EDITORIAL

MOLECULAR BASIS OF GROWTH, PROLIFERATION, AND DIFFERENTIATION OF MAMMALIAN FOLLICULAR GRANULOSA CELLS

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For normal folliculogenesis and oogenesis to occur many intrinsic and extrinsic factors are needed, i.e. positive feedback of hormone secretion and local ovarian-follicular growth factors distribution. During follicle formation, granulosa cells (GCs) change their morphology and physiological properties. The factors needed for GCs to differentiate within each layer are transforming growth factor beta (TGFβ) and insulin-like growth factor (IGF), as well as the activation and modification of biochemical pathways involved in folliculogenesis. Physiological alterations occur when GC genes are characterized by several differences in their gene expression profile. Studies in recent years indicate a variety of processes involved in follicle morphology and biochemical remodeling during growth and development. It was demonstrated that IGFs play a central role in the differentiation of GCs both in vivo and in vitro. Moreover, the primary role of FSH and LH in the formation of the ovarian follicle, was also described. Our review article characterizes the most important pathways involved in the differentiation of GCs and the effect of various factors on gene expression in GCs during folliculogenesis.
EDITORIAL

HELICOBACTER PYLORI AND BARRETT’S ESOPHAGUS:
A PROTECTIVE FACTOR OR A REAL CAUSE?

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Notwithstanding the definite aetiopathogenetic path of certain diseases, the relationship between
Helicobacter pylori (H. pylori) and Barrett’s esophagus (BE), a condition that increases the risk for
dysplasia and consequently adenocarcinoma of the distal esophagus and esophagogastric junction,
remains uncertain. This paper reviews the current scientific literature with emphasis on the protective
correlation between H. pylori infection and BE and demonstrates that a causal relationship has not
been disproved with certainty. Furthermore, H. pylori infection could pose a risk for the onset of
gastroesophageal reflux disease (GERD), which could in turn trigger BE, a precancerous lesion, and
subsequently cause cancer. By analyzing the current available data, this article tries to verify that H.
pylori infection is the underlying cause of esophageal cancer.
FIBROMYALGIA AND BIPOLAR DISORDER:
EXTENT OF COMORBIDITY AND THERAPEUTIC IMPLICATIONS

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Fibromyalgia (FM) is a syndrome that affects muscles and soft tissues. Presenting symptoms include chronic muscle pain, fatigue, sleep problems and psychological symptoms, including depression and anxiety. There exists strong evidence of a comorbidity between FM and Bipolar Disorder (BD). In this study, papers from 2006 to February 2016 that examined the comorbidity and etiological similarities of FM and BD were reviewed, as well as the therapeutic implications of these findings. The reviewed articles showed that an adequate psychiatric screening for BD is recommended in FM patients with depressive symptoms, in order to decrease administration of antidepressants for BD, due to the lack of proven efficacy, and to limit antidepressant-induced mania. Alternative therapies, such as agomelatine, memantine and psychotherapeutic treatment should be considered.
ALEXITHYMIA AND ITS RELATIONSHIPS WITH INFLAMMATORY RESPONSE MEDIATED BY IL-1 FAMILY MEMBERS

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The major aim of this study is to provide a review of the research studies regarding the clinical link between alexithymia and interleukins (IL). We performed a search for the relevant literature by using search terms as “alexithymia” combined with “interleukin or IL”. A total of 9 original research studies were identified and included. Alexithymia was found to be prevalent in inflammatory response and associated with inflammatory cytokines. Our review emphasized for the first time the relationships of alexithymia with inflammatory response mediated by IL-1 family members. Therefore, the clinical psychological assessment of alexithymic traits and the administration of appropriate psychological and psychotherapeutical interventions should be integral parts of inflammatory disease management programs.
INFLAMMATION IN LUNG AFTER ACUTE MYOCARDIAL INFARCTION IS INDUCED BY DENDRITIC CELL-MEDIATED IMMUNE RESPONSE

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The present study was performed to describe the changes of lung tissues in mice with acute myocardial infarction (AMI) and also explain the cell mechanism involved in inflammation in lung. AMI was established by left coronary ligation in mice. Then mice were divided into three groups: control group, MW1 group (sampling after surgery for one week) and MW2 group (sampling after surgery for two weeks). Afterwards, measurement of lung weight and lung histology, cell sorting in bronchoalveolar lavage (BAL) fluid and detection of several adhesive molecules, inflammatory molecules as well as enzyme associated with inflammation were performed. Moreover, dendritic cells (DCs) were isolated from bone marrow of C57B/L6 mice. After incubating with necrotic myocardium, the expression of antigen presenting molecules, co-stimulatory molecules and inflammatory molecules were detected by flow cytometry or immunohistochemistry in DCs. We also detected T-cell proliferation after incubating with necrotic myocardium-treated DCs. AMI induced pathological changes of lung tissue and increased inflammatory cell amount in BAL fluid. AMI also increased the expression of several inflammatory factors, adhesive molecules and enzymes associated with inflammation. CD11c and TLR9, which are DC surface markers, showed a significantly increased expression in mice with AMI. Additionally, necrotic myocardium significantly increased the expression of co-stimulatory factors including CD83 and CD80, inflammatory cytokines including TNF-α, IFN-γ and NF-κB in DCs. Furthermore, DCs treated with necrotic myocardium also significantly promoted T-cell proliferation. AMI induced inflammation in lung and these pathological changes were mediated by DC-associated immune response.
KNOCKDOWN OF HMGB1 INHIBITS CELL PROLIFERATION AND INDUCES APOPTOSIS IN HEMANGIOMA VIA DOWNREGULATION OF AKT PATHWAY

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The high mobility group box 1 (HMGB1) as a conserved non-histone nuclear protein has been involved in a variety of biological processes of cancer, such as cell proliferation, apoptosis, angiogenesis and metastasis. Despite the increased expression of HMGB1 in many malignant tumors, the functions and molecular mechanisms by which HMGB1 contributes to the formation of hemangioma (HA) remain unclear. In the present study, immunohistochemistry was used to detect the expression levels of HMGB1 in different phases of human HAs. Cell function experiments, including MTT, cell colony formation and flow cytometry analysis were performed to evaluate the effects of HMGB1 knockdown on cell proliferation and apoptosis in HA CRL-2586 EOMA cells. As a consequence, we found that HMGB1 expression was significantly increased in proliferating phase HAs compared with the involuting phase HAs and normal skin tissues ($P<0.01$). Moreover, knockdown of HMGB1 gene in vitro suppressed EOMA cell proliferation and colony formation and induced cell apoptosis and cycle arrest at G0/G1 phase by downregulation of PCNA, CyclinD1, p-AKT and upregulation of p53 and cleaved PARP. Taken together, our findings demonstrate that HMGB1 may be implicated in the formation of HA through upregulation of AKT pathway, and represent a potential therapeutic target for treating HA.
JAK2 TYROSINE KINASE INHIBITOR AG490 SUPPRESSES CELL GROWTH AND INVASION OF GALLBLADDER CANCER CELLS VIA INHIBITION OF JAK2/STAT3 SIGNALING

