Many biomarkers are currently used for detecting different pathological conditions in paediatric practice. However, no single one can be considered as a gold standard for distinguishing between infectious, inflammatory, auto-immune diseases and malignancy. A biomarker is defined as “an indicator of normal biological processes, pathological processes, or pharmacological responses to therapeutic intervention that can be objectively measured” (1). Ideally, a biomarker should have high sensitivity, specificity, and predictive value, as well as being easily obtained also in preterm babies and infants, requiring a small amount of blood and being quickly measured. The available literature agrees on the fact that a “perfect” biomarker is not currently available in paediatric practice. Thus, clinicians must consider time by time the balance between marker characteristics and their sensitivity and specificity in different conditions. The development of new tests with higher sensitivity and specificity in distinguishing different pathological situations is auspicious. Moreover, future efforts should be focused on validating also in children the recently developed biomarkers including CD64, IL-27 and IL-8.

**USE, ABUSE AND MISUSE OF BIOMARKERS IN PAEDIATRICS**

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Currently, a gold standard for distinguishing between infectious, inflammatory, auto-immune diseases and malignancy in infants and children is not available. The combination of biomarkers with clinical features and other diagnostic tests could help clinicians in the diagnostic process. Ideally, a biomarker should have high sensitivity, specificity, and predictive value, as well as being easily obtained also in preterm babies and infants, requiring a small amount of blood and being quickly measured. The available literature agrees on the fact that a “perfect” biomarker is not currently available in paediatric practice. Thus, clinicians must consider time by time the balance between marker characteristics and their sensitivity and specificity in different conditions. The development of new tests with higher sensitivity and specificity in distinguishing different pathological situations is auspicious. Moreover, future efforts should be focused on validating also in children the recently developed biomarkers including CD64, IL-27 and IL-8.
In this report, we studied and provided an overview of the relationship between vitamin E and Type I allergies, asthma, and inflammatory states. The study was based on our 30 years of laboratory experience. In addition, a Pubmed search was conducted to review the effect of vitamin E in allergy and inflammation.

It is well known that to have a well-functioning immune status a correct nutritional status is necessary (1). Vitamin deficiencies are widespread and are a major global health problem worldwide. The World Health Organization estimates that more than 2 billion people are deficient in the most important vitamins, with a major burden in developing countries. Deficiency of vitamins is a risk factor for increased incidence of severity in infectious illnesses, cancer, autoimmune diseases, and inflammation.

Vitamin E is found in eight forms in nature which include four tocopherols (alpha, beta, gamma, and delta) and four tocotrienols (alpha, beta, gamma, and delta). The classic effect of vitamin E is to reduce and prevent oxygen damage to the tissue and is useful for the treatment of pain, inflammation, and allergic reactions. In addition to antioxidant activity, vitamin E also has a number of different and related functions. It protects against cancer, improves immune response, lowers the incidence of infectious diseases, cardiovascular diseases, and is protective in allergy and asthma risk, and other disorders. Vitamin E increases n-6 polyunsaturated fatty acid (PUFA) and decreases n-3 PUFA, an effect that diminishes asthma and allergic diseases. Moreover, vitamin E regulates vascular cell adhesion molecule-1 (VCAM-1)-dependent leukocyte migration through its oxidant and non-antioxidant effect. Furthermore, vitamin E modulates the endothelial function by altering VCAM-1-induced oxidative activation of endothelial cell PKCα. However, vitamin E is not consistently associated with asthma and/or allergy, and in some cases there are conflicting results on allergy and inflammatory diseases. The association of vitamin E and allergy appears to be very complex, and further study needs to clarify this dilemma.
The goal of this work was to assess the potential of T cells expressing Vγ9Vδ2+ T cell receptors (TCR, γ9δ2T cells) present in peripheral blood (PB) mononuclear cells (MC, PBMC) of glioblastoma multiforme (GBM) patients to act as anti-tumoral agents. We found that γ9δ2T cell levels were decreased in patients’ PB relative to a cohort of healthy donors (HD) (respectively 0.52±0.55%, n=16, vs 1.12±0.6%, n=14, p=0.008) but did not significantly correlate with postoperative survival (R=0.6, p=0.063). Importantly, however, the γ9δ2T cells could be expanded in vitro to consist 51±23% of the cultured lymphocytes (98% CD3+). This was achieved after 14 days of culture in medium containing the amino-bisphosphonate (ABP) Zoledronate (Zol) and interleukin (IL)-2, resulting in γ9δ2T cell-enriched lines (gdTCEL) similar to those of HD derived gdTCEL (54±19%). Moreover, gdTCEL from patients and HD mediated cytotoxicity to GBM-derived cell lines (GBMDCL), which was abrogated by immune-magnetic removal of the γ9δ2T cells. Furthermore, low level interferon (IFN) γ secretion was induced by gdTCEL briefly co-cultured with GBMDCL or autologous - tumor-derived cells, which was greatly amplified in the presence of Zol. Importantly, IFNγ secretion was inhibited by mevastatin but enhanced by cross-linking of butyrophilin 3A1 (CD277) on a CD277+ GBMDCL (U251MG) or by pretreatment of GBMDCL with temozolomide (TMZ). Taken together, these data suggest that γ9δ2T cells in PB of GBM patients can give rise to gdTCEL that mediate anti-tumoral activities.
THE ROLE OF NADPH-DERIVED REACTIVE OXYGEN SPECIES PRODUCTION IN THE PATHOGENESIS OF ENDOMETRIOSIS: A NOVEL MECHANISTIC APPROACH

