after a marathon, coincident with hypomagnesemia and hypokalemia. Inflammatory and electrolyte statuses returned to baseline values within 72 h. The current data do not support that ECG alterations after marathon running represent an increased risk for arrhythmic events. However, further investigation is warranted to describe these relationships in more detail.