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The Janus kinase-signal transducers and activators of transcription signaling pathway (JAK/STAT pathway) have displayed a critical role in tumor development and progression in multiple malignancies. Previous studies showed that inhibition of JAK/STAT signaling blocked cell growth and metastasis in cancer cells, however, the antitumor effects of JAK inhibitor AG490 on gallbladder cancer (GBC) have not been reported. Our present study aimed to investigate the effects and associated mechanisms of JAK inhibitor AG490 on cell growth, invasive potential and apoptosis in GBC cells (GBC-SD and SGC-996) indicated by MTT, cell colony formation, Transwell and flow cytometry. As a consequence, we found that JAK2 inhibitor AG490 inhibited cell growth and invasion, and induced cell apoptosis and cycle arrest in GBC-SD and SGC-996 cells. Furthermore, the expression levels of p-JAK2, p-STAT3, VEGFC-/-D and cyclinD1 were downregulated, while p53 expression was upregulated in AG490-treated GBC cells indicated by Western blot assay. Therefore, our findings demonstrate that JAK inhibitor AG490 inhibits growth and invasion of GBC cells via blockade of JAK2/STAT3 signaling and provides the potential therapeutic strategy for the treatment of GBC patients.
CYTOKINE MODULATION IN PATIENTS WITH IDIOPATHIC PULMONARY FIBROSIS UNDERGOING TREATMENT WITH STEROIDS, IMMUNOSUPPRESSANTS, AND IFN-γ 1b

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Idiopathic pulmonary fibrosis (IPF) is a chronic lung disease of unknown etiology and pathogenic mechanisms. From an etiopathogenic point of view, alveolar macrophages play a key role in accumulation of fibroblasts and deposition of collagen and extracellular matrix by releasing specific cytokines and inflammatory mediators. IPF seems to be also associated with circulating fibrocytes, which might be involved with an abnormal pulmonary vascular repair and remodeling. Based on its hypothesized pathologic mechanisms, anti-inflammatory, anti-fibrotic and immunosuppressive therapies are often used. For these reasons, Interferon-γ (IFN-γ) has been used to exploit its activity on macrophages and fibroblasts. The aim of this study was to investigate the response to corticosteroids and/or IFN-γ 1b treatments based on pulmonary function tests and on inflammatory cytokine patterns of expression on bronchoalveolar lavage (BAL), at baseline and during and after the therapies. Unlike previous studies, we analyzed a period of therapy longer than 1 year. Our results demonstrated the effectiveness of IFN-γ in a group of IPF patients in whom the treatment was prolonged for over a year. These data suggest a positive role of IFN-γ treatment in patients in the initial stage of the disease.
SAFETY AND PHARMACODYNAMIC MECHANISM OF ROPIVACAINE LUMBAR ANESTHESIA IN CESAREAN SECTION

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Lumbar anesthesia is the preferred anesthetic approach for puerperae undergoing cesarean section in China. To observe the safety of administering different doses of ropivacaine for cesarean section and its pharmacodynamic mechanism, we randomly divided 180 pregnant women undergoing cesarean section into three groups: group A, 10 mg ropivacaine (0.50%); group B, 12 mg ropivacaine (0.50%); and group C, 14 mg ropivacaine (0.50%). Pharmacodynamic index, anesthesia quality and incidence of untoward reactions of each group were observed. Group A performed the poorest and group C the best in evaluation of sensory and motory block (P<0.05). With regard to evaluation of hemodynamic index, hemodynamic parameters of the three groups had significant differences after medication; mean arterial pressure (MAP) of patients in group B decreased at time points T1, T2 and T3, and heart rate (HR) became much higher at T1 (P<0.05); MAP of the patients in group C decreased at T1, T2, T3, and T4, but HR became higher at T1 and T2 (P<0.05); HR of group B was higher than that of group A at T1 (P<0.05); MAP of the patients in group C had a significant decrease at T1, T2, T3, and T4, but HR became higher at T3 (P<0.05); MAP of patients in group C significantly decreased compared to group B at T1 and T2, but HR became higher at T3 (P<0.05). Fluctuation of oxyhemoglobin saturation (SpO2) of all patients was between 95% and 99%. There was no occurrence of myocardial ischemia or arrhythmia. 1-min Apgar score of neonates of the three groups had no significant difference (P>0.05). The incidence of adverse reactions of the patients in group C was much higher than that of the patients in the other groups (P<0.05). Twelve mg ropivacaine (5%) is the most suitable dose for pregnant women undergoing cesarean section as it can achieve a sound anesthetic effect and high safety and, moreover, has little influence on respiratory and circulatory functions.
LETTER TO THE EDITOR

CYCLOSPORINE–A AUGMENTS ENDOPLASMIC RETICULUM STRESS MARKERS AND EXPRESSION OF MATRIX PROTEIN mRNA

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Cyclosporine-A induces gingival overgrowth with disturbance in the homeostasis of cells and connective tissue proteins. Human gingival fibroblasts were cultured with cyclosporine A, and the expression of two vital endoplasmic stress markers and two prime matrix proteins (connective tissue growth factor (CTGF and periostin) were assessed by RT-PCR. We found that expression of Glucose-Regulated Protein 78 (GRP78/BIP) and CCAAT/enhancer binding protein, C/EBP homologous protein (CHOP) were significantly increased, along with CTGF and periostin, suggesting a role for these factors in gingival overgrowth.
THE BIOMEDICAL ASPECTS OF ORAL MUCOSAL EPITHELIAL CELL CULTURE IN MAMMALS

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In recent years, there has been a growing interest in epithelial cell tissue culture, particularly oral mucosa and its application utilizing in vitro cell culture in medicine. This involves tests using animal models to better understand oral mucosa function, and the differences in its construction in various animal models. The use of buccal pouch mucosal cell culture provides insight into the processes of trans mucosal transport and regeneration of the oral epithelium. The processes associated with epithelium regeneration is the base for stem cell research and/or oral cancer investigation. These artificially cultured tissue equivalents are used in transplant surgery for the treatment of a variety of tissue dysfunctions, i.e. eye, esophagus, or urethra. In this review, the most recent results from studies carried out on in animal models, which may be applied in areas such as regenerative medicine and reconstructive surgery, were explored.
LETTER TO THE EDITOR

