CROCUS SATIVUS, SERENOA REPENS AND PINUS MASSONIANA EXTRACTS MODULATE INFLAMMATORY RESPONSE IN ISOLATED RAT PROSTATE CHALLENGED WITH LPS

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Prostatitis is a common prostate disease that could be promoted by bacterial or non-bacterial infectious agents. In addition, inflammatory pathways involved in prostatitis have been increasingly studied, and herbal extracts endowed with anti-inflammatory effects are under investigation, individually or in combination, for their efficacy in alleviating the burden of inflammation, with possible improvements in symptoms. Serenoa repens (Serenoa), in combination with Crocus sativus (Crocus) and Pinus massoniana (Pinus), has previously shown to improve sexual function and limit urinary symptoms in patients suffering from concomitant erectile dysfunction and lower urinary tract symptoms. In this context, the aim of the present study is to evaluate the efficacy of Serenoa, Crocus and Pinus extracts, either alone or in combination, on immortalized prostate cells (PC3) and in an experimental model of bacterial prostatitis constituted by ex vivo prostate specimens challenged with lipopolysaccharide (LPS). We found that the tested extracts were able to reduce ROS production by PC3 cells and NFkB and PGE₂ activity in prostate specimens challenged with LPS. In addition, the pharmacological association of the extracts displayed synergistic effects indicating a rational use of the mixture of the tested extracts as a novel anti-oxidant and anti-inflammatory formulation in bacterial prostatitis. Finally, we performed analytical and in vitro evaluation to better characterize the phytochemical profile and the mechanism of action of selected secondary metabolites.
EDITORIAL

ACTIVATION AND INHIBITION OF ADAPTIVE IMMUNE RESPONSE MEDIATED BY MAST CELLS

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Adaptive immune response plays an important role against bacteria and parasites, a reaction that also involves mast cell (MC) activation which participates in innate and adaptive immunity. In allergic reactions there is a TH2 immune response with generation of allergen-specific IgE antibodies. In MCs, IgE cross-link FcRI high affinity receptor and activate tyrosine kinase proteins, leading to stimulation of NF-κB and AP-1 resulting in the release of a number of cytokines/chemokines and other compounds. Through their proteolytic pathways, MCs may process the antigen for presentation to CD4⁺ cells which release TH2 cytokines and growth factors, which play an important role in asthma, allergy, anaphylaxis and inflammation. Thus, MCs can contribute to adaptive immunity. MCs may also be activated though the TLR-dependent pathway which is controlled by several proteins including myeloid differentiation factor 88 (MyD88) which can be inhibited by interleukin (IL)-37. Here, we describe the participation of MCs in adaptive immunity and inflammation, an effect that may be inhibited by IL-37.
HEPATIC INSULIN-LIKE GROWTH FACTOR RECEPTOR IS UPREGULATED BY ACTIVATION OF THE GSK3B-FOXO3 PATHWAY AFTER PARTIAL HEPATECTOMY

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Liver regeneration after partial hepatectomy (PH) is a complex and well-elaborated biological process whereby synchronized cell proliferation is induced in response to the loss of liver mass. Insulin-like growth factor 1 (IGF1) signaling, which plays a crucial role in normal growth and development, is involved in the process of liver regeneration. To assess the changes in the levels of serum IGF1 and hepatic IGF1 receptor (IGF1R), we established a mouse model for PH. This also allowed us to further explore the mechanisms that participate in the regulation of liver regeneration. Serum IGF1 dramatically decreased immediately after PH, and was mildly elevated afterwards. This was also confirmed in patients who had undergone PH. Immunohistochemistry and Western blotting showed that hepatic IGF1R expression was elevated after surgery in mice. Hepatosomatic index showed a mild elevation 1 week after surgery and a marked elevation after 3 weeks. Western blotting showed increased levels of forkhead box O3 (FOXO3), but the phosphorylated forms of v-akt murine thymoma viral oncogene homolog 1 (AKT1), glycogen synthase kinase 3 beta (GSK3B) and FOXO3 were all downregulated. Our data show that the GSK3B-FOXO3 pathway is activated after PH, and this may be one of the mechanisms that lead to upregulation of hepatic IGF1R after PH. All these changes after surgery promote liver regeneration.
STUDY OF THREE TYPES OF DESENSITIZERS IN DENTIN BONDING STRENGTH

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One hundred and twenty human molars without decay (premolars and complete third molars) freshly extracted for orthodontic purposes were used in the study to explore the impact of application of three kinds of desensitizers on self-etching/all-etching bond strength of dentin. The roots were ground along the cementoenamel junction (CEJ), the residual crowns were divided into two parts along mesial and distal direction, and the enamel layer was removed. The dentin was ground into standard pieces of 3x3x3 mm and then polished using alumina waterproof abrasive paper. Two hundred and forty specimens were divided into two groups according to self-etching bond (OptiBond, iBond, XenoIV) and all-etching bond (OptiBond, iBond, Probond). Each of the two groups were subdivided into three groups with different brands, and then further subdivided into three experimental groups and a control group (10 samples in each final group). The surface of dentin coated with desensitizer was examined using scanning electron microscope. Results showed that only the shear strength of iBond + Ddes + Z100 resin group was lower compared to the control group (P < 0.05). The comparison of the resin shear strength in other experimental groups with the control groups demonstrated no statistically significant difference (P > 0.05). The shear strength of Optibond + Gluma, Optibond + Ddes, iBond + Ddes + Z100 resin group in all-etching bond group and the experimental groups in Probond group was lower than in the control group (P < 0.05). The resin shear strength in other groups did not differ from the controls (P > 0.05).
In this study we investigated the expression of connexins Cx36, Cx37, Cx40, Cx43, and Cx45 mRNAs during real-time cellular proliferation in vitro. The oral mucosa cells were isolated from 80 pubertal crossbred Landrace gilts. The cells were transferred into primary in vitro culture (IVC) and cultured for 30 days. The cells were collected to RNA isolation after 7, 15 and 30 days of IVC and were checked for their real-time proliferative status using real-time cell analysis (RTCA). We found an increased expression of Cx43 mRNA after 30 days of IVC as compared to control (P<0.05). The expression level of Cx36 was significantly decreased after 30 days. The expression of Cx37, Cx40 and Cx45 mRNAs was not changed. The expression of Cx43 was statistically increased when compared to Cx40, Cx37, Cx45 and Cx36 (P<0.001, for all time periods, respectively). We confirmed the expression of selected connexins in porcine buccal mucosa cells during their long-term primary IVC, which suggests the existence of functional gap junction connections (GJCs) communication network between these cells. We also confirmed the observations of other authors that Cx43 plays a substantial role in GJC structure. However, the increased expression of Cx43 in buccal mucosa cells, accompanied with their proliferation during real-time primary culture, is presented, to our knowledge, for the first time.
Rough titanium surfaces enhance cell response to activation of Wnt canonical signalling, a pathway required for osteoblast differentiation. The present study investigated the effects of GSK3β-inhibitors SB216763 and SB415286 on osteoblastic differentiation on titanium surfaces with different topography and wettability. Osteoblastic MC3T3 cells were plated on smooth (Pickled), sand-blasted/acid-etched (SLA) or hyper hydrophilic SLA (modSLA) titanium discs and transfected with a reporter vector system for Wnt canonical signalling. Cells were also seeded in the presence or in the absence of GSK3β-inhibitors SB216763 or SB415286 and their viability, morphology and the expression of Wnt target and osteoblast specific genes was assessed by Real Time PCR. Inhibitors altered cell morphology and mostly reduced cell viability at high concentration. SB415286 markedly increased the expression of ALP in MC3T3 cells on rough surfaces at the concentration of 100 nM before decreasing its expression at higher concentrations. OCN expression was unaffected. Increasing concentrations of SB216763 increased the expression of ALP in MC3T3 cells on rough surfaces but OCN expression was not changed at any concentration. SB216763 and SB415286 inhibitors should be further investigated as potential tools to improve cell differentiation on titanium surfaces for endosseous implants.
IN VITRO PROTECTIVE EFFECTS OF RESVERATROL AND STILBENE ALKANOIC DERIVATIVES ON INDUCED OXIDATIVE STRESS ON C2C12 AND MCF7 CELLS