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Endometriosis is defined as endometriotic tissue growing outside the uterine cavity. It is a common gynecological disorder in women of reproductive age and is associated with chronic pelvic pain and infertility. Despite several studies and theories to explain its cause, the exact pathogenesis of endometriosis remains unclear. Retrograde menstruation is the most plausible theory, however, it is not exclusive. The disparity between the actual prevalence of retrograde menstruation and the prevalence of endometriosis suggests that other factors may determine the susceptibility to endometriosis development. Oxidative stress has been associated with endometriosis. This study aimed to explore the role of NADPH oxidase family in the production of reactive oxygen species (ROS) and to determine whether ROS induce the proliferation of endometriotic implants via mammalian target of rapamycin (mTOR) signaling. Anonymous endometriotic tissue samples were collected from women undergoing laparoscopy for endometriosis. The samples were stained with dihydroethidium and fluorescent images of the slides were taken to detect ROS production. After extraction of RNA from the samples and c-DNA generation, quantitative real-time PCR, protein extraction and Western blot were performed to study gene and protein expression of NADPH oxidase 1 (NOX 1), mTOR and fibronectin. The results showed an increase in ROS levels and NOX 1 gene and protein expression in the endometriotic tissues compared to the normal surrounding tissue control. Also, mTOR and fibronectin, gene expression was found to be increased. Up regulation of NOX at gene and protein level leads to increased production of ROS in the endometriotic tissue, which in turn causes proliferation of the ectopic tissue via alteration of the mTOR signaling pathway. Increased fibronectin gene expression points towards tissue injury in endometriosis as compared to the normal surrounding tissue. This manuscript adds a new insight into the pathogenesis of endometriosis and serves as a background for development of new treatments for the disease-associated pain and infertility.
PENEHYCLIDINE HYDROCHLORIDE POSTCONDITIONING AMELIORATES CEREBRAL ISCHEMIA-REPERFUSION INJURY: CRITICAL ROLE OF MITOCHONDRIAL ATP SENSITIVE POTASSIUM CHANNEL

