

THE EFFECT OF CPAP NASAL MASK ON MIDDLE EAR PRESSURE

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Summary

The purpose of this study was to measure the effect of CPAP nasal mask (Continuous Positive Airways Pressure) on middle ear pressure and describe the correlation between CPAP levels and middle ear pressures. Thirty-seven patients with moderate and severe OSAS using CPAP (study group) and 10 patients with no sleep apnea syndrome (control group) were included in the study. The gender distribution represented 20 males, 17 females. The average age was 48 years old. The material, from which the mask is made, is an important issue. CPAP (with Silicone Mask) therapy causes a supraphysiologic elevation in middle ear pressure that rises with increasing pressure levels. Key words: tympanometry, PAP, sleep medicine

EXPERIMENTAL FACES OF ISCHEMIC PRECONDITIONING IN SKELETAL MUSCLE

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Summary

As a model study, striated muscle is a network with a remarkable structural plasticity observed in its ability to adapt its metabolic state, contractility modulation by physiological or pathophysiological stages they must operate (8). Ischemic preconditioning protects by reducing skeletal muscle anaerobic ATP production during ischemia (2). Conservation of ATP levels and creatine phosphate in ischemic preconditioning is followed by prolonged ischemia and reperfusion (7). The oxidative post-ischemic injury minor or medium grade lower resistance striated muscle oxygenation and deoxygenation appears to be due to the use of energy reserves, released from macroergic phosphates, inorganic phosphate level changes not associated with decreased muscle contraction force (3). It was thus proved that post ischemic preconditioning improves muscle strength, contractility and resistance to experimental model.

Keywords: muscle, preconditioning, ischemia, reperfusion

TOXICITY OF MAGNETIC IRON OXIDE NANOPARTICLES (MNPS)

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Summary

Magnetic iron oxide nanoparticles (MNPs) are broadly utilized for different biomedical applications such as magnetic resonance imaging (MRI), cancer treatment, targeted delivery of drugs or genes, hyperthermia or biosensors. In recent decades, considerable efforts have been made to process, interpret and evaluate the potential adverse effects and safety problems associated with MNPs, a crucial problem for the continuous progress in translational research. Our review summarizes the MNPs toxicity revealed by in vitro studies on cultured cells and in vivo studies on experimental models.

Keywords: MNPs, cytotoxicity, oxidative stress, experimental models

ANGIOGENIC RECEPTOR TYROSINE KINASE INACTIVATION INDUCED APOPTOSIS IN GLIOBLASTOMA CELLS *IN VITRO*

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Summary

Most well known angiogenesis factors are the Vascular Endothelial Growth Factor (VEGF), the Platelet Derived Growth factor (PDGF) and the basic Fibroblast Growth Factor (bFGF). Several new studies demonstrated that VEGFR and PDGFR inactivation induces apoptosis by caspase activation. The aim of this study is to analyze the effect of two tyrosine kinase inhibitors AG1433 (an inhibitor of PDGFR activity) and SU1498 (an inhibitor of VEGFR activity) on glioblastoma cell viability. The cytotoxic effect of the treatments was then studied in terms of apoptosis induction. We found that both SU1498 and AG1433 inhibitors, were cytotoxic and induced apoptosis by activating caspase 3, 8 and 9 in glioblastoma cells.

Keywords: angiogenesis, brain tumors, apoptosis, cell death

EFFICIENCY OF A THERMOPLASTIC MATERIAL DEVICE ON THE TREATMENT OF SNORING AND MODERATE SLEEP APNEA

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Summary

Mandibular advancement devices (MAD) are being shown to be increasingly useful in the treatment of snoring/sleep apnea. A prospective 9 months study was started in June 2013, to apply 12 thermoplastic advancement devices, with the aim of assessing their usefulness. The device was applied to selected patients with an apnea-hypopnea index less than 25. An overall positive result, showing subjective as well as objective improvement, was obtained in 8 (66%) patients. Complications were common and slight. Mandibular thermoplastic advancement devices (MTAD) are an effective therapeutic option for the treatment of snoring and moderate sleep apnea.

Keywords: sleep apnea; snoring; thermoplastic device

CAPILLAROSCOPIC FINDINGS IN PATIENTS WITH EARLY RHEUMATOID ARTHRITIS

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Summary

Introduction. Rheumatoid arthritis (RA) is an inflammatory disease that affects about 1% of the population. Nail fold video-capillaroscopy (NVC) is useful for the study of microcirculation and allows identifying patterns of microvascular alterations, especially in scleroderma spectrum disorders. Available data on capillaroscopic findings in RA are sparse. NVC is not a part of assessment protocol in RA.

Objective. To study the microvascular abnormalities in patients with early rheumatoid arthritis (eRA).

Methods and Results. 31 patients with eRA (21 women, 10 men, mean age 40.3 ± 5.1 years, mean disease duration 7.3 ± 3.3 months). Control group included 30 healthy volunteers without Raynaud phenomenon (RP). NVC was performed in all subjects. The most frequent finding was elongated capillaries in 74.2% eRA patients and 6 controls (20%) ($p < 0.05$). The second most frequent finding in eRA group was prominent sub-papillary plexus in 12 patients ($p > 0.05$).