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Resveratrol (3,4',5-trihydroxy-trans-stilbene) is a natural phytoalexin found in grapes and wine, which has been extensively studied for a wide range of biological effects. A large number of stilbene-containing derivatives have displayed antioxidant and antiproliferative activities on various cancer cell lines. In this study, a series of stilbene hybrids 1-9, previously reported as peroxisome proliferator-activated receptor (PPAR) agonists, were assessed at micromolar concentrations using MTT cell viability assay in C2C12 and MCF7 cell lines. The modulation of oxidative stress was also evaluated by measuring the protective effects on reactive oxygen species (ROS) production induced or not by oxidative stimulus. Among these, compounds 2 and 8 showed significant radical scavenging activity.
Fibroblast growth factor 21 (FGF21) is known as a major metabolic regulator of glucose and lipid homeostasis. Continuous intracerebroventricular (i.c.v.) administration of FGF21 was found to modulate feeding and energy expenditure in rats with diet-induced obesity, suggesting a central effect by the peptide. In this context, in the present work, we studied the effects of a single central FGF21 administration (0.5-5 µg) on feeding and energy expenditure by evaluating locomotor activity, interscapular brown adipose tissue (BAT) weight, gene expression of uncoupling protein-1 (UCP-1) in BAT and plasma norepinephrine (NE) levels in Sprague-Dawley fed rats. In addition, we evaluated the effects of FGF21 on orexigenic [agouti-related peptide (AgRP) and neuropeptide Y (NPY)] and anorexigenic [cocaine and amphetamine-regulated transcript (CART) and proopiomelanocortin (POMC)] peptides, in the hypothalamus, and dopamine (DA) and serotonin (5-hydroxytriptamine, 5-HT) levels in nucleus accumbens (NAc). We confirmed that central FGF21 administration induced a significant increase in food intake, possibly mediated by increased NPY and AgRP, and decreased POMC and CART gene expression. Moreover, FGF21 could modulate the motivational aspects of feeding, possibly through stimulated NAc DA levels. On the other hand, our findings of decreased locomotor activity, BAT weight, UCP-1 gene expression and plasma NE levels support a role for FGF21 in decreasing energy expenditure.
The molecular mechanisms underlying regulation of vascular endothelial growth factor (VEGF) in epithelial ovarian cancer (EOC) remain poorly defined. VEGF, a potent angiogenic factor, is up-regulated in a variety of cancers and contributes to angiogenesis in tumor tissues. The level of VEGF correlates with progression of malignancy. We previously reported that miR-92 is abnormally elevated in the plasma of EOC patients. Here, we tested the hypothesis that miR-92 inhibits von Hippel-Lindau gene product (VHL), a tumor suppressor gene, and in turn de-represses HIF-1α, a known key transcription factor for VEGF, to stimulate VEGF expression. Using a variety of biomedical methods including Western blot, RT-PCR, gene silencing, luciferase assay, and chromatin immunoprecipitation in both surgically-resected specimens and EOC cell culture, we established that EOC cells have elevated levels of HIF-1α and miR-92 expression, but the expression of VHL is reduced. We further demonstrated that miR-92 can target the VHL transcript to repress its expression. We also found that stabilized HIF-1α can form an active complex with transcriptional coactivator p300 and phosphorylated-STAT3 at the VEGF promoter to stimulate its expression. In addition, matrix metalloproteinases MMP-2 and MMP-9 are positively regulated by HIF-1α. These results suggest that miR-92 can potentially be considered as a novel therapeutical target in treatment of EOC.
To evaluate clinical effects of amoxicillin and clavulanate potassium in the treatment of children with suppurative tonsillitis, 146 children with suppurative tonsillitis were randomly divided into a ceftezole sodium group and an amoxicillin and clavulanate potassium group. The two groups were given anti-infection treatment using different drugs. Symptomatic treatment was carried out once symptoms such as fever appeared. Five to seven days were taken as one treatment course. Blood routine examination and the detection of C-reactive protein (CRP) were performed three days after treatment. Indexes such as the time to the relief of symptoms, the count of white blood cells, the proportion of neutrophil and CRP levels and the incidence of adverse reactions were compared between groups to evaluate the curative effect. The overall response rate of the amoxicillin and clavulanate potassium group was 94.52%, while that of the ceftezole sodium group was 78.08%; the difference was statistically significant (P<0.05). The improvement of white blood cells and CRP levels of the amoxicillin and clavulanate potassium group was more obvious than that of the ceftezole sodium group (P<0.05). The difference of the time to the improvement of symptoms between the two groups had statistical significance; the amoxicillin and clavulanate potassium group was superior to the ceftezole sodium group (P<0.05). No severe drug-related adverse reactions were observed. Amoxicillin and clavulanate potassium dispersible tablet is effective in treating children with suppurative tonsillitis as it can rapidly relieve the clinical symptoms without increasing incidence of adverse reactions.
GENDER DIFFERENCE IN RADIOTHERAPY-INDUCED CAROTID STENOSIS

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Radiotherapy (RT) is often the first choice of treatment for cancer of the larynx. Studies have shown that the incidence of carotid stenosis (CS) after radiotherapy of laryngeal cancer is increasing, and that gender difference in radiotherapy-induced side effects exist. Thus, we examined the gender difference in the incidence of CS and the impact of microinflammatory factors after radiotherapy. We reported this study on patients who received radiotherapy as part of the treatment for laryngeal cancer in the Jilin Province in China. One hundred sixty-four males and 152 females were treated with radiotherapy between 2006 and 2016. The carotid diameter was determined by measuring carotid intima-media thickness in the common, external and internal carotid artery. Microinflammatory conditions were assessed by measuring the level of high-sensitivity C-reactive protein (hs-CRP), interleukin-6 (IL-6) and tumor necrosis factor-alpha (TNF-\(\alpha\)). Other studied risk factors included age, treatment modalities, radiation dose and energy, the height of the radiation field, and the follow-up time. CS was detected in 161 (50.9\%) of the 316 patients. Carotid stenosis was mainly clinically unsuspected, two patients had anamnesis of unconsciousness. Importantly, fewer women (36.1\%) had CS than men (64.6\%) (\(p=0.004\)). Furthermore, male patients showed higher serum levels of hs-CRP, IL-6, and TNF-\(\alpha\). Taken together, our study suggested that women undergoing radiotherapy of laryngeal cancer are less likely to have CS than men. Therefore, routine assessment after irradiation of laryngeal cancer seems necessary for clinical detection of asymptomatic CS, particularly in male patients.
LETTER TO THE EDITOR