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Cerebral ischemia/reperfusion (CI/R) leads to disability and death worldwide. However, limited approaches have been made in developing therapies to decrease the detrimental effects of CI/R. In the present study, we evaluated the effects of penehyclidine hydrochloride (PHC) postconditioning on CI/R injury and elucidated the underlying mechanisms. In CI/R rats, we showed that PHC postconditioning could effectively inhibit I/R-induced brain infarction and edema, and deficit of neurological function. In addition, PHC postconditioning significantly inhibited I/R-induced increase of proinflammatory cytokines and TUNEL-positive cell numbers. Moreover, the opening of mitochondrial permeability transition pore (mPTP) and oxidative stress resulting from I/R were suppressed notably by PHC postconditioning, as evidenced by increased absorbance at 540 nm in Ca2+-induced mitochondrial swelling test and increased SOD activity and decreased ROS and MDA level. 5-hydroxydecanoate (5-HD), a specific inhibitor of MitoKATP, was used to evaluate the role of MitoKATP in the neuroprotective effect of PHC postconditioning. The results showed that 5-HD could markedly suppress PHC postconditioning-caused inhibition of brain infarction and edema, deficit of neurological function, inflammation, apoptosis, opening of mPTP and oxidative stress induced by CI/R. The results demonstrated that PHC postconditioning could protect against I/R injury in brain through the inhibition of oxidative stress, mPTP opening, apoptosis and inflammation. Activation of MitoKATP was critical for PHC postconditioning-exhibited neuro-protective effects against I/R injury. These findings may provide a novel foundation for therapeutic strategies targeting cerebral protection against I/R damage.
A key issue in the treatment of acute myeloid leukemia (AML) is the development of drug resistance to chemotherapeutic agents. Overexpression of myeloid cell leukemia-1 (Mcl-1), an anti-apoptotic protein, is associated with tumor progression and drug resistance in leukemia and several cancers. The purpose of this study was to investigate the effect of specific Mcl-1 small interference RNA (siRNA) on the proliferation and chemosensitivity of U-937 AML cell to etoposide. The siRNA transfection was conducted using Lipofectamine™ 2000. Quantitative real-time RT-PCR (qRT-PCR) and Western blot analysis were employed to measure the expression levels of mRNA and protein, respectively. To evaluate tumor cell growth after siRNA transfection, Trypan blue exclusion assay was conducted. The cytotoxic effects of siRNA and etoposide were determined using MTT assay on their own and in combination. DNA-histone ELISA and annexin-V/FITC assays were performed to study the apoptosis. Mcl-1 siRNA transfection significantly blocked the expression of Mcl-1 mRNA and protein in a time-dependent manner, leading to a strong growth inhibition and enhanced apoptosis (P<0.05). Furthermore, pretreatment with Mcl-1 siRNA, synergistically enhanced the cytotoxic and apoptotic effects of etoposide (P<0.05). Our results demonstrated that Mcl-1 plays a fundamental role in the survival and resistance of U-937 cells to etoposide. Therefore, Mcl-1 can be considered an attractive target in gene therapy of AML patients and siRNA-mediated silencing of this gene may be a novel strategy in AML treatment.
This study discusses the changes of T helper cells (Th cells) of patients who received different anesthesia methods in liver cancer resection. We selected 122 patients who were diagnosed with hepatocellular carcinoma and underwent liver cancer resection and divided them into a general anesthesia combined with epidural anesthesia group (group A) and general anesthesia group (group B). Peripheral blood was collected to detect Th cells on the day of surgery, and on the second and seventh days after surgery. Th1 and Th2 cell frequency and mRNA expression of interferon-γ (IFN-γ) of all patients significantly rose on the second day but recovered to the previous level on the seventh day. Th1/Th2 increased remarkably on the seventh day compared to the second day. Compared to the day of surgery, Th17, regulatory T (Treg) cells as well as mRNA expression of interleukin-17 (IL-17) and FoxP3 had no obvious changes on the second day, but dramatically declined on the seventh day. Compared to group B, Th1 cell frequency and Th1/Th2 in group A had a slight increase on the second day, and a remarkable increase on the seventh day; but Th2, Th17 and Treg cell frequency in group A slightly decreased on the second day and remarkably decreased on the seventh day. mRNA of IFN-γ, cytokine levels and IFN-γ/IL-4 of group A were all higher than group B on the seventh day, while mRNA of IL-17, concentration of IL-17 as well as concentration of transforming growth factor-β1 (TGF-β1) in group A were much lower than group B. These findings suggest that improving antitumor activity of Th cells can benefit patients who receive liver cancer resection.
Phosphatase and Tensin Homolog deleted on chromosome 10 (PTEN) gene is one of the most important tumor suppressor genes which is involved in the regulation of many signaling cascades (AKT/PKB and MAPK). Subtle changes in its activity lead to cancer susceptibility or aggressive tumor behaviour. Despite the diversity of mechanisms leading to PTEN inactivation, it is frequently associated with a decreased or complete loss of protein expression. About 20% decrease in PTEN expression could lead to the development of cancer. There have been no objective, quantitative methods of PTEN expression assessment that allow to measure the subtle variations of the protein concentration in a tissue-contextual manner. A new quantitative algorithm of immunostaining evaluation based on combination of color deconvolution and relative chromogen signal intensity was used in the study. The proposed algorithm was implemented in the popular ImageJ image analysis software and positively verified in cancer cell lines and tissue models as well as in the tissue samples of colorectal cancer (CRC) patients. The proposed quantitative method of PTEN expression assessment creates an alternative to currently available subjective methods and forms the basis for inter-case and inter-tissue comparisons. Using the algorithm it would be possible to identify three groups of patients with advanced colorectal cancer which could significantly differ in the overall survival. The research should be continued.
INFLUENCE OF CONTINUOUS INTERVENTION ON GROWTH AND METASTASIS OF HUMAN CERVICAL CANCER CELLS AND EXPRESSION OF RNAmiR-574-5p