Discussion. The most frequent NVC finding in eRA group were elongated capillaries. Prominent sub-papillary plexus was not a frequent finding. NVC changes were more frequent in RA subjects with either moderate or high activity disease.

Key words: early, rheumatoid arthritis, capillaroscopy

COMPLICATIONS OF THE TRANSTHORACIC NEEDLE BIOPSY (TNB) UNDER DIFFERENT GUIDING METHODS - A STUDY OF 284 CASES

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Summary

Transthoracic needle biopsy (TNB) is a reliable procedure used to obtain a histopathological diagnosis for virtually all thoracic tumors. It can provide a rapid evidence of malignancy needed for starting a targeted oncological treatment or to indicate the potential surgical benefit.

Material and Methods. We investigated the complications encountered during our first 284 cases over a period of almost 5 years (01.01.2011-30.10.2015).

The main objective of the present study focuses on the complications of the procedure but we investigated also the demographic and clinical parameters, the guiding methods and the histological results.

Results. The median age of the patients was 62 years and the predominant sex was male. We could obtain a tissue biopsy in 99% with a histopathological confirmation of 84%. The most frequently used guiding method was the previous CT scan of the patient and the anatomical landmarks – a method which we called „CT oriented” (53%). The most frequent complications were minor pneumothorax followed by minor hemoptysis.

Conclusions. For the histopathological diagnosis of virtually all intrathoracic tumors TNB is an affordable, quick and safe procedure. The minor complications that can occur (hemoptysis and pneumothorax) are not life threatening given the fact that are expected complications which can be safely managed in a hospital environment without significant augmentation of the hospital length of stay.

Keywords: Complications, transthoracic needle biopsy, biopsy guns, histopathological diagnosis, thoracic tumors

LIVER DISEASE IN CHILDREN AND TEENAGERS DUE TO ACUTE POISONING – CLINICAL AND EPIDEMIOLOGICAL CONSIDERATIONS

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Summary

Aims. The purpose of this study is to assess epidemiological and clinical aspects of toxic liver disease in children admitted for acute intoxication.

Material and Method. I conducted a 5-year retrospective observational study on 34 patients admitted in the Toxicology and Intensive Care Unit of “Grigore Alexandrescu” Emergency Clinical Hospital for Children for acute poisoning associated with liver disease on admission or during in-patient treatment. To identify instances of toxic liver disease, we reviewed both on admission and during treatment the existence of suggestive clinical signs and the liver injury-defining parameters: the alanine aminotransferase, alkaline phosphatase and total bilirubin values.

Results. The prevalence of liver injury over the studied group was 0.8%. Toxic liver injury is mainly drug-induced (55.9%), paracetamol being the most incriminated for it. Etiology in toxic chemical-driven liver disease is mostly dominated by fungus (20.6%) and anti-cholinesterase insect repellents (17.6%).

Conclusions. Although toxic liver disease does not occur very frequently, the actual occurrence rate is hard to establish because its clinical manifestations vary and specific biochemical values are absent. The administration of an early and efficient treatment requires the knowledge of substances with hepatotoxicity potential and the fast acknowledgment of clinical and paraclinical signals of liver injury.

Key words: liver, toxic liver disease, acute poisoning

A PSYCHOLOGICAL EVALUATION TOOL DESIGNED FOR AERONAUTICAL PERSONNEL IN TERMS OF PROFESSIONAL ADAPTATION PARADIGM

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Summary

In this paper we present preliminary results from the application of a questionnaire designed in our laboratory, created to cover the main areas that contribute to an image of professional adaptation previous year. These areas are related both to the professional environment (both related to the work itself as well as aspects of organizational communication, work motivation, cohesion, etc.) and aspects of family life that can interfere with work.

Objective. Our aim is construction of a tool for the collection of information related to professional secondary adaptation applicable in the context of periodic examinations of aviation personnel (*self-report*). This information, annually collected during periodic evaluations, will provide an overview of the adaptation through the professional career. Such longitudinal profile of adaptation (both primary and secondary) is useful for both the psychological understanding of a certain person and to identify possible problematic issues of adaptation related to military aviation professions in general.

Method. The primary version of the questionnaire was applied in paper-and-pencil form.

Participants. The subjects was 88 people with aeronautical professions (83 men, 5 women), who attended the medical examination in September - October 2015, aged between 26 and 53 years, having different aeronautical functions on board.

Results and conclusions. The results cover both the psychometric characteristics of the instrument and the respondents' assessments on the evaluation sheet. From the first perspective, we considered especially investigation of the internal consistency coefficient, whose value provides useful information about how this instrument can be further developed. Both analyzes lead us toward continuing studies in commenced direction.

Keywords: professional adaptation, periodic evaluation, military aeronautical personnel, assessment tool