THE PIG AS A MODEL FOR PREMATURE INFANTS - THE IMPORTANCE OF IMMUNOGLOBULIN SUPPLEMENTATION FOR GROWTH AND DEVELOPMENT

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Preterm human neonates, contrary to preterm piglets, obtain immunoglobulins from their mothers via the placenta during intrauterine development. However, one should note that the majority of trans-placental transfer of immunoglobulins in humans takes place during the last trimester of pregnancy. It is also known that the feeding of limited amounts of colostrum or systemic infusion of small amounts of serum improves the survival of preterm and full-term piglets. Full-term piglets deprived of their mother’s immunoglobulins exhibit strong apathy and develop watery diarrhoea, often resulting in death. The aim of the current study was to determine if provision of immunoglobulins using different approaches would be beneficial for survival outcomes. To reach the immunological sufficient level we infused immunoglobulins intravenously in amount mimicking the blood level in piglets fed with sow colostrum. Intravenous infusion of immunoglobulins in both preterm and full-term newborn piglets fully ensured their survival, growth and blood immunoglobulin G and protein levels similar to those observed in piglets fed colostrum. Piglets completely deprived of immunoglobulins exhibited significantly lower blood levels of immunoglobulins and protein compared to colostrum-fed animals. Piglets infused with only serum exhibited significantly lower blood immunoglobulin G level compared to those infused with immunoglobulins. In conclusion, based on the data obtained, we suggest that passive immune support provided by colostrum intake or early systemic infusion of Ig’s in sufficient amounts is key to ensuring the general well-being of preterm and full-term newborn piglets, used as an animal model for the human infant.
LETTER TO THE EDITOR

THE EFFICACY OF PROANTHOCYANIDINS AND SECNIDAZOLE IN THE TREATMENT OF CHRONIC PERIODONTITIS AFTER SCALING AND ROOT PLANING THERAPY

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The aim of this study is to evaluate the clinical and microbiological effect of the systemic antibiotic therapy of proanthocyanidins and secnidazole on periodontitis. Seventy-five subjects with chronic periodontitis were randomly divided into two treatment groups (secnidazole or proanthocyanidins) and one placebo control group (25 cases each). Plaque index (PI), gingival index (GI), gingival bleeding index (BI), probing pocket depth (PPD), and clinical attachment level (CAL) were carried out at baseline, post-treatment and 3 months after treatment. Microbial analysis was performed at baseline and post-treatment. The results show that the two treatment groups had greater mean reduction in BI, GI, and PPD evaluated at both post-treatment and 3 months after treatment compared to the control group (p < 0.05), but there were no significant differences in those of PI and CAL (except CAL evaluated at post-treatment, p > 0.05). After treatment, culturable bacteria counts significantly decreased. In conclusion, the adjunctive use of proanthocyanidins or secnidazole in combination with scaling and root planing in adults with periodontitis is effective in reducing the pathogenic flora and achieves significantly better clinical results to a certain degree.
LETTER TO THE EDITOR

CORRELATION BETWEEN CYSTATIN C AND RETINOPATHY OF TYPE-TWO DIABETES MELLITUS PATIENTS

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Diabetic retinopathy is one of the most common diabetic microvascular complications. In recent years the incidence of the disease has increased, hence early diagnosis and treatment are of great importance. In order to find reliable biological indexes to diagnose and treat type-two diabetes mellitus promptly, this study focused on the correlation between Cystatin C (Cys C) and retinopathy of type-two diabetes mellitus patients. One hundred and eighty type-two diabetes mellitus patients and one hundred healthy controls (the control group) were chosen in this study. Of the patients ninety-eight patients had type-two diabetes mellitus without retinopathy (non-diabetic retinopathy group) and eighty-two had type-two diabetes mellitus with retinopathy (diabetic retinopathy group). Correlation of Cys C and type-two diabetic retinopathy was analyzed by examining the waist-hip ratio, fasting blood glucose (FBG), total cholesterol (TC), triglycerides (TG), high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), glycosylated hemoglobin (HbA1c), and Cys C of both groups. The results showed that FBG, TC, TG, LDL-C, HbA1c, Cys C in the type-two diabetes mellitus patients group were higher than those of the control group (P<0.05). Age, course of diabetes, FBG, HbA1c, and Cys C levels were statistically significant in both the DR group and NDR group (P<0.05). The result of logistic regression analysis indicates that there was a positive correlation between type-two diabetic retinopathy development and age, course of diabetes, and Cys C level (P<0.05). Thus, it can be seen that changes of Cys C levels can assist early diagnosis and treatment of diabetic retinopathy to some extent. The patients with high Cys C level, long course of diabetes, and old age are more likely to have diabetic retinopathy.
SALIVARY CORTISOL, ALPHA-AMYLASE AND IMMUNOGLOBULIN A RESPONSES TO A MORNING SESSION OF BASKETBALL OR VOLLEYBALL TRAINING IN BOYS AGED 14–18 YEARS

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This study investigates whether a single session of routine morning basketball or volleyball training affects saliva levels of cortisol, alpha-amylase (sAA) and secretory immunoglobulin A (sIgA) in boys aged 14–18 years. Twenty-nine boys who participate in basketball or volleyball training, recruited from the Marcin Gortat’s Athletic Championship School in Lodz, were enrolled in the study. The 90-minute routine exercise program included 15 minutes of warm-up followed by basketball or volleyball practice. Unstimulated saliva samples were collected prior to and immediately after the exercise, and were analysed using ELISA. One training session resulted in a significant increase of sAA concentration in all participants, as well as in the volleyball and basketball subgroups (p=0.00022; p=0.0029; p=0.0011; respectively). Post-exercise cortisol levels were significantly lower than pre-exercise levels (p=0.00002) throughout the group, as well as in the volleyball and basketball subgroups (p=0.0048; p=0.0019; p=0.0048; respectively). The exercise protocol did not significantly affect sIgA level, either in the whole examined group or the volleyball subgroup, however a weak significant increase of sIgA was observed in the basketball subgroup (p=0.046). The routine morning training session comprising a warm-up followed by basketball or volleyball practice seems to activate the sympatho-adrenal-medullary system, with a subsequent increase of alpha-amylase, but does not affect oral immunity in 14-18-year-old boys.
LETTER TO THE EDITOR

EFFECTS OF HUMAN PARATHYROID HORMONE ON BONE MORPHOGENETIC PROTEIN SIGNAL PATHWAY FOLLOWING SPINAL FUSION IN DIABETIC RATS