A SYSTEMATIC REVIEW ON DELAYED ABSORPTION OF SUBRETINAL FLUID AFTER SCLERAL BUCKLING FOR RHEGMATOGENOUS RETINAL DETACHMENT

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Rhegmatogenous retinal detachment is a vision-threatening disease and is treated by either scleral buckling or pars planar vitrectomy. Rapid absorption of the subretinal fluid (SRF) helps in the early recovery of the vision. The absorption of SRF after the scleral buckling procedure is rapid, provided that the retinal break or breaks are closed at or after surgery. However, in some patients with rhegmatogenous retinal detachment, complete absorption of the SRF occur several weeks or months after the surgery. In this review, we discuss the factors influencing the rate of SRF absorption and the role of delayed absorption on visual recovery. We also discuss the therapeutic options for delayed SRF absorption and the available additional therapeutic options. Knowledge of the factors that influence the rate of SRF absorption, would enable the surgeon to predict the outcomes more accurately.
LETTER TO THE EDITOR

AUTOPHAGY INHIBITION INCREASED THE ANTI-TUMOR EFFECT OF CISPLATIN ON DRUG-RESISTANT ESOPHAGEAL CANCER CELLS

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The sensitivity of tumor cells to treatment can be affected by autophagy. The drug resistance of esophageal cancer cells against cisplatin occurs during the long period of chemotherapy drug treatment. This study was designed to observe the effect autophagy has on the occurrence of esophageal cancer cell drug resistance against cisplatin and investigate its molecular mechanism in order to provide new details and strategies for the clinical treatment of esophageal cancer, especially cisplatin treatment. The detection methods used in this study were 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-tetrazolium bromide (MTT) colorimetric assay, clone survival technique, small interfering RNA (siRNA) transfection, and Western blot. Autophagy is a protection mechanism of drug-resistant cells processed by cisplatin, and maintains the cell clone survival ability. Autophagy activation requires the involvement of Atg5 and Atg7.
LETTER TO THE EDITOR

SIBELIUM IN COMBINATION WITH DIBAZOLE IN THE TREATMENT OF ANGIONEUROTIC HEADACHE

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Angioneurotic headache is a common nerve headache featured by intermittence, repetition, paroxysm and aggravation, which can severely affect the sufferer’s quality of life. Currently, there are multiple drugs which can be used for relieving this type of headache, and the effectiveness and safety of drugs have been a subject of interest in clinical practice. To observe the effects of sibelium in combination with dibazole and offer a basis for the clinical treatment, 136 patients with angioneurotic headache who were admitted to hospital between February and September 2015 were selected and randomly divided into a test group and a control group, 68 in each. Patients in the test group were treated with sibelium in combination with dibazole, while patients in the control group were given sibelium only. The effects, adverse reactions, complications and toxic and side effects of the treatment in the two groups were observed. Furthermore, the blood flow speed and hemodynamic changes before and after treatment were compared. The results demonstrated that the hemodynamic indexes and cerebral blood flow speed of the patients in the test group showed obvious changes after treatment, and the difference was statistically significant (P<0.05); the improvement of the above indexes of the test group was superior to that of the control group, and the difference had statistical significance (P<0.05); the overall effective rate of the test group was higher than that of the control group (94.12% vs 76.47%) (P<0.05); the medication safety of the test group was higher than that of the control group (all P<0.05). It can be concluded that sibelium in combination with dibazole has a remarkable effect in treating angioneurotic headache as it can significantly improve hemodynamic indexes and cerebral blood flow speed. Moreover, the therapy seldom induces toxic and side effects, adverse reactions or complications.
EVOLVING SAFETY PRACTICES IN THE SETTING OF MODERN COMPLEX OPERATING ROOM: ROLE OF NURSES

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Operating room (OR) nursing previously referred to patient care provided during the intra-operative phase and the service provided within the OR itself. With the expansion of responsibilities of nurses, OR nursing now includes pre-operative and post-operative periods, therefore peri-operative nursing is accepted as a nursing process in OR in the contemporary medical literature. Peri-operative nurses provide care to the surgical patients during the entire process of surgery. They have several roles including those of manager or a director, clinical practitioner (scrub nurse, circulating nurse and nurse anesthetist), educator as well as researcher. Although, utmost priority is placed on insuring patient safety and well-being, they are also expected to participate in professional organization, continuing medical education programs and participating in research activities. A Surgical Patient Safety Checklist formulated by the World Health Organization serves as a major guideline to all activities in OR, and peri-operative nurses are key personnel in its implementation. Communication among the various players of a procedure in OR is key to successful patient outcome, and peri-operative nurses have a central role in making it happen. Setting up of OR in military conflict zones or places that suffering a widespread natural disaster poses a unique challenge to nursing. This review discusses all aspects of peri-operative nursing and suggests points of improvement in patient care.
PROLIFERATIVE, ANTI-APOPTOTIC AND IMMUNE-ENHANCING EFFECTS OF L-ARGININE IN CULTURE OF SKIN FIBROBLASTS

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Semi-essential amino acid L-arginine may be of fundamental importance in various intracellular and intercellular pathways related to skin repair and wound healing. Our current study was aimed to explore the effect of L-arginine on skin fibroblast (L929) signaling pathways involved in cell proliferation (Akt-pAkt kinase, Erk/pErk1/2 kinase, JNK/pJNK kinase and pStat-1), apoptosis (Bcl2 and Bax) and immune defense (NF-κB and CD26). Significant upregulation of Erk (p<0.011), pErk (p<0.017) and JNK (p<0.002) was documented, while the rise was not significant for pJNK kinase. The Akt/pAkt signaling pathway did not change significantly for the above-mentioned time and dose, while pStat-1 was significantly down regulated (p<0.011). The exposure of skin fibroblasts to L-arginine increased anti-apoptotic Bcl2/Bax stoichiometry ratio (p<0.05), obtained by calculation of their individual quantities. L-arginine was able to elicit NF-κB signaling through the increase of p65 active subunit level (p<0.004), while CD26 surface antigen level was not significantly changed. In conclusion, the exposure of skin fibroblasts to L-arginine may help in maintaining and stimulating skin fibroblast proliferative, anti-apoptotic and immune defense function. Therefore, the proposed L-arginine dose may be used for tissue regeneration application, which would be of importance in regenerative medicine, skin rejuvenation approaches and wound healing.
LETTER TO THE EDITOR

