0012

Rehabilitation early after heart transplantation: modalities and feasibility

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Background: Early after heart transplantation, patients require close medical follow up and exercise training. The objective of the study was to assess the usefulness of an inpatients Cardiac Rehabilitation center (inCRC) in these two settings.

Methods: 100 consecutive patients (age: 47.2±13.2, men: 79%) referred to our inCRC less than 3 months after heart transplantation were included. Acute events (AE) occurring during the inCRC stay and exercise training modality and results were assessed.

Results: Patients were hospitalized in the inCRC 33.8±21.3 days after the transplantation, for a 25.9±11.2 days duration on average. During this period, AE occurred in 49% (n=49) of the patients: 24 graft rejection, 19 infections requiring IV antibiotherapy, and 6 other AE. Most of these events were managed by the inCRC but 22 patients were temporarily referred to the transplantation center because of too severe AE (infection: n=11, tamponade: n=1, acute rejection requiring plasmapheresis: n=3, other: n=7). Seventeen patients (17%) were colonized by a multiresistant bacterium. Finally, due to all these acute rejection requiring plasmapheresis: n=3, other: n=7). Seventeen patients (17%) were colonized by a multiresistant bacterium. Finally, due to all these events, 23 patients underwent only 5 exercise training sessions or less. The exercise capacity improvement after completion of a classical exercise training program (n=13±5 sessions) is given in the table below for the 77 other patients (77%).

Conclusion: Early after heart transplantation an inCRC can be useful to (i) safely treat subacute complications under the guidance of the referent transplantation center and (ii) perform an exercise training program.

Abstract 0012 – Table

<table>
<thead>
<tr>
<th>Post-op day</th>
<th>Post-op day</th>
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<tbody>
<tr>
<td></td>
<td>33±21 (before rehabilitation)</td>
<td>60±22 (after rehabilitation)</td>
</tr>
<tr>
<td>Peak VO2 (ml/kg/min)</td>
<td>12±3.2</td>
<td>17±4.0</td>
</tr>
<tr>
<td>Ventilatory Threshold (ml/kg/min)</td>
<td>9.9±2.5</td>
<td>12.2±3.7</td>
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<tr>
<td>Maximal Workload (Watts)</td>
<td>60±17</td>
<td>82±23</td>
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<tr>
<td>Resting Heart Rate (bpm)</td>
<td>91±14</td>
<td>89±13</td>
</tr>
<tr>
<td>Maximal Heart Rate (bpm)</td>
<td>107±16</td>
<td>115±18</td>
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</table>

0108

Large and small artery elasticity in peripheral arterial occlusive disease. Effect of a rehabilitation training program

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Objectives: In peripheral arterial occlusive disease (PAOD), arterial compliance of central and peripheral arteries has been reported to be reduced. The aim of this prospective study was to determine the effect of a 6-week rehabilitation training program on artery elasticity in 16 patients with PAOD (mean age 61±11 years, 14 men, 2 women).

Methods: Large (C1) and small artery (C2) elasticity indices were measured using a tonometer of the type HDI/Pulse wave CR-2000. Maximal walking distance (MWD) on the treadmill, ankle brachial index on the limiting leg (ABI), peak oxygen consumption (VO2) and artery elasticity indices were recorded before and after the 6-week program. Patients performed a supervised aerobic training intervention five days per week.

Results: After the 6-week program, exercise rehabilitation increased significantly: MWD (68±87 versus 247±323 m; p<0.001), ABI (0.89±0.25 versus 0.73±0.18; p<0.01), VO2 (14.8±4.28 versus 12.3±3.61 ml/kg/min; p<0.01), and C2 (3.89±1.58 versus 3.08±1.0 ml/mmHg; p<0.05). C1 increased but not significantly (19.20±8.87 versus 14.73±4.70 ml/mmHg; p=0.7).

Conclusion: Our study shows that a 6-week exercise-training program improves significantly small artery elasticity in patients with PAOD.

0114

Effects of holistic cardiac rehabilitation on anxiety and depression: gender difference

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The aim of this prospective study was to compare the effects of an ambulatory cardiac rehabilitation program (CRP) on anxiety and depression between women and men. 893 patients, 256 women and 637 men, with identical age (56±55 years respectively) were included. All patients performed a 6-week multidisciplinary holistic CRP including exercise training, psychological screening and support as well as education concerning lifestyle. Reasons of admission were: coronary artery bypass graft surgery (41%), angioplasty & stent (25%), angioper- toric & myocardial infarction (8%), valve replacement (13%), dilated cardiomyopathy (4%), other (9%). Level of anxiety (A) and depression (D) were measured by the psychologist using the Hospital Anxiety and Depression (HAD) scale, before and after the CRP.

At baseline, women had a significantly higher score for A (11.24 vs 9.02, p<0.001) with a higher prevalence of A [HAD≤11] (57% vs 34% – p<0.001) compared to men. Women had also a significant higher score for D (7.39 vs 5.91 – p<0.001) with a higher prevalence of D [HAD≥8] (44% vs 31% – p<0.001).

At the end of the program, the entire population studied achieved significant improvements characterised by a statistically significant fall in anxiety/depres- sion. However, mean fall for A was significantly higher in women (–36% vs –28%, p<0.05) as compared to men. Identical trends was found for D (–54% vs –41%, p<0.05). Consequently, prevalence of A (18% vs 14% – p=0.059) and D (9% vs 9%) were similar in women and men at the end of the rehabilitation.