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Osteoporosis is a major complication in patients with diabetes mellitus. Thus, it is crucial to study the signal mechanisms responsible for enhancement of bone mass in diabetes. Administration of human parathyroid hormone (hPTH) has been reported to prevent osteoblast apoptosis and have anabolic effects on bone in animals and humans. In the present study, we examined the effects of hPTH on expression of bone morphogenetic protein type 2 (BMP-2) and its receptor BMPR2 in diabetic rats following spinal fusion. Our data show that hPTH amplified BMP-2 and BMPR2 in bone tissues of non-diabetic rats, but not in diabetic rats. Our data further demonstrate that hPTH plays a role in regulating BMP-2 and BMPR2 via mTOR-PI3K signal pathway. We suggest specific signaling pathways by which hPTH regulates BMP-2 via mTOR-PI3K mechanism in bone formation following spinal fusion. Notably, our data indicate under diabetic conditions this signal pathway is impaired, thereby likely affecting bone formation after spinal fusion. The subsequent induction of BMP-2 and BMPR2 are likely a part of the protective effects aimed at attenuating pathological bone damage as a result of diabetes.
LETTER TO THE EDITOR

EFFECTS OF ANESTHESIA USING PROPOFOL AND ETOMIDATE ON T LYMPHOCYTE SUBPOPULATION OF INFECTIOUS SHOCK PATIENTS IN PERIOPERATIVE PERIOD

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Infectious or septic shock is induced when a toxic microorganism invades blood circulation in the human body. Emergency operation is an effective method for treating infectious shock in the early stages although the use of anesthesia is more complex due to the internal disorders caused by the disease. This study explored the effects of propofol and etomidate anesthesia on the cellular immune function (T lymphocyte subpopulation) of infectious shock patients, aiming to provide a basis for the selection of the proper anesthetic method. One hundred and twenty patients with infectious shock were selected and randomly divided into an observation and a control group. The control group were narcotized using propofol, while the observation group were narcotized using etomidate. The effects on the immune functions of patients and drug-related adverse reactions were compared between the two groups. Results demonstrated that the levels of CD3+ and CD4+ of the two groups were similar before anesthesia and the differences had no statistical significance (P>0.05). After anesthesia, the levels of both groups showed a tendency to decrease and the levels of CD3+ and CD4+ of the observation group were much higher than those of the control group in the different periods. The differences were statistically significant (P<0.05); the differences of CD8+ level and CD4+/CD8+ between the two groups had no statistical significance before anesthesia (P>0.05); after anesthesia, CD8+ level and CD4+/CD8+ of the observation group were all much higher than those of the control group in the different periods and the differences had statistical significance (P<0.05). Therefore, the conclusion is that etomidate anesthesia has little influence on the immune functions of infectious shock patients in perioperative period and the incidence of adverse reaction is low, hence, worth clinical promotion.
LETTER TO THE EDITOR

INDOLEAMINE 2,3-DIOXYGENASE AND REGULATORY T CELLS IN INTESTINAL MUCOSA IN CHILDREN WITH INFLAMMATORY BOWEL DISEASE

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Impaired immune regulation has been suggested as an underlying mechanism of inflammatory bowel disease. Indoleamine 2,3-dioxygenase (IDO) and regulatory T cells expressing FOXP3 are crucial elements of immune regulation. Conversion of FOXP3+ lymphocytes to Tregs is one of the functions of IDO. The aim of this study was to evaluate the number of cells expressing FOXP3 and IDO in the lamina propria of intestinal mucosa and to evaluate correlations between these parameters and disease activity. Sixty-six children newly diagnosed with inflammatory bowel disease (41 patients with ulcerative colitis and 25 patients with Crohn’s disease) were included in the study. Clinical activity of the disease was assessed by the Pediatric Ulcerative Colitis Activity Index and the Pediatric Crohn’s Disease Activity Index. Histopathological activity was scored according to the system described by Geboes. The infiltration of FOXP3+ and IDO+ cells was evaluated by immunohistochemistry. Sixteen patients with a diagnosis of irritable bowel syndrome (IBS) served as a control group. Lamina propria demonstrated a significantly higher infiltration of FOXP3+ and IDO+ cells in inflammatory bowel disease compared to the control group (p=0.001, p=0.004, respectively). The number of IDO+ and FOXP3+ cells correlated with clinical and histopathologic activity of Crohn’s disease. A positive correlation between the number of IDO+ and FOXP3+ cells was found in both types of inflammatory disease but not in patients with IBS. We conclude that indoleamine dioxygenase and FOXP3+ cells are upregulated in the intestinal mucosa of children with inflammatory bowel disease. IDO mediated conversion of FOXP3- T cells to Tregs predominantly occurs in inflammation.
CORRELATION BETWEEN BLOOD ASYMMETRIC DIMETHYLARGININE LEVEL AND THE COMPLICATIONS OF PATIENTS WITH CARDIOVASCULAR DISEASES

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This study aimed to investigate the correlation between blood asymmetric dimethylarginine (ADMA) and the complications of patients with cardiovascular diseases through studying the level changes of ADMA, endothelial nitric oxide synthase (eNOS) and NO. Two hundred research subjects with small differences in gender ratio and age, including 50 patients with hypertension combined with myocardial infarction, 50 patients with hypertension, 50 patients with myocardial infarction and 50 healthy normal controls, were enrolled. Relevant basic indexes were measured and recorded; the blood ADMA levels of all the research subjects were detected using high pressure liquid chromatography (HPLC) within the required time. Furthermore, the levels of eNOS and NO were detected using enzyme-linked immunosorbent assay and the relevant information, such as blood pressure, was recorded. The comparison and analysis results of data obtained through detection demonstrated that the subjects in the four groups were well comparable. It was found that the myocardial infarction combined with hypertension group had a much higher serum ADMA level and relatively low levels of eNOS and NO compared to those of the other three groups; the myocardial infarction group and the hypertension group had a much higher serum ADMA level compared to that of the healthy control group and the two groups had much lower levels of eNOS and NO. Moreover, the serum ADMA level was in a positive correlation with the severity of cardiovascular diseases and it showed a significant difference in patients with different severity of hypertension. The change of blood ADMA level can induce acute myocardial infarction as well as the occurrence of cardiovascular disease-associated complications.
LETTER TO THE EDITOR

EVALUATION OF TOLERANCE AND SAFETY OF CONVERSION FROM MYCOPHENOLATE MOFETIL TO ENTERIC-COATED MYCOPHENOLIC ACID IN RENAL TRANSPLANT RECIPIENTS