SMALL INCISION RELEASING OF TRANSVERSE CARPAL LIGAMENT IN DIAGNOSIS AND TREATMENT OF MILD CARPAL TUNNEL SYNDROME

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Carpal tunnel syndrome (CTS) is a medical condition due to compression of the median nerve as it travels through the wrist at the carpal tunnel. Few studies have been carried out to examine the effectiveness of mini-open technique for carpal tunnel release using minor wrist skin crease incision in patients with mild CTS. Therefore, the present study was designed to improve the neurophysiological parameters for the diagnosis of mild CTS, and to examine the effectiveness of small incision surgery for the clinical treatment of mild CTS. To this end, we applied the electrophysiological diagnosis of difference between median and ulnar palmar latencies (PMPU) and the difference of median and ulnar latencies from D4 stimulation (D4MD4U) in 80 patients with mild CTS, whom were diagnosed by hand surgeon at the First Hospital of Jilin University. Those patients showed normal in median nerve electrophysiological examination, and received minor wrist skin crease incision surgery. All patients were followed up and received electromyography (EMG) examination. We showed that D4MD4U and PMPU methods are sensitive diagnosis methods for mild CTS, and mini-open wrist crease incision is beneficial for the treatment of mild CTS in clinical settings.
LETTER TO THE EDITOR

POTENTIAL RISK OF DEVELOPING HERPES SIMPLEX ENCEPHALITIS IN PATIENTS TREATED WITH SILDENAFIL FOLLOWING PRIMARY EXPOSURE TO GENITAL HERPES

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Herpes simplex encephalitis (HSE) is associated with significant mortality and morbidity. As a consequence of HSE, up to 75% of infected individuals die or experience irreversible neurological damage. While the pathogenesis of the disease is unknown, it is traditionally hypothesized that the viral infection occurs by neuronal transmission directly from peripheral sites. Non-neuronal modes of infection have generally been overlooked as the brain is protected by the blood-brain-barrier (BBB). The BBB poses an effective barrier to pathogens as well as to drugs such as chemotherapies. In the pursuit to deliver chemotherapeutic agents to the brain, several studies demonstrated that phosphodiesterase type 5 (PDE5) inhibitors, such as sildenafil, may increase the permeability of the BBB enabling successful delivery of chemotherapeutic agents to the brain. In this communication, we report a case of HSE infection in a 62-year-old man, which we suspect was facilitated by the use of sildenafil during a primary genital herpes simple virus (HSV) infection. Due to large number of patients treated with PDE5 inhibitors for erectile dysfunction and the high incidence of genital HSV infection in the general population, a larger study should examine the potential risk of developing HSE in patients treated with PDE5 inhibitors.
To the Editor,

Epilepsy is the second most common neurological disorder after stroke, affecting at least 50 million people worldwide, and its global prevalence rate is 1–2% (1). There are numerous antiepileptic drugs globally; however, one-third of subjects who develop epilepsy continue to experience uncontrolled seizures (2). Discovery of

**LETTER TO THE EDITOR**

**PROTECTIVE EFFECTS OF SMYRNium CORDIFOLIUM BOISS ESSENTIAL OIL ON PENTYLENETETRAZOL-INDUCED SEIZURES IN MICE: INVOLVEMENT OF BENZODIAZEPINE AND OPIOID ANTAGONISTS**

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*Smyrnium cordifolium* as a wild plant is used in traditional medicine in Iran for the treatment of anxiety and insomnia. The anticonvulsant effect of this plant has not been studied to date, therefore this study aimed to evaluate the anticonvulsant effects of its essential oil and curzerene on seizure. Essential oil of the *Smyrnium cordifolium* plant was prepared by the hydro-distillation method. Gas chromatography and gas chromatography-mass spectroscopy analysis of the essential oil revealed its main components. Anticonvulsant effects of *Smyrnium cordifolium* essential oil (SCEO) and curzerene were examined on mice using the pentylentetrazole model (PTZ). Flumazenil (2 mg/kg, i.p) and naloxone (5 mg/kg, i.p) were injected into the relevant groups of mice to realize the anticonvulsant mechanism of SCEO and curzerene, respectively. The main identified components of the plant were curzerene (65.26%), δ-Cadinene (14.39%) and γ-elemene (5.15%), which comprised approximately 85.28% of SCEO. The ED$_{50}$ values of SCEO and curzerene in the PTZ model were 223±15 and 0.25±0.09 mg/kg, respectively. Curzerene at the dosage of 0.4 mg/kg prolonged the onset time of seizure and decreased the duration of seizure among treated group compared to the saline group. At the dosage of 0.4 mg/kg, seizure and mortality protection rates for the treated group were 100%. Flumazenil and naloxone could suppress the anticonvulsant effects of SCEO and curzerene. It seems that SCEO and curzerene are useful for the treatment of absence seizure and this effect may be related to their effects on GABAergic and opioid systems.

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DISCLOSURE: ALL AUTHORS REPORT NO CONFLICTS OF INTEREST RELEVANT TO THIS ARTICLE.
In recent years, gynecologic cancer has become the third leading cause of death for women worldwide. Serum tumor markers and inflammatory factors have been shown to be useful in the diagnosis of gynecological tumors. Therefore, the clinical value of the combined detection of tumor markers and serum inflammatory factors in the diagnosis of gynecologic oncology was studied. One hundred patients with gynecological tumors admitted to our hospital were selected as the tumor group, and 50 healthy volunteers were selected as the control group. According to clinical diagnosis, the tumor group was divided into a malignant tumor group and a benign tumor group. The levels of CA199, CA125, and CEA in each serum were measured by the Elecsys2010 automatic electrochemiluminescence immunoassay system. The levels of serum TNF-α and IL-17 were determined by enzyme-linked immunosorbent assay (ELISA). Our results showed that, when compared with the control group, the levels of CA199, CA125, CEA, TNF-α, and IL-17 in serum of the benign tumor group were significantly increased ($P<0.001$), and were further increased in the malignant tumor group. Moreover, the positive detection rates of combined detection of CA199, CA125, CEA, TNF-α, and IL-17 for malignant and benign tumors were significantly higher than that of single detection ($P<0.05$), and the positive detection rate of combined detection of malignant tumors was significantly higher than that of benign tumors ($P<0.05$). These results indicate that the combined detection of inflammatory factors and tumor markers has a high clinical value in the diagnosis and treatment of gynecological tumors and is worth adopting.
TARGETED ULTRASOUND MOLECULAR IMAGING IN MOUSE ATHEROSCLEROTIC PLAQUE MODEL