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This study was carried out to acquire solid evidence that some common treatments could affect micro ribonucleic acids (miRNAs) by revealing the regulatory effect of genes, so as to provide a reference for further exploration of the prevention and treatment of cervical cancer. Nude mouse tumorigenicity assay was used to study the effect of inhibiting miR-574-5p on development and tumorigenic ability of Henrietta Lacks (HeLa) tumor. Cell wound scratch assay, flow cytometry and real-time quantitative polymerase chain reaction (RT-qPCR) were adopted to study the effects of anoxia and temperature, etc., on expression of miR-574-5p and QKI in HeLa as well as on the clone and migration ability of cells, to provide prevention and treatment of cervical cancer with new ideas and evidence. The results demonstrated that cervical cancer tissues had a significantly increased miR-574-5p expression compared with para-carcinoma tissues; conversely, Gomafu, overall QKI (pan-QKI) and QKI-5 messenger ribonucleic acid (mRNA) and protein expression all decreased. Part of the common nursing methods had a certain influence on miR-574-5p expression, HeLa reproduction and metastasis, and even cell cycle. For example, ultraviolet (UV) irradiation was effective in decreasing miR-574-5p expression of HeLa and inhibiting cell migration; severe hypoxia significantly decreased the survival rate of HeLa, leading to the increase of programmed death percentage and cell ratio in G2/M phase as well as the decrease of cell ratio in G1 phase. Incubation at different temperatures also affected miR-574-5p expression and cell proliferation. Thus, it can be known that miR-574-5p, Gomafu and QKI expression in cervical cancer tissues and para-carcinoma tissues are significantly up-regulated or down-regulated. Some treatments, such as UV irradiation, hypoxia, incubation temperatures, etc., can affect miR-574-5p expression and HeLa proliferation as well as metastases in different degrees. These findings provide a reference and basis for further study.
This study was carried out to investigate the expression changes of RanBP9 in tissue specimens and osteosarcoma cell strains and preliminarily explore its mechanism in osteosarcoma, so as to provide a theoretical foundation for follow-up experiments. The expression of RanBP9 in human osteosarcoma tissue specimens was detected by immunohistochemistry and the expression of RanBP9 messenger ribose nucleic acid (mRNA) in osteosarcoma cell strains was detected in real-time with polymerase chain reaction (PCR), and finally the expression of RanBP9 protein in osteosarcoma cell strains was detected by immunofluorescent staining and Western blot. Results demonstrated that RanBP9 was widely expressed in tissues, but also highly expressed in cells; moreover, the expression of RanBP9 was mainly concentrated in cytoplasm and nucleus, and partial expression was found in cell membrane. Thus, it can be concluded that RanBP9 is positively expressed in bone tumor tissues and cell strains.
ADIPOSE-DERIVED MESENCHYMAL STROMAL (STEM) CELLS DIFFERENTIATE TO OSTEOBLAST AND CHONDROBLAST LINEAGES UPON INCUBATION WITH CONDITIONED MEDIA FROM DENTAL PULP STEM CELL-DERIVED OSTEOBLASTS AND AURICLE CARTILAGE CHONDROCYTES

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The potential of adipose-derived mesenchymal stromal (stem) cells (ADSCs) to differentiate into either osteoblasts or chondrocytes is controversial. In this study we investigated the multicapacity potential of ADSCs to differentiate towards adipocyte, osteoblast, and chondrocyte lineages when cells are seeded onto plastic in comparison with incubation with conditioned media (CM) obtained from differentiated cell types. ADSCs, obtained from liposuctions, were characterized for mesenchymal and hematopoietic markers by cytofluorimetry. Their differentiation capacity towards adipocytes, osteoblasts, and chondrocytes was investigated by histochemistry methods (Oil-Red-O staining, Safranin O and Alizarin Red staining, respectively). Dental pulp stem cells (DPSCs) and dedifferentiated auricle derived-chondrocytes were differentiated towards osteoblastic and chondrocytic lineages respectively, and the CM obtained from these cultures was used to induce differentiation of ADSCs. ADSCs were positive for mesenchymal markers (CD29, CD105, CD73, CD44), but not for hematopoietic lineage markers (CD14, CD34, CD45), and this behavior was conserved from the isolation up to the fifth passage. While ADSCs were readily differentiated in adipocytes, they were not towards chondrocytic and osteoblastic lineages, a behavior different from that of bone marrow-derived MSCs that differentiated into the three lineages at two weeks post-induction. Only ADSCs treated with CM from cultured chondrocytes and DPSCs, produced glycosaminoglycans and mineralized matrix. These results indicate that ADSCs need growth/morphogenic factor supplementation from the tissue environment to be appropriately differentiated to mesodermic lineages.
LETTER TO THE EDITOR