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This study was designed to evaluate the curative effect of conversion from mycophenolate mofetil (MMF) to enteric-coated mycophenolate sodium tablets (EC-MPS) and its safety. One hundred and twenty renal transplant recipients who developed MMF-associated chronic diarrhea were selected as research subjects and treated with EC-MPS. The patients were followed up for 12 months to compare the improvement of gastrointestinal symptoms and the indexes such as carbon dioxide combining power (CO₂ CP), serum sodium, serum potassium, serum creatinine (Scr) and 24-h urine protein before and after conversion treatment. One hundred and ten of the 120 patients tolerated the conversion treatment and the dose increment of EC-MPS at week 28. After initiating the conversion treatment, the improvement rate of diarrhea within 2 weeks was 95% (114/120). Indexes, such as CO₂ CP, serum sodium, serum potassium, after conversion treatment were higher than those before treatment (P<0.05). No acute rejection reactions were observed in the 12-month follow-up. Indexes of Scr and 24-h urine protein had significant improvement after conversion treatment compared to before conversion treatment (P<0.05). Compared to before treatment, the average values of indexes in gastrointestinal symptom rating scale in the 12th month remained stable, except for the increase of dose. For renal transplant recipients who received suboptimal EC-MPS treatment due to gastrointestinal symptoms, conversion from MMF to EC-MPS can significantly lower gastrointestinal symptom load, improve quality of life, relieve electrolyte disturbance and improve the injured functions of transplanted kidney, without increasing the risks of acute rejection reactions.
LETTER TO THE EDITOR

NEUROCHEMICAL EFFECTS OF PHOTOBIOSTIMULATION IN THE TRIGEMINAL GANGLION AFTER INFERIOR ALVEOLAR NERVE INJURY

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Orofacial pain is associated with peripheral and central sensitization of trigeminal nociceptive neurons. Nerve injury results in release of chemical mediators that contribute to persistent pain conditions. The activation of the transient receptor potential vanilloid 1 (TRPV1), promotes release of calcitonin gene-related peptide (CGRP) and substance P (SP) from trigeminal nerve terminals. CGRP and SP contribute to the development of peripheral hyperalgesia. The expression of SP and CGRP by primary afferent neurons is rapidly increased in response to peripheral inflammation. CGRP receptor activation promotes activation of AMPA receptors, leading to increased firing of neurons which is reflected as central sensitization. In this study we investigated whether inferior alveolar nerve (IAN) injury influences AMPA receptors, CGRP, SP and TRPV1 expression in the trigeminal ganglion (TG). The relative expression of the protein of interest from naive rats was compared to those from injured rats and animals that received low level laser therapy (LLLT). IAN-injury did not change expression of GluA1, GluA2 and CGRP, but increased the expression of TRPV1 and SP. LLLT increases GluA1 and GluA2 expression and decreases TVP1, SP and CGRP. These results, together with previous behavioral data, suggest that IAN-injury induced changes in the proteins analyzed, which could impact on nociceptive threshold. These data may help to understand the molecular mechanisms of pain sensitization in the TG.
ROLE OF DIODE LASERS IN ORO-FACIAL PAIN MANAGEMENT

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With the increasing use of low level laser therapy (LLLT) in clinical dentistry, the aim of the present study was to assess the effectiveness of diode lasers in the management of orofacial pain. Indexed databases were searched without language and time restrictions up to and including July 2016 using different combinations of the following key words: oral, low level laser therapy, dental, pain, diode lasers, discomfort and analgesia. From the literature reviewed it is evident that LLLT is effective compared to traditional procedures in the management of oro-facial pain associated to soft tissue and hard tissue conditions such as premalignant lesions, gingival conditions and dental extractions. However, it remains to be determined which particular wavelength will produce the more favorable and predictable outcome in terms of pain reduction. It is highly recommended that further randomized control trials with well-defined control groups should be performed to determine the precise wavelengths of the diode lasers for the management of oro-facial pain. Within the limits of the present review, it is concluded that diode lasers therapy is more effective in the management of oro-facial pain compared to traditional procedures.
OSTEGENESIS-PROMOTING ACTIVITY OF COMPOSITES SBA-15 MESOPOROUS PARTICLES CARRYING OXYTOCIN IN VITRO AND IN VIVO

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This study analyzes the performance of SBA-15 mesoporous particles carrying oxytocin (OT) in promoting osteogenesis in vitro and in vivo. The SBA-15 particles synthesized in the previous studies (about 30 µm in diameter and containing 10 nm deep pores) were loaded with the drug oxytocin and cultured with human osteosarcoma MG-63 cell line in vitro. The influence of particles on cell proliferation was studied. The level of the osteogenic marker (alkaline phosphatase and type I collagen) was measured. For in vivo studies, the connectivity defects of rabbit skull were prepared, and SBA-15 suspensions were regularly injected at the defect sites. The changes in the defect site calcium salt deposition were measured, and morphological changes were observed by microscopy. The material had to promote effect on osteogenesis-related indicators such as alkaline phosphatase and collagen I in bone sarcoma cell line MG-63. In vivo, the calcium salt deposition in OT/SBA-15 group was significantly higher than in the blank group. SBA-15 carriers appeared to persist in the region of the defect after the injection and release the drugs slowly, thus playing a more distinct role in promoting bone repair of local bone defects. The results showed that SBA-15 particles with OT could slow the release drugs and could help in promoting osteogenesis.
LETTER TO THE EDITOR

UP-REGULATION OF miR-888-5p IN HEPATOCELLULAR CARCINOMA CELL LINES AND ITS EFFECT ON MALIGNANT CHARACTERISTICS OF CELLS

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MicroRNA (miRNA) expression has been linked to the molecular pathogenesis of hepatocellular carcinoma (HCC). The aberrant expression of miRNA is involved in the processes of tumorigenesis and cancer progression. According to the latest research, miR-888-5p is associated with strong cancer-promoting effect. For instance, miR-888-5p is up-regulated in prostate cancer and breast cancer. Nevertheless, the role of miR-888-5p in HCC has not been investigated to date. In this study, we found that miR-888-5p levels in four HCC cell lines (SMMC7721, HepG2, Huh-7 and Bel7402) were significantly up-regulated compared with human hepatocyte cell line (HHL-5). After transiently transfected with miR-888-5p mimic, our results demonstrated that miR-888-5p plays a major role in promoting the proliferation and metastatic potential of HCC cells. Moreover, miR-888-5p also increased the expression of MMP-2 and MMP-9 proteins which account for cell migration and invasion, and decreased the expression of p53 protein which further promoted malignance of HCC. Therefore, miR-888-5p may be considered a potential biomarker for diagnostics and prognosis of HCC.
LETTER TO THE EDITOR

DECITABINE TREATMENT FOR ACUTE MYELOID LEUKEMIA RELAPSE AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Therapeutic options for patients with relapse of acute myeloid leukemia (AML) after allo-SCT are limited. Here, we present a case of a 49-year female with AML who underwent myeloablative allo-SCT from a matched sibling donor. Seven months after transplantation she developed cGVHD and suffered from extramedullary plus concurrent medullary relapse. The presence of CNS extramedullary disease is unique. Our patient was treated with decetabine. After one cycle the patient achieved complete remission and full donor chimerism without severe side effects or the occurrence of GVHD. Our case report, together with previous studies, provides strong evidence that decitabine may be a suitable treatment option for AML relapse after allogeneic transplantation, especially in patients who developed GVHD.
LETTER TO THE EDITOR