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This study aims to assess the early diagnosis of mouse atherosclerotic plaque through targeted ultrasound molecular imaging. Forty Apolipoprotein E-deficient (ApoE⁻/⁻) mice and 40 C57BL/6 wild type mice were randomly divided into 4 groups, 20 mice per group. Mice included in the study group were fed with high cholesterol diet for 20 weeks, after which the targeted ultrasound microbubbles were prepared. The mice with atherosclerotic plaque were studied with targeted ultrasound molecular imaging in comparison with red oil O staining. The results of targeted ultrasound molecular imaging of atherosclerotic plaque indicate that the GP Ib and GP IIb/IIIa are viable biomarkers for early diagnosis of vulnerable atherosclerotic plaque. The targeted ultrasound molecular imaging is worth studying in order to identify the atherosclerotic progress as a noninvasive effective identification method which could be used widely.
The present study was conducted to evaluate the antioxidant activity of ethanol, n-hexane, dichloromethane, ethyl acetate and water extracts of four different *Pleurotus* spps. *P. ostreatus, P. sajor-caju, P. sapidus* and *P. columbinus*. The extraction was performed by classical organic solvent extraction (COSE). The extracts of *Pleurotus* spps. contained appreciable levels of total phenolic contents (TPC) (0.95-19.49 GAE, mg/g) and total flavonoid contents (0.85-3.73 CE, mg/g). All *Pleurotus* spps. also contained considerable DPPH radical scavenging activity, showing IC$_{50}$ (19.15-54.50\%) and reducing power (0.50-2.94 nm), respectively. The ascorbic acid content was in the range of (2.90-5.97 mg/g) for all *Pleurotus* spps. All studied *Pleurotus* spps. showed potential antioxidant activity. The results of four different *Pleurotus* spps. extracts showed that they can be used as a good food ingredient, and as a medicinal mushroom for digestive ailments, as well as in the pharmaceutical industry and in cosmetics.
LETTER TO THE EDITOR

AORTIC DISSECTION WITH ACUTE NON-ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION AS THE FIRST MANIFESTATION

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Acute chest pain caused by aortic dissection or acute myocardial infarction (AMI) is one of the most serious medical emergencies and requires very quick differential diagnosis to seize the best time for treatment. Aortic dissection and acute myocardial infarction are manifested with similar symptoms, making it difficult to differentially diagnose these two conditions. The present case was initially misdiagnosed as an acute non-ST-segment elevation myocardial infarction (NSTEMI) with left aortic disease, and then diagnosed by coronary angiography examination as type A aortic dissection (AAD). This case points to the need to collect and analyze as much patient clinical data as possible, including medical history and the results of auxiliary examination which would help to avoid misdiagnosis or treatment delay and reduce mortality among patients with type AAD when they manifest symptoms of chest pain and an ECG pattern of NSTEMI.
The aim of this study was to evaluate the influence of abnormal glucose metabolism on cognitive function of patients with acute small-arterial occlusion (SAO). The present study included 1,211 patients, with small-artery occlusion according to the Trial of Org 10172 in acute stroke treatment (TOAST) classification, admitted between March 2014 and December 2016 to The Second Hospital of Jiaxing. According to cognitive function, the patients were divided into a group of normal cognitive function, a mild cognitive impairment group (MCI group) and a dementia group. The patients were also divided into normal a blood sugar group, an impaired glucose regulation group (IGR group) and a diabetes mellitus (DM) group based on glucose metabolism. Cognitive functions of patients in the different glucose metabolism groups were compared based on Mini-mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA). General data, medical history, neuropsychological assessment and haematological index of the patients in each group were analyzed. Logistic regression analysis was used to study independent risk factors influencing cognitive impairment. When comparing the group of normal cognitive function with the MCI group, there were no statistical significant differences between the MMSEs scores of patients among the three groups, but the difference in MoCAs scores had statistical significance. Hypertension history, hyperhomocysteinemia (Hhcy) and sedentariness were independent risk factors for SAO patients with MCI. When comparing the group of normal cognitive function with the dementia group, there were statistically significant differences (P<0.05) between the MMSE and MoCA scores of patients among the three groups. Abnormal glucose metabolism, old age, female, high blood pressure, Hhcy, family stroke history and sedentariness were independent risk factors for SAO patients with dementia. In conclusion, abnormal glucose metabolism impairing cognitive function is not an independent risk factor for SAO patients with MCI, but is an independent risk factor for SAO patients with dementia.
ELECTROMAGNETIC FIELDS WITH FREQUENCIES OF 5, 60 AND 120 HZ AFFECT THE CELL CYCLE AND VIABILITY OF HUMAN FIBROBLAST BJ IN VITRO

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The impact of electromagnetic field (EMF) on humans has been described in numerous studies, but many questions are still unanswered. The aim of the experiment described in this study was to evaluate the effect of EMF on the viability of human fibroblast BJ in vitro and the percentage of cells in different phases of the cell cycle (G1/G0, S, G2/M) after 2 hours of exposure to sinusoidal continuous and pulsed EMFs with frequency of 5 Hz, 60 Hz and 120 Hz at a magnetic induction of 2.5 mT. The viability of BJ cells exposed to an EMF was estimated immediately after completion of exposure and after 24 hours. Metabolic activity of cells was assessed by MTT assay and compared to a control culture not exposed to EMFs. Cell cycle analysis was performed by BrdU incorporation. The analysis of the viability demonstrated significant differences in field efficiency, depending on its nature. Exposure of cells to pulse EMFs resulted in a decrease in their viability for each of the analyzed frequencies. Reduced viability was maintained for a further 24 hours after the end of exposure of cells to pulsed EMF. In the case of continuous field, reduced BJ cell viability was observed only at the highest applied frequency - 120Hz, and this effect maintained for the next 24 hours. Although there was no significant effect on cell viability (metabolic activity) of cells immediately after exposure to continuous EMF with a frequency of 5Hz, a significant increase was observed after 24 hours of incubation.
LETTER TO THE EDITOR

SERUM LEVEL OF CATHELICIDIN LL-37 IN PATIENTS WITH ACTIVE TUBERCULOSIS AND OTHER INFECTIOUS DISEASES

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A growing body of evidence indicates the role of cathelicidin LL-37, a member of the antimicrobial peptide family, in host innate defense mechanisms. The important role of this peptide in infectious diseases is also suggested, however, to date, data relating to LL-37 expression in the course of bacterial infections are far from complete. Therefore, the aim of the present study was to determine LL-37 serum levels in adult patients with pulmonary tuberculosis (TB). For comparison, circulating LL-37 levels in patients with pneumonia induced by Gram-positive or Gram-negative bacteria species and in healthy subjects were evaluated. Fifty patients with pulmonary TB, 31 patients with pneumonia caused by gram-positive bacteria, 68 individuals with pneumonia caused by Gram-negative bacteria, and 61 randomly selected healthy subjects were enrolled in the study. Serum LL-37 concentration was measured using an enzyme-linked immunosorbent assay (ELISA). We established that the mean level of LL-37 was statistically significantly higher in TB patients than that in patients with Gram-positive bacteria-induced pneumonia ($p < 0.001$), in patients with Gram-negative bacteria-induced pneumonia ($p < 0.001$), and in healthy controls ($p < 0.001$). In patients with TB, no statistically significant correlations between serum LL-37 and CRP concentrations ($r = -0.2042; p = 0.189$) and between serum LL-37 concentration and WBC count ($r = -0.1277; p = 0.414$) were observed. Our observations clearly documented that cathelicidin LL-37 plays a role in defense mechanisms against infectious agents, and is particularly important when the infection is caused by an intracellular pathogen.
EFFECTS OF LIPOPEPTIDE CARBOXYMETHYL CHITOSAN NANOPARTICLES ON STAPHYLOCOCCUS AUREUS BIOFILM

