TWO BIOMARKERS FOR THE SCREENING OF CARDIAC RISK AMONG RUNNERS?

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Background:
Heart-type fatty acid-binding protein (H-FABP) is a low molecular weight protein involved in the intracellular uptake and buffering of long chain fatty in the myocardium. Troponin T is a component of the contractile apparatus of the striated musculature. Both are early markers for acute coronary syndrome.

Objective:
The aim of our study was to compare the results obtained with the H-FABP and the highly sensitive cardiac tropons (hsTnT) and to test their cardiospecificity in healthy runners.

Design: Prospective, cohort study.
Setting: Amateur marathon runner.

Methods:
Twenty three runners (marathon) (44.1 ± 8.37 years old) were enrolled. We drowned blood samples at three times: just before (T0), just after (T1), and three hours after the end of the race (T3).

Main outcome measurements: H-FABP and hs-TnT were performed according to the manufacturer's instructions. A linear regression was calculated to observe if there is any correlation between the two biomarkers. Values above the 95th percentile for H-FABP (2.5 ng/mL) and the 99th percentile for hsTnT (14 ng/L) were considered as positive.

Results:
At T0, none of the subjects were positive for hsTnT but 35% were positive for H-FABP; at T1, 83% for hsTnT and 100% for H-FABP; at T3, 83% for hsTnT and 96% for H-FABP (table 1).

At T0, the regression equation was H-FABP T0 = 3.9454 − 0.1001 x hsTnT T0; at T1: H-FABP T1 = 51.838 − 1.7026 x hsTnT T1; at T3: H-FABP T3 = 47.977 − 1.6193 x hsTnT T3 (figure 1). No correlation was observed between the two biomarkers at the different time.

Conclusions:
We observed a significant increase of H-FABP and hsTnT in runners. These markers are independent to each other. These values could biologically correspond to a heart ischemia. These biomarkers could be helpful for the screening of cardiac risk among runners.

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