DETECTION OF COMBINED PROCALCITONIN AND C-REACTIVE PROTEIN APPLIED IN THE DIAGNOSIS OF BACTERIAL INFECTIONS

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In recent years, procalcitonin and C-reactive protein have been used as important indexes in the detection of inflammation. In order to analyze the combined detection of procalcitonin and C-reactive protein in infected patients, 57 subjects in the Clinical Laboratory of Zhengzhou Maternal and Child Health Hospital with a bacterial infection were selected as the observation group. Correspondingly, 57 non-infected subjects were selected for the control group. The procalcitonin and C-reactive protein levels in the included cases were analyzed and compared by extracting peripheral blood. The results showed that the two indexes of C-reactive protein (46.13±8.24 mg/L) and procalcitonin (6.61±3.45 ug/L) of the observation group were significantly higher than those of the control group (P<0.05). The positive rates of C-reactive protein (71.93%) and procalcitonin (91.23%) of the observation group were significantly higher than those of the control group (P <0.05). Within the observation group, the C-reactive protein and procalcitonin levels in the infected patients after 2 and 3 days of treatment, decreased significantly (P <0.05). This study indicates that the combined detection of procalcitonin and C-reactive protein in patients with bacterial infections is effective and can be used in clinical settings.
LETTTER TO THE EDITOR

BENEFICIAL EFFECTS OF PROTEIN HYDROLYSATES IN EXERCISE AND SPORTS NUTRITION

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Protein hydrolysates (PH) are rich sources of proteins that supply the need of exercising muscles. PHs are enriched in di- and tripeptides and are better than free amino acids or intact proteins when muscle anabolic effect is considered. Digestion, absorption and muscle uptake of amino acids are faster and more efficient when PH is ingested in comparison to the respective intact protein. PHs not only enhance endurance in high intensity exercise regimen, but also help in faster post-exercise recovery of muscle by promoting glycogen synthesis, although the latter effect requires more convincing evidence. PHs have been shown to exhibit insulinotrophic effect as it enhances the secretion of insulin and the hormone, in turn, exerts muscle anabolic effect.
LETTER TO THE EDITOR

SCREENING AND COMPARISON OF POLYCHROMATIC AND MONOCHROMATIC IMAGE RECONSTRUCTION OF ABDOMINAL ARTERIAL ENERGY SPECTRUM CT

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We screened the suitable image reconstruction to observe the abdominal artery and compare the quality between the polychromatic and the monochromatic reconstruction images of the abdominal artery spectrum CT. Eighty patients underwent Gemstone CT energy spectrum imaging to obtain an abdominal artery polychromatic image (140 kVp) and a monochromatic image from 40 ~ 140 keV. The CT value of region of interest (ROI) was measured on the polychromatic image and the single energy image. The signal-to-noise ratio (SNR) and contrast-to-noise ratio (CNR) of the abdominal aorta and hepatic artery were determined. The images in each group underwent image quality subjective scoring by three experienced radiologists using a blinded method. Finally, comprehensive comparisons and image quality subjective scorings were performed on the CT, SNR, and CNR values of the abdominal aorta. The obtained data were statistically analyzed by SPSS 19.0 software. When the keV value was reduced, the CT value of the abdominal artery gradually increased, and the image noise also changed. The comprehensive comparisons and subjective scorings were finalized for each single energy image based on the abdominal artery image quality objective indicators (CT value, SNR, and CNR). Results revealed that the abdominal artery image quality in the 50 ~ 60 keV monochromatic group was better compared to the polychromatic group. Furthermore, onochromatic imaging had different impacts on the abdominal aorta and hepatic artery image qualities. In different types of abdominal arterial reconstruction images obtained using abdominal energy spectrum CT conventional enhanced scanning, the image quality of the 50 ~ 60keV monochromatic reconstruction was higher when compared with the polychromatic reconstruction. Thus, it is recommended to apply the conventional reconstruction for abdominal artery energy spectrum CT scanning.
LETTER TO THE EDITOR

IDIOPATHIC INTRACRANIAL HYPERTENSION IN A PAEDIATRIC POPULATION: A RETROSPECTIVE OBSERVATIONAL STUDY ON EPIDEMIOLOGY, SYMPTOMS AND TREATMENT

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Idiopathic intracranial hypertension (IIH) is a disorder of unknown origin, which is characterized by elevated intracranial pressure (ICP) without underlying etiological evidence of neurological disease. The purpose of the current study was to evaluate epidemiological features, clinical presentation, diagnostic findings and treatment of sixteen children (7 males and 9 females) with IIH. Medical records of the patients were obtained from the University Paediatric Hospital of Catania, Italy. Clinical features, investigations and treatment approaches were retrieved. The mean age of the sixteen children at onset of symptoms was 9 years (range: 4 to 16 years). Most of the patients were classified as pre-pubertal. Mean BMI was 28.9 kg/m². In 93.75% of patients headache was the presenting clinical symptom; and in the same percentage papilledema was detected as the accompanied sign during diagnostic flow-chart. The mean lumbar puncture opening pressure (LPOP) was 350 mm H₂O. Fifty percent of the cases had normal brain imaging, while 12.5% showed enlarged optic nerve diameter and one patient had an intraocular protrusion of the optic nerve on MRI. Two patients (12.5%) had venous sinus stenosis, and one case showed an abnormal spinal MRI. With regard to therapeutic approaches, 93.75% of the cases were successfully treated with Acetazolamide. None of the patients required surgical procedures, and all neuroimaging findings disappeared after receiving treatment. In the present study we investigated the association of IIH with venous sinus stenosis. We also found ocular ultrasound to be a useful non-invasive alternative method for determining papilledema in paediatric IIH, specifically in an emergency setting.
LETTER TO THE EDITOR

ADJUVANT TREATMENT WITH A SYMBIOTIC IN PATIENTS WITH INFLAMMATORY NON-ALLERGIC RHINITIS


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Inflammatory non-allergic rhinitis (INAR) is characterized by the presence of an inflammatory infiltrate and a non-IgE-mediated pathogenesis. This retrospective, controlled, multicentre study investigated whether a symbiotic, containing Lactobacillus acidophilus NCFM, Bifidobacterium lactis, and fructo-oligosaccharides (Pollagen®, Allergy Therapeutics, Italy), prescribed as adjunctive therapy to a standard pharmacological treatment, was able to reduce symptom severity, endoscopic features, and nasal cytology in 93 patients (49 males and 44 females, mean age 36.3±7.1 years) with INAR. The patients were treated with nasal corticosteroid, oral antihistamine, and isotonic saline. At randomization, 52 patients were treated also with symbiotic as adjunctive therapy, whereas the remaining 41 patients served as controls. Treatment lasted for 4 weeks. Patients were visited at baseline, after treatment, and after 4-week follow-up. Adjunctive symbiotic treatment significantly reduced the percentages of patients with symptoms and endoscopic signs, and diminished inflammatory cells. In conclusion, the present study demonstrates that a symbiotic was able, as adjuvant treatment, to significantly improve symptoms, endoscopic feature, and cytology in patients with INAR, and its effect may be long lasting.
LETTER TO THE EDITOR

