

A10-11

The relationship between Saxagliptin and renal ischemia/reperfusion: A morphological approach

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Saxagliptin is a DPP-4 inhibitors and this compound include a precaution regarding increased risk of heart failure, particularly in patients with pre-existing cardiovascular or renal disease. This study is designed to determine the possible protective effect of Saxagliptin on the kidney I/R injury. Adult male Sprague-Dawley rats were used in this study. In the sham group, right kidneys of the animals were dissected. In the I/R group, right kidney was dissected and ischemia of 45 min was performed, and then reperfusion was applied for 24 h. In the treatment groups, two different doses of saxagliptin (2 and 10 mg/kg) was orally by gavage at the beginning of the ischemia unlike the I/R group. After 24h, all rats were sacrificed and renal tissues were taken for histological examinations. The renal tissues were fixed in 10% formalin solution, and then embedded in paraffin. The paraffin blocks were cut 5 µm and stained with haematoxylin and eosin (H&E). Histological examination showed normal kidney structure in the control group. In I/R group, the kidney sections appeared with variable changes and marked injury. These changes were dilation of the tubular lumen, hemorrhage and inflamatuar cell infiltration, hidropic degeneration, prominent hemorrhage between the tubules and glomerules, epithelial atrophy and cell desquamation in the tubules, vacuolization of tubular epithelial cells, and casts in tubular lumen compared to the kidney samples from the control group. All treatment groups showed reduced renal injury when compared with I/R group. But IR+ 10 mg/kg group exhibited significantly improved histological appearance compared to the I/R + 2 mg/kg group. The observations indicate that saxagliptin may have some effects on renal functions by affecting renal morphology.

A10-12

Clinical and urodynamic neurogenic bladder secondary to myelomeningocele (MMC)

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Introduction : MMC is the most commune and viable of neural tube defect (NTD). Neurogenic bladder is among the most severe complication of MMC. Our aim is to study the clinical and urodynamic profile of bladder dysfunction in patients with MMC. Material and patients: We reviewed the records of 28 patients with neurogenic bladder secondary to MMC, followed between January 2014 and March 2017. Clinical and urodynamic data were studied.

Results:

The records of 28 patients (20 males and 8 females) were reviewed. The average age was 10,5 years ranging from 2 years and 25 years. Associated anomalies were found in all cases. Clinical manifestations of urinary disorders were found in 100% of cases. Urinary incontinence, enuresis showed the most frequent clinical manifestation (22 cases). Repeated episodes of urinary tract infection (UTI) were found in 44.38% patients. Only two patients presented renal failure. Hydronephrosis and vesico-urethral reflux were diagnosed in 8 of them. A diverticular bladder was detected in 6 cases. Reduced capacity was found in 18 of cases. eighteen cases showed hypocompliant bladder. Overactive detrusor and sphincterdyssynergia were noted respectively in 20 and in 16 of cases. Ten patients had important vesicle residues.

Conclusion:

Neurogenic bladder secondary to MCC have various clinical and urodynamic profile. Urodynamic studies must be performed earlier to evaluate the bladder functioning in order to prevent renal failure.

A13: Skeletal muscle physiology

A13-1

The effects of Zinc and Melatonin on Muscle Ischemia-Reperfusion Damage in Rat

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Ischemia-reperfusion is lead to damage in cell or tissue due to insufficient blood flow stream in tissue or organs. The aim of present study was to determine the effect of zinc, melatonin and zinc + melatonin supplementation for 3 weeks on muscle tissue MDA and GSH levels. This study was performed on 38 male Wistar-Albino rats.

Experiments groups were designed as sham-control, ischemia-reperfusion (I/R), zinc + I/R, melatonin + I/R and zinc + melatonin + I/R. Ischemia-reperfusion was induced by left femoral arter occlusion (1 hour) and reopening (1 hour). At the end of experiments tissue samples were analysed for MDA and GSH.

MDA levels in I/R groups increased significantly. Zinc and melatonin supplementation reduced MDA, however increased GSH levels.

The results of present study show that increased lipid peroxidation in muscle tissue by ischemia-reperfusion may be prevented by zinc and melatonin supplementation.

A13-2

Radon Registry Study

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Objective

Curative Radon (Rn) treatments for patients who suffer from inflammatory and degenerative diseases of the musculoskeletal system or chronic ailments of the skin and respiratory system have a long tradition in the Gastein Valley. Different clinical studies demonstrated that Rn therapy can cause a significant reduction of pain as well as a significant enhancement of functionality.

Methods

The purpose of the Radon Registry Study is to evaluate the modification of health related parameters before and after cure treatment, as well as three, six and nine months later. Those parameters will be collected by quality of life, pain and disease activity questionnaires. Simultaneously the received physical therapies and Radon treatments will be evaluated.

