

(31.9) ms and QTc 389.1 (23.9) ms for M; QT 401.8 (33.2) ms and QTc 405.8 (23.1) ms for F]. The slope of RR⁻¹-QT relation was higher in F than in M (p<0.05, Fig. 1). Thus, for a similar resting RR, QT duration was longer in F.

Conclusion: Limits of 470 ms in M and 480 ms in F for QTc duration seem more adapted in athletes. Further studies are needed concerning the individual risk evaluation for sports participation.

(1) Pelliccia et al, Eur Heart J (2005) 45 : 1312-1375 ; (2) Maron et al, JACC (2005) 26 : 1422-1445 ; (3) Basavarajiah et al, Eur Heart J (2007) 28: 2944-2949 ; (4) Goldenberg et al, JACC (2008) 51 : 2291-2300.

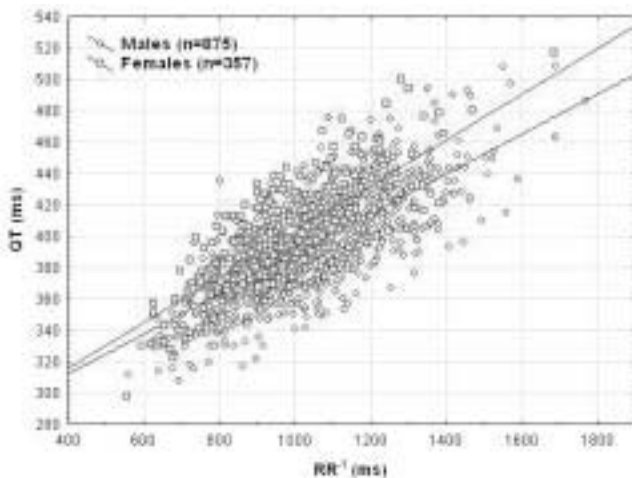


Fig. 1 : RR-1 and QT relations in athletes

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Evolutions of weight and body composition on coronary patients in rehabilitation

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Background: The French study OBEPI in 2006 showed that around 1 person out of 3 is overweight (BMI>25) or obese (BMI>30).

In Coronary Rehabilitation (CR) in Joigny (France), we observed that more than 2 persons out of 3 are overweight or obese (n=110).

The objectives of CR are the improvements of life expectancy, the quality of life. But in practice, how does the body composition evolve?

Methods: CR consists of 20 sessions from 9 am till 4 pm, 3 times a week. At first and after CR, patients performed a symptom limited cardiopulmonary test and a 6 minutes walking test: the bioelectrical impedance was done on a Tanita BC 418.

Every session includes physical training (ergocycle, walk, strength training: 45 min each), therapeutic education, in particular dietary (information and therapeutic cooking) minimum once a week.

Results: The patient's physical performances are improved (P<0,01): VO2 peak (+0,15L/min) and distance covered during 6MWT (+86m). The weight is stable but we observe that the fat mass (FM) decreases of 717g (P<0,01) for an increase of the lean body mass (LBM) of 812g (P<0,01).

Conclusion: Multidisciplinary CR allows an improvement of physical performances. The remodelling of body composition results in an increase of LBM and a decrease of FM.

It seems that an estimation of the body composition is useful in order to quantize exactly the weight evolution and these components during a CR.

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Echocardiographic evaluation of cardiac replanning in the high level footballer

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Introduction: L'objectif de ce travail est d'évaluer par échocardiographie et Doppler, les changements de la morphologie et de l'hémodynamique cardiovasculaire chez 24 joueurs de football de haut niveau, comparativement à un groupe contrôle similaire.

Méthodes et résultat : Un total de 24 joueurs d'élite et 24 témoins normaux appariés pour l'âge, le sexe et la surface corporelle ont été inclus dans l'étude. Tous les participants ont subi un examen clinique, un ECG au repos une échocardiographie Doppler et une mesure de VO2max. Les variables échocardiographiques ont été comparées entre les deux groupes en utilisant le test de student et d'autres outils statistique, grâce au logiciel SPSS 12 pour Windows. Comparativement au groupe contrôle : l'épaisseur pariétale (10,49 ± 1,04 VS 7,5 ± 2,04) (p < 0,05), le diamètre télédiastolique du VG (51,7 ± 3,70 VS 41,2 ± 3,65) (p < 0,01) et la surface de l'OG (20,16 ± 2,03 VS 16,16 ± 1,83) (p < 0,01) sont significativement plus importante chez les footballeurs. La fraction d'éjection VG et celle du VD sont similaires dans les deux groupes. Le diamètre diastolique grand axe du VD (8 ± 0,5 VS 6,5 ± 1,1) (p < 0,01) et l'onde S en DTI (0,17 ± 0,02 VS 0,14 ± 0,02) (p < 0,05) sont plus importants pour les joueurs de foot.

Discussion : Les changements hémodynamiques et morphologiques sont les résultats d'une adaptation cardiaque requise chez ces sportifs soumis à des efforts d'endurance et de résistance importants. Les joueurs explorés ont majoritairement un remodelage de type intermédiaire mais les plus offensifs ont un cœur de type endurance et les joueurs défensifs ont un aspect de type résistance.

Conclusion : L'étude du remodelage cardiaque chez le sportif de haut niveau permet une approche de la distinction entre remodelage physiologique et pathologique. Ce remodelage varie en fonction du poste du joueur et sa capacité à l'effort. Une corrélation entre son importance et capacité physique chez le footballeur est plausible.

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New cardiac biomarkers after marathon in woman

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In a prospective study we evaluated kinetic of hFABP, CAIII and GPBB during the 2008 Marathon du Médoc by 67 healthy volunteered. Blood were collected at baseline (T1), immediately after (T2) and 3 h after (T3). Biomarkers were assayed by Cardiac array on Evidence Investigator (EI) RANDOX, cTnI and myoglobine by Dimension RxL too. 10 (5%) TnIc values disagreed between RxL and EI, all at T2 and T3. cTnI (EI) was negative in all subjects before, increased transiently in 4 (6%) at T2 then normalized. Increased ratio of Myo to FABP from [4-46] to [5-1208] then [5-43] indicated that Myo was more likely to originate from muscle. hFABP normal at T1 but for one, increased for all but one at T2 [4->150] and T3 [5->150]. CAIII increased from [8-68 ng/mL] to [45->145] then [57->145] indicated skeletal muscle damage. GPBB baseline was in [2-7 ng/mL] but for one. 13 (19%) rates increased at T2 [8-27], which 7 returned to baseline after 3 h and 6 remained high. 6 (9%) increased only at T3 [8,5-141]. Combination of markers showed that by the 4 women who had elevated cTnI (T3), Myo, hFABP and CAIII increased in all cases and GPBB in two. GPBB, presented as released early from injured myocardial cells, increased however in 19 (28 %) women after marathon. Moderate elevation of GPBB would more likely reflect active glycolysis and heart fatigue than injury. These new markers don't offer adequate cardiospecificity to rule out myocardial damage in runners.