Methods.– The study was carried out on 20 male Sprague-Dawley rats subdivided in 2 groups (G1: Healthy control, G2: model of pulmonary fibrosis induced by Bleomycine), using whole-body plethysmography and video recordings.
Results.– At rest, in G2, a decrease of expiratory time (TE) and total respiratory time (TTOT) was observed when compared to G1. The mean inspiratory flow (VT/TI) didn't increase significately in G2 when compared to G1 at rest. However during drinking, TE and VT/TI increased significately in Fibrosis group. Swallowing frequency didn't significately change but the % of inspiratory swallowing (I-I) increased significately when compared to G1.
Discussion.– Fibrosis can probably increase swallong dysfunction and aspiration.

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CO42-006-e

Effects of neuromuscular electrical stimulation in addition to a rehabilitation program in patients with chronic obstructive pulmonary disease

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Aim of the study.– COPD is a major public health problem and a chronic systemic disease which decreases quality of life and effort capacity. Nevertheless rehabilitation programs decrease the number of exacerbations and hospitalizations. This explains why Physical Medicine and Rehabilitation plays a crucial role in COPD. Our aim was first to demonstrate that rehabilitation program increased functional parameters and quality of life and second to evaluate the place of neuromuscular electrical stimulation (NMES) of the quadriceps.
Material and methods.– Thirty two ambulatory patients (5F, age 58 ± 9 y) were included. Inclusion criteria were FEV1 ≤ 60% pred, FEV1/VC ≤ 70%, TLC ≥ 80% pred, dyspnea, 18 ≤ BMI < 35 kg/m^2, an optimized medical treatment, with or without O_2 therapy or non invasive ventilation. COPD must be stable for one month.
All the patients performed pulmonary function tests, 6 minutes walking test (6MWT), incremental exercise test (VO2, maximal work rate WR) and Saint George's quality of life questionnaire before and after eight weeks of rehabilitation program. At the onset of the program they were randomized to have quadricipital NMES at home (5 days a week, 30 min length, intensity adjusted individually in order to obtain maximum muscle contraction without pain) or not.
Results.– In the whole population, the 6MWT distance was increased (449 ± 92 vs 470 ± 101 m, $P = 0.001$), VO2 max (15.7 ± 3.1 vs 16.5 ± 3.2 ml/kg/min, $P = 0.002$) and maximal WR (66 ± 19 vs 73 ± 22 W, $P = 0.001$) increased. Saint George's questionnaire total score showed a non-significant improvement (42 ± 11 vs 39 ± 13%). With additional quadricipital NMES, there was no difference in the improvement of the 6MWT distance, exercise tolerance or quality of life.
Discussion.– Our study demonstrated that rehabilitation program had a positive impact on functional parameters, with slightly improvement in quality of life of COPD patients. Nevertheless quadricipital NMES did not add a benefit in these ambulatory patients.

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Influence of music with a fast tempo on the 6-minute walk test in copd patients

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Keywords: COPD; 6-Minute Walk Test; Music
Introduction and aim.– The 6-Minute Walk Test (6MWT) evaluates the exercise tolerance and the functional capacity in patients with chronic obstructive pulmonary disease (COPD). Encouraging the patients during the test influences the walking distance. Moreover the music improves dyspnea in some conditions [1–2]. The aim of this study was to evaluate the effect of music with a fast tempo [3] on the distance walked during the 6MWT in COPD patients.
Method.– Eleven COPD patients (FEV1 = 39.1 ± 7.6% of predicted values) performed randomly the same day a walking test in two different conditions: without music (WM) and with a fast music (FM). The 6MWD, the cardio-respiratory parameters and the dyspnea were measured.
Results.– No difference was observed on the walking distance depending on the conditions (WM:350 m – FM:366 m, $P = 0.101$). Cardio-respiratory parameters and dyspnea were not influenced by the music.
Discussion and conclusion.– In this preliminary study, music with a fast tempo did not modify the results of the 6MWT.
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Communications affichées

Version française

P120-f

Influence de la musique sur la dyspnée pendant une séance de revalidation pulmonaire

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Mots clés : Revalidation pulmonaire ; Dyspnée ; Fatigue ; Musique
Introduction et objectif.– La revalidation pulmonaire fait partie intégrante de la prise en charge des patients atteints de broncho-pneumopathies chroniques obstructives (BPCO). Le maintien de la participation des patients BPCO à un programme de revalidation est un challenge pour l'équipe soignante. La musique a montré des effets bénéfiques sur différents paramètres impliqués dans la réduction de la participation à l'exercice [1–2]. Le but de cette étude est d'évaluer l'effet d'une musique d'ambiance sur le niveau de perception de la fatigue chez des patients BPCO pendant une séance de revalidation pulmonaire.
Matériel et méthode.– De manière aléatoire, les patients BPCO et participant à un programme de revalidation pulmonaire ont été soumis à des séances classiques, réalisées avec et sans musique d'ambiance (tempo 120 b/m). L'échelle de Borg, la dyspnée et les paramètres cardio-respiratoires sont relevés et comparés au cours des deux séances.
Résultats.– Trente-et-un paires de séances ont été comparées. Les caractéristiques des patients (moyennes ± DS) étaient un âge de 70,5 ± 8,4 ans, un BMI de