ACTN3/ACE GENOTYPES AND MITOCHONDRIAL GENOME IN PROFESSIONAL SOCCER PLAYERS’ PERFORMANCE

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Two nuclear genes, ACTN3, encoding for the α-actinin skeletal muscle isoform 3, and ACE encoding the angiotensin-converting enzyme, have both been associated with quantitative physical performance traits in the general population. The purpose of our study was to assess the association between the two nuclear gene variants, R577X (rs1815739) in ACTN3 and I/D (rs4340) in ACE, with elite athletes’ performance and the effect of training on the mitochondrial DNA (mtDNA) content in peripheral blood. We evaluated the genotypes and frequencies of ACTN3 R577X and ACE I/D polymorphisms between soccer players (n = 43) and healthy non-athletic controls (n = 128). Total DNA was extracted from peripheral blood samples using the standard procedure. The genotypes were assessed by PCR-RFLP analysis and mtDNA cellular content by RT-PCR. The soccer players showed a tendency to a prevalence of ACTN3 RR and ACE DD genotypes both independently and in co-occurrence. The effect of physical training on the mitochondrial DNA content in the athletic population was reflected strikingly in its increase in peripheral blood. Based on our results, we suggest that the analysis of ACTN3 and ACE genotypes could predict talent in the soccer field and that knowledge of the genetic variants could determine types and training times for soccer players. In addition, the novelty of this work, never before described in the sports literature, is that the increase of mitochondrial content can be correlated with the training load, suggesting that the mtDNA copy number may be considered a viable bioenergetics biomarker.
USE OF SUPERCHARGED COVER SCREW AS STATIC MAGNETIC FIELD GENERATOR FOR BONE HEALING, 1st PART: IN VITRO ENHANCEMENT OF OSTEOBLAST-LIKE CELL DIFFERENTIATION

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Since 1979, Pulsed electromagnetic fields (PEMFs) have been approved by the Food and Drug Administration as an effective method in the treatment of non-unions. As well as PEMFs, also static magnetic fields (SMFs) have been widely investigated in orthopaedic studies. Even if the exact mechanism of action is not well understood, a large number of studies showed specific effects both at cellular and tissue levels. As bone fracture healing and osseointegration share the same biological events, the application of magnetic field stimulation in order to facilitate the osseointegration process has been suggested. In this study we investigated the proliferation rate and gene expression profile of MG63 osteoblastic-like cells after a 24, 48 and 72-hour SMF stimulation, generated by a small, customized cover screw-shaped neodymium-iron-bore magnet placed in the inner cavity of a dental implant. As a result, we found that the application of a SMF to osteoblastic-like cells does slightly decrease cell proliferation rate while enhancing the expression of those genes correlated to differentiation and mineralization. Our findings represent, to our knowledge, the first clinical ready technique for dental implants showing the ability of SMF to promote the osteogenesis process in vitro.
LETTER TO THE EDITOR

MATERNAL OBESITY AND PERINATAL OXIDATIVE STRESS:
THE STRENGTH OF THE ASSOCIATION

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Maternal obesity is a chronic inflammatory state, which has been shown to induce increased levels of free fatty acids, reactive oxygen species and inflammatory cells. Recent evidence reveals increased levels of lipid peroxidation products in the plasma of obese women during pregnancy. The aim of this study was to test the hypothesis that maternal overweight or obesity is associated with increased oxidative stress (OS) in offspring. Two hundred and forty-five pregnant women and their newborns were prospectively enrolled. Mothers were divided in two groups: lean control - LC (n=175, Group I); overweight or obese (n=70, Group II) according to BMI ≥ 25 before pregnancy. Cord blood F2-isoprostanes (F2-IsoPs), as reliable markers of OS, were measured in all newborns. Lower 1 minute APGAR score and higher weight at discharge were found in Group II neonates, compared to those of Group I (p<0.05). Small for gestational age (SGA) newborns of both groups showed increased levels of F2-IsoPs than appropriate (AGA) or large (LGA) for gestational age (GA) (p<0.01). SGA newborns of Group II had higher F2-IsoPs levels compared to SGA of Group I (p<0.01), which were significantly correlated to maternal BMI at the end of pregnancy (r=0.451, p<0.01). Multivariate regression analysis corrected for confounding factors, showed that maternal overweight or obesity was significantly associated with high F2-IsoPs levels in SGA offspring (p<0.01). Maternal overweight or obesity is associated with increased OS in their SGA newborns. Data suggest the need of antioxidant protection for both mothers during pregnancy and infants soon after birth.
LETTER TO THE EDITOR

EXHALED BREATH TEMPERATURE MEASUREMENT:
INFLUENCE OF CIRCADIAN RHYTHM

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Exhaled breath temperature (EBT) is an expression of airway inflammation, an event that drives several lung diseases. The measurement of the exhaled breath temperature has recently been proposed as a popular tool in the diagnosis and monitoring of inflammatory lung diseases due to the fact that it is a non-invasive method. The influence of external factors on EBT, its reproducibility, and its sensitivity to treatment have already been explored. However, to reach clinical practice, EBT requires a complete validation that is still lacking. The aim of this study was to analyse the possible influence of an important internal variable, i.e the circadian rhythm on EBT values in a group of 24 healthy adult volunteers. We repeated measurement of EBT at different hours of the day: 8.00 AM, 12.00 AM, 4.00 PM, 8.00 PM and analysed the correlation with axillary temperature measurement at these times. The EBT resulted significantly different during daily measurements (8.00 AM vs 12.00 AM vs 4.00 PM vs 8.00 PM: 28.01±1.64°C vs 28.8±1.82°C vs 29.34±1.79°C vs 28.06±1.34°C). The highest EBT was reported at 4.00 PM and the lowest at 8.00 AM. For the first time we found an influence of the circadian rhythm on EBT. These data support the validation of the EBT necessary for its promotion in clinical practice.
LETTER TO THE EDITOR