DECREASED SERUM LEVELS OF T-CELL IMMUNOGLOBULIN MUCIN-1 AND T-CELL IMMUNOGLOBULIN MUCIN-3 IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS

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This study aims to investigate the serum T-cell immunoglobulin mucin (TIM)-1 and TIM-3 levels in systemic lupus erythematosus (SLE) patients and analyze their correlations with clinical features. Sixty-one SLE patients and 69 healthy controls were enrolled, serum TIM-1 and TIM-3 levels were detected by ELISA. Results demonstrated that both serum TIM-1 and TIM-3 levels were significantly decreased in SLE patients compared with controls (both P<0.05). Lower serum TIM-3 levels in SLE patients with nephritis were observed when compared to those without nephritis, with a marginal statistical significance (P=0.059). However, both serum TIM-1 and TIM-3 levels had no significant correlation with SLE disease activity (both P>0.05). In summary, decreased serum TIM-1 and TIM-3 levels, and association of TIM-3 with nephritis suggest their possible role in the development and pathogenesis of SLE. However, further studies are needed to confirm these preliminary results.
LETTER TO THE EDITOR

**DOPPLER LASER IMAGING PREDICTS RESPONSE TO TOPICAL MINOXIDIL IN THE TREATMENT OF FEMALE PATTERN HAIR LOSS**

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Topical minoxidil is the only drug approved by the US FDA for the treatment of female pattern hair loss. Unfortunately, following 16 weeks of daily application, less than 40% of patients regrow hair. Several studies have demonstrated that sulfotransferase enzyme activity in plucked hair follicles predicts topical minoxidil response in female pattern hair loss patients. However, due to patients’ discomfort with the procedure, and the time required to perform the enzymatic assay it would be ideal to develop a rapid, non-invasive test for sulfotransferase enzyme activity. Minoxidil is a pro-drug converted to its active form, minoxidil sulfate, by sulfotransferase enzymes in the outer root sheath of hair. Minoxidil sulfate is the active form required for both the promotion of hair regrowth and the vasodilatory effects of minoxidil. We thus hypothesized that laser Doppler velocimetry measurement of scalp blood perfusion subsequent to the application of topical minoxidil would correlate with sulfotransferase enzyme activity in plucked hair follicles. In this study, plucked hair follicles from female pattern hair loss patients were analyzed for sulfotransferase enzyme activity. Additionally, laser Doppler velocimetry was used to measure the change in scalp perfusion at 15, 30, 45, and 60 minutes, after the application of minoxidil. In agreement with our hypothesis, we discovered a correlation (r=1.0) between the change in scalp perfusion within 60 minutes after topical minoxidil application and sulfotransferase enzyme activity in plucked hairs. To our knowledge, this is the first study demonstrating the feasibility of using laser Doppler imaging as a rapid, non-invasive diagnostic test to predict topical minoxidil response in the treatment of female pattern hair loss.
LETTER TO THE EDITOR

EFFECTS OF SODIUM FERROUS CHLOROPHYLL TREATMENT ON ANEMIA OF HEMODIALYSIS PATIENTS AND RELEVANT BIOCHEMICAL PARAMETERS

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This study explores the effects of sodium ferrous chlorophyll treatment on the anemia of maintenance hemodialysis (MHD) patients, as well as the relevant biochemical parameters. We selected 72 patients who had received regular MHD treatment two or three times a week for more than 3 months in the Hospital of Traditional Chinese Medicine of Zhengzhou City of Henan Province from March 2014 to March 2015. They were equally divided into a treatment group and a control group. Haemoglobin (HB) and hematocrit (HCT) of the treatment group increased significantly after treatment (p<0.01), but less in the control group (p<0.05); Also serum ferritin (SF) and transferrin saturation (TAST) of the treatment group increased significantly after treatment (p<0.01); SF of the control group also increased significantly (p<0.01) and TAST of the control group increased (p<0.05) but less than in the treatment group. No obvious changes of serum creatinine (SCR), blood urea nitrogen (BUN), C-reactive protein (CRP) and superoxide dismutase (SOD) were found in either groups after treatment (p>0.05). Albumin (ALB) dosage of the treatment group increased after treatment (p<0.05) while hemopoietin (EPO) decreased significantly (p<0.01). ALB and EPO of the control group had no obvious changes after treatment (p>0.05). ALB level of the treatment group increased more significantly than in the control group (p<0.05), while EPO dosage decreased more significantly than in the control group (p<0.05). Therefore, the combination of conventional western medicine and sodium ferrous chlorophyll can effectively improve anemia conditions of MHD patients and their quality of life.
LETTER TO THE EDITOR