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This study aims to evaluate the effect of lipopeptide carboxymethyl chitosan nanoparticles on Staphylococcus aureus biofilm as part of the development of a new anti-biofilm material. The study had three stages. Firstly, we assessed the Staphylococcus aureus capability to form biofilm and enumerated the number of attached bacteria and free bacteria; secondly, we determined the inhibitory effect of different concentrations of Bacillus natto antimicrobial lipopeptide-carboxymethyl chitosan (BNAP-CMCS) nanoparticles added at different times on biofilm formation capability and the numbers of free bacteria and attached bacteria. Lastly, we tested the scavenging effect of BNAP-CMCS nanoparticles on biofilm formation and number of attached bacteria. The results showed that the amount of attached bacteria quickly increased over time and reached the maximum after 24 h of culture. The BNAP-CMCS nanoparticles had the greatest effect on biofilm inhibition at the concentration of 1 MIC, after 8 h of culture, and the effect was dose-dependent. The BNAP-CMCS nanoparticles had decreased also the numbers of free and attached bacteria in a dose-dependent fashion, after 8 hours of culture. The scavenging effect of BNAP-CMCS nanoparticles on free and attached bacteria was maximum at 6 MIC. In conclusion, lipopeptide carboxymethyl chitosan nanoparticles had a good inhibition and scavenging effect on the formation of Staphylococcus aureus biofilm and the growth of surface-attached bacteria.
SLEEP DISORDERS OF ACUTE THALAMIC STROKE AND ITS INFLUENCE ON PLASMA IL-17

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The aim of this study was to investigate the relationship between sleep disorders in acute thalamic stroke patients and plasma IL-17 levels and the mechanism through which inflammatory reactions develop in stroke. The study included two groups of patients: an experimental group consisting of 30 patients with thalamic stroke who received treatment at the Affiliated Hong Qi Hospital of Mu Dan Jiang Medical University during October 2015 to October 2016 and a control group consisting of 15 healthy volunteers. All the subjects included in the study were biochemically monitored for blood glucose, blood fats and IL-17 plasma levels. The sleep quality of all the subjects included in the study was evaluated [Epwort, Pittsburgh Sleep Quality Index (PSQI)] with 8-hour Polysonmography (PSG) monitoring. The experimental group was divided into 3 subgroups according to the part of the brain affected by stroke: anterior thalamic nucleus group, lateral thalamic nucleus group and medial thalamic nucleus group.

The differences were analyzed between the experimental group and the control group in sleep quality scores, sleep structural changes, and plasma IL-17 levels. The differences in sleep structural scores were also analyzed according to different parts of the brain affected by stroke. The experimental group had a higher PSQI score compared with the control group, but this difference had no statistical significance (p>0.05). Compared with the control group, the N1 phase of the experimental group was longer while the N2 and N3 phases were shorter (p<0.05). There were no differences in sleep structure between the three regions of the brain affected by stroke (anterior thalamic nucleus group, lateral thalamic nucleus group and medial thalamic nucleus group) (p > 0.05). The plasma levels of IL-17 in the experimental group was higher compared to the control group (p<0.05). In the experimental group, the patients with hypersomnia had higher IL-17 levels than patients without hypersomnia (p<0.01). We can conclude that PSG can be used as an electrophysiology index for early detection of sleep disorders in thalamic stroke patients. Sleep disorders in patients with thalamic stroke persist a long time after the incident, therefore monitoring their sleep structure may become an important index to predict the prognosis of the disease. The increased level of IL-17 level in the experimental group shows its implication in appearance of sleep disorders of acute thalamic stroke through inflammatory mechanism.

Keywords: acute thalamic stroke, plasma IL-17, PSG, sleep disorders
LETTER TO THE EDITOR

EXPRESSION AND CLINICAL SIGNIFICANCE OF RHUBARB ON SERUM AMYLASE AND TNF-ALPHA OF RAT MODEL OF ACUTE PANCREATITIS

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The aim of this study was to evaluate the therapeutic effect of rhubarb extract on acute pancreatitis. Ninety-six healthy Sprague Dawley rats, weighing 301±5.12 g were randomly divided into 4 groups: sham surgery (group A), acute pancreatitis model (group B), acute pancreatitis with normal saline (group C), and acute pancreatitis model with rhubarb (group D). The levels of serum amylase (AMY) and TNF-α were measured at 1st, 6th, 12th and 24th hour after modeling, and the pancreatic tissue were used to observe the pathologic changes. Compared to the sham group, the serum AMY and serum tumor necrosis factor (TNF-α) levels were significantly increased in the other groups (p <0.05). Compared to the model group and the saline group, the serum AMY, serum TNF-α level and pathological changes of rats in the rhubarb group were significantly lower (p <0.05). The serum AMY and TNF-α levels increased in acute pancreatitis. The rhubarb reduced the serum AMY and TNF-α level in rats with acute pancreatitis and reduced the pathological changes of pancreas and other tissues.

Key words: rhubarb, acute pancreatitis, TNF-α

To the Editor,

Rhubarb is one of the traditional Chinese medicines made from rhizomes and roots of Rheum palmatum L., Rheum tanguticum Maxim. ex Balf., Rheum undulatum, or Rheum officinale Baill. It has been used to control various diseases for thousands of years, and nowadays is the most common drug used for treating digestive system diseases by acting on the function of the entire digestive system, and some studies show its efficacy in the treatment of acute pancreatitis (1, 2). Emodin, one of the active compounds of rhubarb, can reduce the expression of TNF-α and other inflammatory factors in rat model with acute pancreatitis, exert its inhibitory effect on inflammation, and protect the permeability of the intestinal mucosal barrier. It is used for treating pancreatitis, pancreatitis associated with non-alcoholic fatty liver disease, cirrhosis caused by hepatitis C virus, and vitamin K coagulopathy (3-6). In some cases, pesticides, food additives and lifestyle products can affect the pancreas, causing acute pancreatitis (7).
LETTER TO THE EDITOR

IS LINGUAL TONSIL A PREFERENTIAL TARGET FOR PROCESSING SUBLINGUALLY ADMINISTERED MATERIALS?

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The oral cavity is a site of pivotal importance in the immune response to foreign antigens, ensuring tolerance induction to harmless agents but reactivity to potentially noxious antigens. Tolerance or reactivity are driven by a number of secondary lymphoid organs, all belonging to the Waldeyer ring, that include adenoids, tubal, palatine and lingual tonsils. Waldeyer’s ring tissues were acknowledged as implicated not only in the adaptive immune system but also in the innate immune system modulation, involving the toll-like receptors. In particular, findings from animal studies suggested that the lingual tonsil can be considered as an inductive site sampling and processing antigens to stimulate naïve T and B lymphocytes. According to a recent study showing that immunologically active or inactive materials placed under the tongue of allergic subjects rapidly reach the lingual tonsil, such a role seems likely also in humans, and warrants to be investigated in-depth for possible applications in medical treatments.
To the Editor,

Plasma cell neoplasms, characterized by a proliferation of a single clone plasma cells producing monoclonal immunoglobulins, are cytologically and immunophenotypically identical to plasma cell myeloma, but with osseous or extra-osseous localized growth pattern without evidence of systemic disease such as multiple myeloma (MM) (1).