MELANIN OF THE NIPPLE AREOLA COMPLEX

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Biological pigments or biochromes are ubiquitous in animals, plants, and simpler organisms such as fungi and bacteria. They serve a wide spectrum of functions from photosynthesis, camouflage, mimicry, photo protection from the environment to attracting mates. The human female nipple areola complex (NAC) is a highly-pigmented area. Currently, the prevailing theory as to the evolution of the pigmented human NAC is based on infant recognition of breast feeding latching zone; however, due to the protruding shape of the nipple and surrounding breast, the authors of this letter believe that the evolutionary advantage of the pigmented NAC has a direct physiological function, namely the initiation of involution at the end of the infant lactation period.
LETTER TO THE EDITOR

SUBSTANCE P EXPRESSION IN THE GINGIVAL TISSUE AFTER UPPER THIRD MOLAR EXTRACTION: EFFECT OF KETOPROFEN, A PRELIMINARY STUDY

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The aim of this study was to evaluate substance P (SP) levels and the effect of a non-steroidal anti-inflammatory drug (NSAID), ketoprofen, on SP in the pericoronal gingival tissue after extraction of upper third molars. A sample of 20 young non-smoking systemically healthy adults of both sexes, with a healthy upper third molar to extract for orthodontic purposes, was selected. After extraction, a sample of the gingival tissue of the pericoronal region was collected with a sterile scalpel, placed into test tubes and kept frozen at -20°C until the SP determination. SP levels were determined by using a commercially available enzyme immunoassay (ELISA) kit. The subjects were randomly divided into two groups: group 1 received a single dose of ketoprofen 30 minutes prior to the experimental procedure. The subjects of group 2 did not receive any kind of drug administration before extraction. The patients were asked to complete a diary on the postoperative pain. A relevant amount of SP was measured in all the gingival samples. No statistically significant difference could be detected in SP expression between the two groups. In group 1 pain appearance was significantly delayed (6.2±0.13 hours) in comparison with group 2 (3.95±0.2 hours). In this small selected group of subjects and limited study design, preventive administration of ketoprofen did not significantly affect the gingival levels of SP, the clinical recommendation emerging is that of NSAID administration postoperatively but before pain appearance in order to optimize the management of pain of the patient.
LETTER TO THE EDITOR

THE FINGERPRINT OF THE HUMAN GASTROINTESTINAL TRACT MICROBIOTA: A HYPOTHESIS OF MOLECULAR MAPPING

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The precise etiology of Inflammatory Bowel Disease (IBD) remains unclear and several factors are believed to play a role in its development and progression, including the composition of microbial communities resident in the gastrointestinal tract. Human intestinal microbiota are extensive with at least 15,000-36,000 bacterial species. However, thanks to the new development in sequencing and molecular taxonomic methodologies, our understanding of the microbiota population composition, dynamics, and ecology has greatly increased. Intestinal microbiota play a critical role in the maintenance of the host intestinal barrier homeostasis, while dysbiosis, which involves reduction in the microbiome diversity, can lead to progression of inflammatory disorders, such as IBD and colorectal cancer. It is hypothesized that fingerprinting characterization of the microbiota community composition is the first step in the study of this complex bacterial ecosystem and a crucial step in the targeted therapy. Molecular fingerprinting of human gastrointestinal tract microbiota could be performed by different techniques including the semi quantitation, 16SrRNA, the DNA- microarray as well as other relatively new methods which were developed to study many complex bacterial ecosystems. These techniques provide individual data and profiles, using fast and sensitive tools for the high taxonomic level fingerprint of the human intestinal microbiota and provide estimation of the relative presence of the microbial target groups within each individual. Such personalized information serves as a remarkable and unprecedented opportunity to improve targeted medical treatment and probably develop strategies to prevent disease.
LETTER TO THE EDITOR

CARDIOPATHY AND OSTEOPOROSIS:
THE EPIDEMIOLOGY IN A REGION OF ITALY

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Cardiopathies and osteoporosis are inter-related due to pathogenetic, hormonal, genetic features as well as an increased risk of fragility. An important feature is attributed to the process of atherosclerosis, which is responsible for an osteopenia effect and degeneration of vascular walls. To date the study populations have been limited. To verify the incidence of cardio-vascular disease in a larger osteoporotic population, we designed a retrospective clinical study analyzing the “Hospital Discharge Data” (HDD) in Apulia between 2006 and 2010. All patients over 55 years with a hospitalization for a fragility fracture and/or drugs prescription for osteoporosis were crossed with the diagnosis and/or drugs prescription for cardiovascular disease. We observed that between 2006 and 2010, in Apulia, 177,639 patients were hospitalized and diagnosed as having fragility fractures, 66.3% had a diagnosis of cardiopathy, with a higher prevalence in males and in patients over 80 years. The incidence of fractures were as follows: femur (51.9%), spine (20.2%), humerus (10.6%), forearm (9%), tibial pilon (7.2%) and tarsus and metatarsus (1.1%). Cerebrovascular diseases were the most frequent, followed by arrhythmias, heart failure and cardiomyopathies. In these patients, the most prescribed drugs were anti-coagulants, ACE inhibitors and diuretics. In patients affected by cerebral circulation disorder there is a greater propensity to fall and thus have a fragility fracture, particularly of the femur. The vertebral fracture, misdiagnosed in 60-70% of patients, may compromise the cardio-respiratory function of these patients. We verified a higher incidence of fragility fractures in patients who were prescribed certain categories of drugs for the treatment of cardio-vascular disease. This hypothesis is not supported by the literature, where contradictory results on the potential effects of these drugs on bone have been published. The high incidence of heart disease found in patients with fragility fractures supports the need for specific screening for osteoporosis in the population with cardio-circulatory pathology.
LETTER TO THE EDITOR

HELICOBACTER PYLORI IN PERIODONTAL POCKETS AND SALIVA: A POSSIBLE ROLE IN GASTRIC INFECTION RELAPSES

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It has been a long time since the scientific community started to speculate upon the presence of Helicobacter pylori (HP) in periodontal pockets as an extra-gastric reservoir responsible for gastric relapses after eradication therapy. The aim of this study is to evaluate the presence of oral HP in a group of patients who underwent examination for gastric infection. Sixty patients were enrolled in the current study, subdivided into two groups: 30 patients with a positive result for HP gastric infection with C-Breath Test Urea examination, and 30 patients with a negative result for HP gastric infection. Crevicular fluid and salivary samples were collected in a sterile tube and then sent to the laboratory for evaluation. Specimens were processed to quantify the levels of HP and bacterial load by real time PCR technique. Even though there was no statistically significant difference among the two groups (A vs B) with regard to the total amount of HP in saliva or in periodontal tissues, this study demonstrates that the oral cavity is an extra-gastric reservoir of HP when it is affected by periodontal disease, and that periodontal disease is correlated to gastric HP infection.