Conclusions: In our study, at baseline, women had a higher level of anxiety and depression compared to men. A holistic rehabilitation program including psychological screening and support is able to reduce significantly
the level of anxiety and depression in both women and men. However, women achieved higher improvement. Consequently, at the end of the program, women and men had a similar prevalence for anxiety and depression.

0477

Compression of the right ventricle by pectus excavatum in a gymnast: a case report
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Introduction: The pectus excavatum is the most common chest deformation. It is usually congenital or develops during growth. In addition to aesthetic problems, it can cause cardiac compression, breathing difficulties and constant pain. This affection may limit the practice of sports especially when a sporting career is considered.

Clinical case presentation: We report the case of a gymnast girl in the national team who's 15 years old. She complains since several months dyspnea and faintness on exertion. The physical examination revealed a mild pectus excavatum. The resting electrocardiogram showed an incomplete right bundle branch block. A 24 hour holter monitoring showed one episode of a nocturnal non sustained ventricular tachycardia composed of 12 beats with a left bundle branch morphology. Transthoracic echocardiography was normal. A stress test was conducted revealing the occurrence of a single ventricular extrasystole and dizziness at the end of the test. Cardiac MRI was realized showing a significant compression of the right ventricle by the pectus excavatum with no signs of arrhythmogenic right ventricular dysplasia. The pulmonary function was normal. Despite the mild clinical form of this pectus excavatum the cardiac impact seems significant. Temporary sports inaptitude was indicated for further explorations and therapeutic decisions. Remodeling surgery is being discussed for her

Conclusion: Is surgery mandatory for this patient if she gives up sports? The treatment of this deformation may it allow this gymnast to continue her high level training? This case was rarely reported and underlines the importance of a working group in order to make a decision regarding this kind of pathology.

0508

Cardiovascular abnormalities detected in the preliminary medical assessment before the integration at the Higher Institutes of the Sport and Physical Education
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Introduction: To be integrated in the Sport and Physical Education Higher Institutes (SPEHI), the student must benefit from a standard medical assessment.

Objectives: Determine the frequency of various cardiovascular anomalies and atypical aspects observed in Tunisian students before integration in the SPEHI.

Patients and Methods: Our population was constituted of 1077 students (average age 19.5 years, sex ratio 1.3), consulted to obtain medical certificate authorizing integration at the SPEHI.

Results: The clinical examination revealed a functional systolic breath in 26 cases, a mitral regurgitation systolic breath in 4 cases and a pulmonary regurgitation systolic breath in one case. The Electrocardiogram was normal in 761 students. An incomplete Right Bundle-Branch Block in 56 students, a complete RBB in 6 cases, a first-degree Atrio Ventricular Block in 6 case, a sinusal bradycardia in 30 cases, a permanent sinusal tachycardia in 42 cases, a narrow PR interval in 34 cases and Left Ventricular Hypertrophy according to Sokolow index in 18 cases and a repolarisation abnormalities in 19 cases. A Wolff Parkinson White syndrome was detected in 3 students. A case of asymptomatic induced Brugada syndrome (by Flecaine Test). Other cardiovascular assessments were prescribed in 48 cases: 22 Stress test, 11 systematic recording, 3 heart pressure recording, 3 Echocardiography and electrophysiological exploration in one student. They were all normal except for one case of tiny mitral regurgitation. No anomaly imposing inability of the sporting practice was found, but a medical follow-up is essential, particularly in the case of Brugada and WPW syndrome. The previous practice of a sport seems to influence the resting heart rate (p = 0.004). The T amplitude (p = 0.005), QRS axis (p=0.005) and the Sokolow index (p = 0.01).

Conclusion: This study suggests the interest of a systematic medical evaluation in particular cardiovascular assessment before integration at the SPEHI.

0509

Effect of maximal exercise tolerance on response time in Tunisian sporting students
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Introduction: The response time has a significant role on the sports performance, particularly during speed tests. An initial maximum exercise could affect this response time and therefore the performance.

Objective: to study the influence of a maximum test on the response time at Tunisian sporting pupils.

Materials and Methods: 70 sports students participated in the study (16 years ±1.12, sex ratio = 1.5). They carried out a triangular Stress Test on ergometric bicycle according to the Wasserman protocol. We measured simple response time (SRT) and complicated (CTR) before and after the maximum test using the Superlab software (version 7.01). The sports specialities were: athletics 21 (30%), judo 20 (28.6%), karate 16(22.9%), game of bowls 7(10%) and gymnastics (8.5%).

Results: The simple response time (SRT) was on average 345.82±41.92 ms before the stress test and 349.35±48.44 after the test; with a non-significant difference (p=0.64). The error rate decreased after the exercise in a non-significant way (p=0.20). About the complicated reaction time (CRT), the values were respectively 465.29±59.41 and 456.13±52.76 before and after the test (p=0.33). The error rate also decreased after the exercise in a non-significant way (p=0.45). No influence of the BMI was found on measures of SRT and CRT as well before and after effort.

The comparison of the average measures of the response time between sporting specialites showed a statistically significant difference on the CRT before ST between the karatekas and the judokas (p=0.04) and on the CRT after ST between the gymnasts and the karate experts (p=0.04).

Conclusion: The stress test realized in this study does not have a significant effect on the simple or complex response time of our young sportmen. The sex as well as the sporting specialties influence only relatively the complex response time.