CURATIVE EFFECT OF MECHANICAL HEART VALVE REPLACEMENT AND ANTICOAGULANT THERAPY AFTER SURGERY

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This study was carried out to determine the curative effect of low-intensity anticoagulant therapy by observing the oral administration of warfarin (anticoagulant therapy) on patients who had undergone mechanical heart valve replacement (MHVR) surgery with subsequent anticoagulation complications. Fifty patients who underwent MHVR in the Second Affiliated Hospital of Harbin Medical University and 52 patients in the Cardiovascular Surgery of Daqing Oilfield General Hospital between January 2013 and January 2015 were selected (63 males and 39 females, ages 26-77 years). They took warfarin after treatment and were followed-up by means of outpatient review and telephone after leaving the hospital. The effect of warfarin and the occurrence of anticoagulation complications were analyzed. The operations lasted 230±106 min, extracorporeal circulation for 110±50 min and aorta occlusion for 82±23 min. During post-operation 3 patients developed skin purpura and one patient died. During follow-up we found 3 cases of anemia caused by excessive menstruation, 4 cases of hematuresis, 3 cases of peated epistaxis, 1 case of gastrointestinal bleeding, 1 case of cerebral hemorrhage, 1 case of embolism in the lower limbs and 1 case of cerebral infarction, although they all improved or were totally cured. Therefore, the incidence of complications can be reduced significantly by the correct administration of warfarin as well as timely monitoring of interference factors after MHVR.
LETTER TO THE EDITOR

C-REACTIVE PROTEIN CORRELATES TO FUNCTIONAL SCORE SYSTEMS OF PATIENTS IN GENERAL SURGICAL INTENSIVE CARE UNIT

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The aim of our study was to document the relationship between inflammation indicated by the serum levels of widespread acute-phase proteins and scoring systems used in assessing patient’s functional condition. We therefore assessed serum levels of c-reactive protein (CRP) and four clinical tests [acute physiology and chronic health evaluation (APACHE) II score and sequential organ failure assessment (SOFA) score, functional independence measure (FIM) and Barthel index of activities of daily living (BI)]. We tested the hypothesis that results of functional tests correlate with infections and consecutively influence the length of stay (LOS) in non-specialized general intensive care units (ICUs). One hundred and twenty patients from non-specialized general ICU were enrolled in the study group. We scored patients consecutively on admission (APACHE II-initial; SOFA-initial, FIM initial and BI initial) and on the fifth day of stay (APACHE II-5th day; SOFA-5th day, FIM 5th day and BI 5th day). At the same time points, serum levels of CRP were assessed. FIM index did not correlate to the CRP at any time point (FIM- initial=0.027; FIM- 5th day=0.024; respectively) at discharge, total number of hospital days, i.e. LOS was recorded. Serum CRP values and APACHE II, SOFA, and BI scores correlated positively both on admission and on the fifth day of stay in the general surgical ICU (APACHE II- initial r=0.289; SOFA- initial r=0.305; BI - initial r=0.291; APACHE II 5th day r=0.728; SOFA-5th day r=0.725; BI 5th day r=0.792). Therefore, pending further studies, functional scoring in general surgical ICUs might prove useful in assessing LOS.
LETTER TO THE EDITOR

EFFECTS OF WUZHI CAPSULE ON BLOOD CONCENTRATION OF TACROLIMUS AFTER RENAL TRANSPLANTATION

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This study aimed to investigate the effects of Wuzhi capsule on blood concentration of tacrolimus after renal transplantation. Sixty patients after allogenic renal transplantation were enrolled in this study and randomly divided into an experimental group and a control group. One oral Wuzhi capsule was taken in the morning and evening for patients in the experimental group, while none was given to the control group, maintaining the trough blood concentration of tacrolimus in the normal range. After 3 weeks, the changes of tacrolimus dosage and hepatorenal function in the two groups were compared. Comparisons of drug dosage and blood concentration C0 value of tacrolimus before initiating the experiment showed that there was no statistically significant difference (P > 0.05) between the two groups. The differences of blood concentration of tacrolimus and hepatorenal function for patients in both two groups after 3 weeks’ treatment also showed no statistical significance (P > 0.05), whereas a statistically significant decrease was demonstrated in the tacrolimus dosage of the Wuzhi capsule group compared with that of the control group (P = 0.0083). After renal transplantation, Wuzhi capsules were added so as to enable tacrolimus to reach a suitable blood concentration, which can prevent the occurrence of renal transplantation rejection, thus alleviating the economic burden of patients and producing larger social benefits.
LETTER TO THE EDITOR

