Keywords: Cardiac rehabilitation; Coronary patients

Introduction.– The benefits of cardiac rehabilitation have been demonstrated for several years by different studies showing the decrease in mortality from 25 to 35%, complications and improving the physical capabilities and quality of life. The aim of our study was to demonstrate the strategy to adopt when carrying out cardiac rehabilitation and cardiovascular functional benefits in patients with Phase II coronary artery disease.
Patients and methods.– This study was a retrospective analysis spread over 3 years, which focused on patients having undergone angioplasty or coronary surgery.
An initial medical examination was carried out detailing history, surgical and medical treatments received. The assessment was based mainly on the stress test, the 6-min walk test, on the assessment of risk factors and the quality of life by the SF36.
The program was spread over an average of 20 outpatient sessions with three sessions per week, involving segmental strengthening, central solicitation in power and endurance training and risk factors stabilization.
Results.– Our population included 34 patients, (30 were male), aged on average 60 years 50% had hypertension, diabetes or dyslipidemia and 60% were heavy smokers After rehabilitation programs, we observed an increase in workload, improved cardio-circulatory performances during exercise, a resumption of sport, recreation and professional activities.
Conclusion.– Cardiac rehabilitation can be proposed for all coronary patients with dilatation, surgery or medical treatment. It requires a comprehensive and multidisciplinary care program. It enables improving the quality of life, performances in effort and psychological profile, while contributing to a better social reintegration.

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P070–EN

Rehabilitation care of venous malformations of the upper limb: Two observations

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Venous malformations are slow-flow lesions. Although, they are usually present at birth, they may not be seen until years later in childhood, adolescence or event adulthood as they progress insidiously all lifelong. There is a slow and steady distension of the venous walls with a nidus and asymptomatic infiltration of the adjacent tissues.
These pathologies are rare and no standard denomination has been agreed on. Therapeutic care varies according to the depth, location and extent of the lesion usually consisting in compression garments, sclerotherapy or surgery.
The main complications are cosmetic upset, pain due to vein wall calcification, intravascular coagulopathy; progressive joint stiffness is also quite common.
We present here two cases with lesions located on the upper limbs, for each case a different rehabilitation care protocol was implemented.
Observations.– Our first patient was a young 18-year-old man. He presented the following active ranges of motion (ROM): elbow flexion at 35°, complete extension, supination at 45°, pronation at 50° and wrist extension at 40°. Limited by the pain, in passive extension we could only gain a few ROM degrees. After six months of posture rehabilitation training at home the improvement was noticeable with the following active ROM: extension at–27°, pronation at 60°, supination at 85° and wrist extension à 35°.
The second patient, a 25-year-old woman, presented a more extended venous malformation with a curved humerus and ulna, with little hope of completely reducing the malformations. We noted an elbow flexion at 45°, supination at 50°, complete pronation as well as wrist extension at 70° and flexion at 30°. The patient benefited from a static orthotic device maintaining the elbow in maximal extension at night, in addition to a personalized program with postures. In spite treatment.
Conclusion.– Joint stiffness secondary to venous malformations of the limbs must not be overlooked. Some home rehabilitation exercises must be proposed to our patients to maintain or even improve joint ranges of motion.

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P071–EN

The TexiSense « Smart Sock » - a device for a daily prevention of pressure ulcers in the diabetic foot

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Keywords: Diabetic foot; Pressure ulcers; Pressure sensor; Prevention; Biomechanical modeling

Goals.– The term « diabetic foot » refers to a set of foot pathologies essentially stemming from the neuropathy and arteriopathy of the lower limb associated with diabetes mellitus. Chronic ischemia weakens the healing potential and favors the development of wounds on a more vulnerable foot. Friction or repeated microtraumas can lead to an ulceration (which in turn can end up in an amputation) that will remain unnoticed because of the somato-sensory deficiency. The current prevention techniques largely relying on visual inspection of the foot and enhancement of the foot/insole interface are not fully satisfying as the prevalence of plantar ulcers remains very high.
Patients and methods.– A device for the prevention of plantar ulcers–called "Smart Sock" is described. It consists of:
– a sock made of a 100% textile pressure sensing fabric developed by the TexiSense company;
– a microcontroller running a biomechanical model of the soft tissues of the foot of the diabetic person;
– a vibrating watch (and eventually a smartphone) used to warn the bearer if a pressure pattern threatens the soft tissues integrity.
Results.– Internal overpressures within the soft tissues, especially nearby bony prominences are likely to develop into deep foot ulcerations. The biomechanical model gives an estimation of their magnitude based on the external pressures measured by the sock/sensor. This modeling relies on a faithful representation of the morphology of the diabetic subject. The device sends a vibro-tactile alert in case of occasional overpressure or excessive stress dose accumulated during daytime activities.
Discussion.– The continuous use of the device, compatible with daytime activities of the diabetic person, helps compensate for the lack of attention in the prevention of pressure ulcer formation. The TexiSense "Smart Sock" can be designed so that when worn, pressure sensors fall onto sensitive anatomical areas such as the dorsal side of the toes or the posterior side of the heel, which makes it also possible to monitor regions located outside the sole of the foot.

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P072–EN

Morbidity and heel pressure sores: Bilateral transtibial amputation in a patient with heel pressure ulcers

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