Plasmacytoma is a malignant neoplasm of monoclonal B-cell proliferation and consists of three distinct entities according to the International Myeloma Working Group, 2003: solitary plasmacytoma of bone (SPB), extramedullary plasmacytoma (EMP) and multiple primary or recurrent plasmacytomas (2, 3). The EMP accounts for less than 4% of all plasma cell tumors and represents 1% of all head and neck (HN) tumors (4). Only a few cases of EMP (15%-20%) progress to MM (3) however, despite recent advances in the laboratory, imaging, and clinical evaluation, it is still impossible to identify which cases of EMP will progress to MM (5).

Biopsy of the tumor, based on the morphologic and immunophenotypic findings - localized monoclonal plasma cells without plasma cell proliferation in other sites in the absence of malignant lymphoma (5) - is required for the diagnosis. For instance, CD138 and CD38 are the most useful plasma cell markers (1, 6).

Sino-nasal solitary extramedullary plasmacytoma (EMP) is a rare neoplasm with unpredictable progression to multiple myeloma. To improve the precision of irradiation delivery, preserving the healthy surrounding tissue and critical structures we used a CyberKnife® for the treatment of sino-nasal solitary extramedullary plasmacytoma. We present the first case of sino-nasal-EMP treated with CyberKnife®-stereotactic radiotherapy (SRT) with a complete remission without adverse events. Based on the post-therapeutic results and healthy tissue preservation, we believe that CyberKnife®-SRT represents a good therapeutic option for the treatment of sino-nasal-EMP.
LETTER TO THE EDITOR

COLORECTAL CANCER: AN UPDATE ON THE EFFECTS OF LYCOPENE ON TUMOR PROGRESSION AND CELL PROLIFERATION

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Colorectal cancer (CRC) is one of the most common cancers worldwide. Various factors, including oxidative stress, where excessive productions of reactive oxygen species (ROS) and reactive nitrogen species (RNS) occur, contribute to its pathogenesis. Numerous studies have investigated the effect of antioxidant substances derived from food such as fruits and vegetables; however, data on Lycopene are still rare. Studies on HT-29 colorectal cancer cells and on animal models have shown that lycopene has effects on cell proliferation and on the progression of the CRC by interacting with various cellular signaling pathways. This analysis of the literature focused on the antioxidant effect of lycopene, a substance that is found in the tomato.
LETTER TO THE EDITOR

SHORT-TERM EFFECT OF SHOCKWAVE THERAPY, TEMPERATURE CONTROLLED HIGH ENERGY ADJUSTABLE MULTI-MODE EMISSION LASER OR STRETCHING IN DUPUYTREN'S DISEASE: A PROSPECTIVE RANDOMIZED CLINICAL TRIAL

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Dupuytren’s disease is a debilitating disease of the hand characterized by nodules on the surface of the palm with progressive loss of finger extension. The chosen forms of treatment are infiltrative and surgical. Conservative treatment could be useful but few studies have been carried out and these regarded mainly stretching exercises and thermo-therapy. To date, no study has analyzed the effects of biostimulation with shock-waves (SW) and high energy laser therapy [Temperature controlled High Energy Adjustable multi-mode emission Laser (THEAL)]. We recruited 45 patients, 32 males and 13 females (average age 63.4 years) affected by early or late stage Dupuytren’s disease [33 metacarpophalangeal (MCP) joints, 12 proximal interphalangeal (PIP) joints]. We randomized the patients into three treatment groups: extracorporeal shockwave therapy (ESWT), THEAL and stretching exercises. Follow-ups were at the end of treatment (T1), after 1 month (T2), and after 3 months (T3). The three forms of treatment determined a progressive clinical-functional improvement. The pain relief was statistically significant for SW and THEAL at all follow-ups (FUs) (p\textless;0.01). The functional recovery was statistically significant in the SW group at all FUs and in the THEAL and Stretching groups at T1 and T2 (p<0.01). Patient satisfaction level was higher for SW at T2 and T3 and for THEAL at T2 (p\textless;0.01). The extension deficit recovery as regards the MCP and PIP joints was statistically significant in the SW group at T1 and T2 (p\textless;0.01) and in the stretching group at T1 (p<0.01). The SW and THEAL treatments appear safe, have good efficacy and are associated with good patient satisfaction in the short and medium terms. Further studies may verify the possibility of repeated cycles and/or combined therapies to improve results.
Psoriasis is a chronic inflammatory skin disease with systemic involvement that might predispose to many psoriasis-related comorbidities, such as metabolic syndrome and cardiovascular disorders. Clusterin (Clu), also known as apolipoprotein J (ApoJ), is a highly conserved disulfide-linked heterodimeric glycoprotein implicated in a great variety of physiological and pathophysiological processes including lipid transportation, tissue remodeling, senescence, cell interaction, stress response, inflammation, apoptosis, diabetes mellitus and metabolic syndrome. Serum levels of Clu were assessed in 15 patients with moderate-to-severe psoriasis defined by the presence of a Psoriasis Area and a Severity Index (PASI) value of 10 or more. It was found that the Clu value was significantly higher in patients than in healthy subjects (p <0.001). Our data confirm that the association of psoriatic disease with some comorbidities, especially metabolic and cardiovascular disease, might support the correlation with increased circulating Clu. In particular, it should be pointed out that, according to the recent literature, the Clu could also have a protective role in the comorbidity of psoriasis patients. In addition, it has been published that Clu protects cardiomyocytes against ischemic cell death and is a potential therapeutic agent in the treatment of myocardial infarction; therefore it can be assumed that an artificial enhancement of Clu in the blood could limit the severity of damage also in respect to skin lesions. Although the increase in serum level of Clu was found in all patients with psoriasis, more studies on a larger cohort of patient samples is necessary to confirm the significance of high serum levels of clusterin/ApoJ and to suggest the use of this glycoprotein as an additional new marker in psoriasis pathogenesis. It could be a possibility to improve the prognosis in patients with psoriasis.
COLORECTAL CANCER AND INFLAMMATORY BOWEL DISEASES: EFFECTS OF DIET AND ANTIOXIDANTS

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It is well established that oxidative stress is common in inflammatory bowel diseases (IBDs). Accordingly, antioxidants are recommended for treatment. The aim of this study is to compare the effects of antioxidants contained in the various types of tea on symptoms and evolution of IBD and colorectal cancer (CRC). Analysis of the literature revealed that the theaflavin-3, 30-digallate (TFDG) contained in black tea, and epigallocatechin-3-O-gallate (EGCG) contained in green tea have protective effects against oxidative stress. Moreover, these substances are involved in many biochemical processes responsible for inflammation and proliferation of cancer cells. It is documented that both TFDG and EGCG are able to reduce inflammatory phenomena and symptoms associated with IBD, as well as to reduce the proliferation of CRC cells. Most studies are performed in vitro or in experimental animal models. It is, therefore, advisable to formulate studies that could be carried out on humans or human samples, in order to develop the appropriate therapeutic strategies.