LIPEDEMA – LACK OF EVIDENCE FOR THE INVOLVEMENT OF TYROSINE KINASES

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Lipedema is a chronic disorder characterized by abnormal distribution of subcutaneous adipose tissue on the proximal extremities, pain and capillary fragility. Its etiology is unknown but in analogy to central obesity chronic low-level inflammation in adipose tissue has been suggested. There seems to be an increased propagation of pre-adipocytes into mature adipocytes contributing to the massive enlargement of subcutaneous adipose tissue. We investigated whether tyrosine kinases might be involved. Proteins from adipose tissue harvested during microcannular tumescent liposuction in lipedema and in lipomas were subjected to 10% polyacrylamide-gel, transferred to a polyvinylidenfluorid membrane and immunoblotted with indicated P-Tyr-100 antibody followed by enhanced chemiluminescence reaction. A survey of all blots did not reveal tyrosine-phosphorylated proteins with a molecular weight > 100 kD in lipedema tissue and controls. These investigations suggest absence of activated growth factor receptors. Some signals indicating unspecific tyrosine-phosphorylation of smaller proteins were detected in tissue of both lipedema patients and controls. The present data suggest that there is no enduring activation of tyrosine kinase pathways of adipogenesis in lipedema as in lipoma controls.
LETTER TO THE EDITOR

EXPRESSION PROFILES OF SMAD1 PROTEIN IN LUNG CANCER TISSUES AND NORMAL TISSUES AND ITS EFFECT ON LUNG CANCER INCIDENCE

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The aim of this study is to detect the expression profiles of Smad1 protein in lung cancer tissues and normal tissues to investigate its effect on the incidence of lung cancer. The expression profiles of Smad1 protein in 60 cases of lung cancer tissues (lung cancer group), 25 cases of normal alveolus tissues (alveolus control group) and 29 cases of normal bronchial tissues (bronchial control group) were detected by adopting immunohistochemical analyses, and their relationships with clinicopathologic data were analyzed. The expression of Smad1 protein in the lung cancer group and the lung squamous cell carcinoma group was significantly lower than that in the alveolus control group and the bronchial control group (P < 0.01). The expression of Smad1 protein in the lung adenocarcinoma group was significantly lower than that in the alveolus control group and the bronchial control group (P < 0.01); The expression Smad1 protein showed a significant correlation with lung cancer differentiation and lymphatic metastasis (P < 0.05), but not with genders, ages, tumor sizes and histological types of lung cancer patients (P > 0.05).
LETTER TO THE EDITOR