The main target is the identification of correlations between the cure treatments, applied Rn intensity and the improvement of patients health status. Patients that fulfil defined inclusion criteria and suffer from Osteoarthritis, Rheumatoid Arthritis, Ankylosing Spondylitis or Back Pain, can participate in the Radon Registry Study.

Results & Conclusion

The first study participants were included back in March 2016. Until now the analysed data of the questionnaires, reveal that the parameters for quality of life and pain show a significant improvement after cure in all indications. Similar data are illustrated in the disease-specific questionnaires. These preliminary data exhibit that the Rn cure treatment adduces a positive effect in the investigated parameters. In the long term the comparison of cure effectiveness against duration, type and intensity of treatments should bring an insight into the way Rn acts in patients.

A13-3

THE EFFECTS OF STRESS ON THE ACTION POTENTIAL OF SKELETON MUSCLES

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INTRODUCTION-PURPOSE: Its effects and harms on human body have been studied in real terms in recent years, and it has been concluded that stress has more negatively affected all the systems in human body biochemically, histologically and physiologically.

In the current study, the effects of exam stress on students' skeleton, chewing, swallowing, and temporal and biceps muscles.

MATERIAL-METHOD: 20 male and 20 female university student volunteers participated in the study. Recording BioPac mp100 device and surface electrode as electrode were used.

First, before the exams action potentials of the right and left masseter, right and left temporal, right and left digastric, right and left biceps muscles of the student volunteers were recorded through Biopac mp 100 device. Later, towards the end of fifteen days of exams, the action potentials of the same muscles were recorded again.

Through four different movements of resting, tightening, chewing and swallowing of right and left masseter chewing muscles, right and left temporal, and right and left digastric muscles helping swallowing, and finally right and left biceps muscles, and lifting a certain weight with biceps muscles, EMG recording was performed.

RESULTS: There was a significant correlation with the ANOVA test between the data of the male students before the exams and the data of the male students after the exams with the ANOVA tests ($p < 0.01$).

There was a significant correlation between female students ($p < 0.03$). The result is that the stressed muscles cause a decrease in the action potential millivolt, in other words, it produces less power.

KEYWORDS: Stress, Action potential, Chewing and swallowing muscles

A13-4

Functional evaluation in post-viral myositis

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The purpose of this study is to evaluate the clinical utility of electromyography (EMG) in the positive diagnosis of post-viral myositis. We investigated 32 patients in County Hospital Timisoara (2017). The myositis appearance is determined by viral infection. The clinical signs and the functional investigations were considered. All patients were evaluated for personal history and biochemical parameters. The clinical aspects of the disease were expressed by joints and muscles pain, reduced mobility, asthenia and fever.

The electromyography (bilateral vast medial and anterior tibial muscles) aspect revealed normal and low amplitude and duration of unit motor potentials in 82.7% of patients and normal recruitment pattern. Polyphasic potentials present for bilateral anterior tibial muscles in 29.4% of patients. All these aspects revealed a myogenic aspect of EMG but in 78.5% of patients with good prognosis.

The efficiency of treatment with specific anti-inflammatory agents is expressed by the decrease of symptomatology, optimization of the lab blood tests and the aspect of electromyography.

A13-5

Cartilage Marker Plots for Monitoring of Osteoarthritis Patients. A Pilot study

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Osteoarthritis (OA) is the most frequent cause of pain in the ageing population. Currently there are no disease modifying OA drugs available. Treatment is limited to pain reduction, improvement of joint mobility/functionality and delay of disease progression or joint replacement in severe cases. The knowledge of systemic biomarkers, which reflect the ongoing situation in the affected joint(s), would facilitate a fast assessment of improvement or aggravation of disease during treatment.

Starting from October 2016 patients (n=26) with OA of one or both knees were enrolled in a randomized, controlled pilot study in the Bad Gastein Health area. They attended a health regimen comprising conventional physical therapies (control group (n=13) and 8 additional visits to the radon gallery in the intervention group (n=13). Blood and urine samples were taken during the therapy and three and six months after the therapy to evaluate long term effects. A disease related questionnaire (WOMAC), the EQ-5D health questionnaire and a numeric rating scale for the assessment of pain were also given out. In May 2017, the study will be completed, providing us with blood, urine samples and questionnaire data from OA patients over five time points. Anabolic and catabolic cartilage biomarkers will be quantified in the samples by ELISA. These data will be used for the creation of cartilage marker plots to represent prevailing changes in the balance of cartilage metabolism during the cure regimen. For comparison, the same biomarkers are analyzed in urine, blood samples and primary chondrocytes of OA patients undergoing total knee arthroplasty. Radiographic analysis and macroscopic assessment will be correlated to levels of biomarkers to define their validity.