LETTER TO THE EDITOR
Adipose tissue and skeletal muscle are organs capable of secreting many bioactive molecules, such as adipomiokines that could be possibly involved in mood disorders. In the present work, we investigated the possible behavioral effects of a single intracerebroventricular (i.c.v.) injection of two adipomiokines, fibrobroblast growth factor (FGF)-21 (0.5-5.0 µg) and irisin (0.4-0.6 µg), in male rats tested in the open field and elevated plus maze tests. Prefrontal cortex levels of norepinephrine (NE), dopamine (DA) and serotonin (5-hydroxytryptamine, 5-HT) and the gene expression of catechol-O-methyltransferase (COMT), dopamine transport (DAT) and tyrosine hydroxylase (TH), were measured by high performance liquid chromatography (HPLC) analysis and real-time reverse transcription polymerase chain reaction (RT-PCR). Both FGF-21 and irisin administration induced anxiogenic behavior, increased DA levels in prefrontal cortex, decreased COMT, DAT and increased TH gene expression. In conclusion, in the present study we demonstrated behavioral effects induced by central FGF-21 and irisin injections that could involve increased DA signaling in the prefrontal cortex.
LETTER TO THE EDITOR

MULTICENTER PROSPECTIVE Crossover STUDY ON NEW PROSTHETIC OPPORTUNITIES IN POST-LARYNGECTOMY VOICE REHABILITATION

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The aim of this study was to assess the clinical experience of three Italian centers using the third generation Provox Vega prosthesis, in terms of device life and voice outcome, comparing the results with the second generation Provox 2 prosthesis in the same sample. A prospective multicenter crossover study was performed in three phases. In the first phase we performed a reassessment, for enrollment purposes, of patients who were categorized into four different groups [normal – group A; radio-treated – group B; gastroesophageal reflux disease (GERD) – group C; and elderly subjects – group D]. In the second and third phases, all patients were monitored for prosthetic device life and assessed for objective and subjective voice characteristics after introducing Provox 2 and Provox Vega prostheses. In patients with Provox 2 prosthesis, the mean life was 165 days in group A, 148 days in group B, 91 days in group C and 188 days in group D. In Provox Vega patients, mean in situ prosthesis life was 213 days in group A, 182 days in group B, 118 days in group C and 227 days in group D. The perceptual voice data showed a better rating across all parameters for the Provox Vega samples compared to those of Provox 2. In this paper, we report the first multicenter crossover study comparing different prosthetic models in the same patients, categorized in relation to different typologies of tracheoesophageal rehabilitative status. Result analyses confirmed an optimal stability of the Provox Vega compared to the Provox 2, in terms of device life and perceptual voice parameters.
PLATELET RICH FIBRIN IN THE MANAGEMENT OF MEDICATION-RELATED OSTONECROSIS OF THE JAW: A CLINICAL AND HISTOPATHOLOGICAL EVALUATION

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Bisphosphonates are antiresorptive pharmacological agents used in the treatment of osteoporosis. Recently, osteonecrosis of the jaw (BRONJ), has been rechristened as MRONJ (medication-related osteonecrosis of the jaw) to accommodate the increasing number of cases of osteonecrosis of jaws associated with various other antiresorptive and antiangiogenic pharmacological therapies. The aim of the present study was to assess the outcome of using platelet-rich fibrin (PRF) for the treatment of MRONJ in a single study group. Twenty-three consecutive patients (15 females and 8 males; aged 52-73 years) with MRONJ were enrolled in this study. These patients presented a history of bisphosphonate medication of varying duration, presence of exposed bone in the maxillofacial region for more than eight weeks, and no history of radiation therapy to the jaws. These patients were managed by surgical curettage and application of platelet rich fibrin (PRF). The outcomes were assessed using clinical and histopathological methods. On the basis of the present findings, we can conclude that PRF can act as an effective barrier membrane between the alveolar bone and the oral cavity and may offer a fast, easy and effective alternative method for the closure of bone exposure in MRONJ patients.
Inflammatory bowel diseases (IBD), including Crohn’s disease and ulcerative colitis, have important extraintestinal manifestations, notably in the oral cavity. These oral manifestations can constitute important clinical clues in the diagnosis and management of IBD, and include changes at the immune and bacterial levels. Aphthous ulcers, pyostomatitis vegetans, cobblestoning and gingivitis are important oral findings frequently observed in IBD patients. Their presentations vary considerably and might be well diagnosed and distinguished from other oral lesions. Infections, drug side effects, deficiencies in some nutrients and many other diseases involved with oral manifestations should also be taken into account. This article discusses the most recent findings on the oral manifestations of IBD with a focus on bacterial modulations and immune changes. It also includes an overview on options for management of the oral lesions of IBD.
Vitamin D may have prognostic value in cardiovascular disease (CVD) patients and, in addition to conventional biomarkers, could be a valuable tool for disease management. The aim of this study was to assess the association of vitamin D status in patients with acute coronary syndrome (ACS) and to evaluate its prognostic utility. The levels of 25(OH) vitamin D were correlated with troponin T hs. Forty-eight consecutive outpatients (40 Caucasian and 8 Asian) aged between 40 and 70 years (mean 61.5, range 43-77 years) were enrolled in the study. All patients were admitted to the Emergency Department with chest pain and suspected ACS. The main exclusion criteria were age <18 years, kidney failure, onco-haematological disease, hypo-hyperparathyroidism, hypo/hyperthyroidism, osteoporosis, treatment with bisphosphonate or 25(OH) vitamin D supplementation. Of the 48 subjects included in the study, thoracic pain symptoms were described in 12 patients with unstable angina (UA) and in 6 patients with ST elevation myocardial infarction (STEMI) and in 30 patients with non-ST-elevation myocardial infarction (NSTEMI). Low 25(OH) vitamin D levels correlated with the presence of ACS (p< 0.02) and inversely correlated with Troponin T hs (TnT hs) levels (p< 0.03). The determination of 25(OH) vitamin D levels in combination with TnT hs could improve the research for possible underlying conditions, and these should be managed meticulously according to current guidelines.
Glomerular filtration rate (GFR) has been shown to be lower than physiological values during exercise with a strong negative correlation with exercise intensity. Among new markers of renal function, neutrophil gelatinase-associated lipocalin (NGAL) seems to be very promising. It is an early, sensitive and specific marker of acute kidney injury (AKI) with two isoforms: plasma NGAL (pNGAL) and urinary NGAL (uNGAL). The aim of the present study was to assess acute variations in NGAL plasma levels after performing high endurance physical exercise in a group of professional cyclists during the two major European professional cycling competitions (Giro D’Italia and Tour de France). Eighteen professional cyclists were recruited for the study. A blood sample was collected during rest (after 8 hours fasting) and immediately after the competition (mountain stages) in order to assess the effect of very intense exercise on kidney function by measuring the variations of pNGAL. We also assessed plasma levels of creatinine, creatine-kinase (CK), LDH, transaminases and electrolytes. The results showed that Creatinine, CK and electrolytes levels remained almost stable between rest and post-competition. The levels of transaminases and NGAL showed a mild increase between rest and post-competition, with a significant difference between the two values only for transaminases (p=0.005). However, post-competition values of all investigated variables remained within the physiological range. The results of the present study suggest that even if NGAL values mildly rose after competition, no kidney injury occurred in these highly trained athletes during mountain stages of professional competitions. Other studies in literature confirmed that high endurance physical exercise seems not to cause renal injury in elite athletes. This is probably due to adaptive mechanisms of renal function and to the adaptation to physical stress gained with training.