22,7 ± 3,9 kg/m^2 et un VEMS de 38,6 ± 12,5 % de la valeur prédite. Nos résultats ont montré que le fait d'écouter une musique d'ambiance ne modifiait ni la perception de la fatigue, ni la dyspnée, ni les paramètres cardio-respiratoires.
Discussion et conclusion.– Cette étude préliminaire semble montrer que le fait d'écouter une musique d'ambiance lors des séances de revalidation pulmonaire n'influence pas la perception de l'effort.
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P121-f

Impact d'un corset type DTPA utilisé dans la camptocormie sur les paramètres respiratoires : à propos d'un cas

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Mots clés : Camptocormie ; Corset ; EFR
Introduction.– La camptocormie est un trouble postural acquis, fréquent, dont l'étiologie reste encore débattue. L'impact fonctionnel peut-être important : les patients décrivent souvent une limitation de l'effort, une dyspnée, un reflux gastro-oesophagien.
La prise en charge classiquement proposée comporte une kinésithérapie et un appareillage. Le choix du type de corset reste débattu. Les corsets habituellement proposés ont une tolérance respiratoire estimée bonne par les patients [1], mais aggravent fréquemment les paramètres respiratoires [2].
Nous rapportons le cas d'une patiente de 83 ans, appareillé avec un corset DTPA pour une camptocormie, se décrivant améliorée sur le plan respiratoire. Nous avons donc fait réalisé une exploration respiratoire fonctionnelle en laboratoire avec et sans corset.
Observation.– On note sur les EFR une amélioration significative des débits proximaux expiratoires (DEP et DEM75 %), sans modification des paramètres inspiratoires.
Discussion.– Chez le sujet sain, la posture, et notamment la présence d'une lordose lombaire, améliore la fonction respiratoire, principalement les volumes et débits expiratoires [3]. Chez notre patiente, seuls les débits proximaux sont significativement augmentés (+20 % par rapport aux valeurs attendues).
Cette majoration des débits ne peut être expliquée par une variation des volumes inspiratoires puisque ces derniers sont restés stables.
Le corset distracteur proposée par deSeze [4] améliore la lordose lombaire sans appuyer sur la sangle abdominale et soulève la cage thoracique. La normalisation de la statique doit donc permettre aux muscles expirateurs de retrouver une course complète et d'accélérer la colonne d'air à l'expiration forcée.
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Posters
English version

P120-e

Influence of music on the dyspnea during a session of pulmonary rehabilitation

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Keywords: Pulmonary rehabilitation; Dyspnea, Perceived exertion; Music
Introduction and aim.– The pulmonary rehabilitation (PR) is a key element of the treatment of the chronic obstructive pulmonary disease (COPD). The maintained participation in the proposed programs of PR is a challenge for the teams involved in this disease. Listening to the music was demonstrated to be positive on different parameters related to a decrease in exercise tolerance [1–2]. The aim of this study was to evaluate the effect of listening to an ambient music on the perceived exertion rate during sessions of pulmonary rehabilitation for COPD patients.
Materiel and method.– COPD patients participating routinely in our PR program performed randomly a classical session with or without ambient music (tempo 120 b/m). The Borg scale, the dyspnea and the cardio-respiratory parameters were compared between both sessions.
Results.– Thirty-one paired sessions were compared. The characteristics (mean ± SD) of the COPD patients were as followed: age (y): 70.5 ± 8.4 – BMI (kg/m^2): 22.7 ± 3.9 – FEV1 (% pred): 38.6 ± 12.5. Our results showed that listening to an ambient music does not modify the perceived exertion, the dyspnea or the cardio-respiratory parameters during a classical session of a PR program.
Discussion and conclusion.–This preliminary study seems to highlight that the perceived exertion rate is not influenced by an ambient music.
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P121-e

Impact of a DTPA orthesis on respiratory parameters in camptocormia

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Keywords: Camptocormia; Orthesis; Functional respiratory function
Introduction.– Camptocormia is an acquired postural disorder, frequent, whose etiology is still debated. Functional impact may be important: patients often describe an effort limitation, dyspnea, gastroesophageal reflux.
Support has traditionally offered physiotherapy and orthesis. Orthesis choise is still debated. Usual orthesis offered good clinically respiratory tolerance [1], but frequently worsen respiratory parameters [2].
We report the case of a camptocormia patient, 83 years old, treated with a DTPA orthesis. She described breathing improvement. We therefore conducted a laboratory functional respiratory exploration with and without orthesis.
Observation.– We note significant improvement of proximal expiratory flow (PEF DEM75%) without change in inspiratory parameters.
Discussion.– In healthy subjects, posture, including lumbar lordosis, improves lung function, mainly expiratory flows and volumes [3]. In our patient, only proximal flow were significantly increased (+20% compared to the expected values).