TOTAL HIP REPLACEMENT FOR DEVELOPMENTAL DYSPLASIA OF HIP AND POSTOPERATIVE NURSING

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This study was designed to determine the clinical effect of total hip replacement for the treatment of developmental dysplasia of the hip (DDH) and analyze the postoperative nursing. Sixty patients (78 hips) aged 18-75 years (average 58.6±2.31 years) who received total hip replacement for treatment of DDH at the Zhengzhou People’s Hospital, Henan, China, from April 2013 to June 2015 were selected as research subjects. Twenty-four patients were male (30 hips) and 36 were female (48 hips). Of the 60 patients, according to Crowe typing, 24 were type I (30 hips), 26 were type II (34 hips), 6 were type III (8 hips) and 4 were type IV (6 hips). According to the Harris hip score system, the score of all hips was 39.46±3.56 points average (18-56 points) before treatment and resulted as 89.60±4.25 points (79-98 points) at the last follow-up, showing a statistically significant difference (P<0.05). Complications such as wound infection, dislocation, fracture of femoral shaft, femoral nerve and injury of sciatic nerve were not found after treatment. A total of 48 cases (58 hips) obtained excellent curative results (93.33% recovery), 8 cases (14 hips) good (92.31% recovery), and 4 cases (6 hips) medium. Total hip replacement proved to be effective in treating DDH and secondary osteoarthritis. Moreover, soft tissue release and an optimum degree recovery of anatomic form and physiological function of the diseased hip is an important basis for reconstructing the acetabulum and stabilizing acetabulum prosthesis.
By detecting expression of interleukin (IL)-17A, IL-10 and interferon-γ (IFN-γ) in serum of inflammatory bowel disease (IBD) patients, this study aims to analyze the effects of these factors on the pathogenesis of IBD. According to illness status, selected patients were divided into Crohn’s disease (CD) group (28 patients), ulcerative colitis (UC) group (74 patients) and normal control group (36 patients); enzyme-linked immunosorbent assay (ELISA) was used to detect IL-17A, IL-10 and IFN-γ levels in serum; immunohistochemical assay was used to detect local IL-17A expression in the colonic mucosa of each group. Clinical results showed that IL-17A content of the UC group and CD group was significantly higher than that of the normal control group (p < 0.05); IL-17A content of the CD group was higher than that of the UC group (p > 0.05). The UC group had the highest IL-10 content, and the difference between the UC group and other two groups had statistical significance (p < 0.05); the difference of IL-10 content between UC group and normal control group had no statistical significance (p > 0.05). There was no significant difference of IFN-γ level between the CD group and the UC group and normal control group (p > 0.05), and no significant difference of IFN-γ level was shown between the CD group and the UC group (p > 0.05). Both the CD and UC groups showed IL-17A positive staining in cytoplasm of lymphocyte, however no positive staining was found in any layer of intestinal mucosa of the normal control group. IL-17A was locally expressed in the colon of IBD patients in remission; furthermore, it also had high expression in serum; thus, there still existed high expression of pro-inflammatory factor, which might be related to relapse of IBD. Therefore, prevention of IL-17A may become a feasible therapy for IBD in the future.
This study was designed to determine the effects and compare laparoscopic intervention and open surgery in treating severe acute pancreatitis (SAP) and its relative aftercare, to improve the overall treatment of SAP. Ninety patients with SAP were enrolled from the 2nd Affiliated Hospital of Harbin Medical University from 2008 to 2014 and divided into a laparoscopic intervention group (25 cases) and an open surgery group (65 cases). Patients were asked for clinical symptoms, general hospital information, laboratory inspection, imageological examination, local and systemic complications, treatment and outcome. SAP patients’ relevant clinical indicators were compared between the two groups before and after the operation. Results revealed that there was no statistical significance in lesion range and main scoring indexes for reflecting the severity of the disease. For both groups statistical significance was found in blood loss (285.3±79.8 mL vs 362±91.6 mL), intensive care unit (ICU) monitoring time (9.04±6.35 d vs 12.48±8.34 d) and service time of breathing machine (9.47±6.24 d vs 12.98±8.25 d), and the laparoscopic operation group was superior to the open surgery group (p < 0.05). Besides, the laparoscopic operation group was also superior to the open surgery group in demand for main analgesics one week after the operation, as well as for recovery rate and incidence of complications (p < 0.05). Thus, it can be concluded that patients undergoing laparoscopic intervention are less likely to develop pulmonary infection and more likely to be cured in comparison with patients who receive open surgery. In addition, laparoscopic intervention results in less damage, lighter pain and fewer complications compared with open surgery.
The aim of this research was to study the clinical significance and expression of CD4+CD25+ regulatory T cells (Tregs) and p3Forkhead transcription factor-3 (Foxp3) in peripheral blood of patients with gastric carcinoma (GC) and to investigate the effects in the occurrence and development process of GC, to further comprehend their clinical values, and provide a theoretical basis for the early diagnosis and immunotherapy of GC. The expression levels of CD4+CD25+Foxp3+Tregs in GC patients, at TNM staging, differentiated degree, lymphatic metastasis, cancer sites and cancer diameter of GC, were analyzed within the groups. The comparison of the expression levels of CD4+CD25+Foxp3+Tregs in peripheral blood between the GC group and the healthy control group showed a statistically significant difference. At TNM staging within the groups, pairwise comparisons of the expression levels of CD4+CD25+Foxp3+Tregs indicated that differences among the stage I+II group, stage III group and stage IV group were statistically significant. The expression levels of CD4+CD25+Foxp3+Tregs are closely relative to the occurrence and development of GC, providing theoretical bases and evidence for the early diagnosis, prognosis evaluation and immunotherapy of GC.
LETTER TO THE EDITOR

CLINICAL EFFECT OF INTRAVITREOUS INJECTION OF TRIAMCINOLONE ACETONIDE IN TREATING CYSTOID MACULAR EDEMA

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Cystoid macular edema (CME), a commonly seen sign for multiple fundus diseases, is able to induce visual deterioration. The incidence rate of CME is constantly increasing; however, the existing clinical treatments cannot achieve satisfactory curative effects. To explore the curative effect of intravitreous injection of triamcinolone acetonide (TA) in treating CME, this study carried out a clinical test on 39 patients (42 eyes) from The First Affiliated Hospital of Zhengzhou University who developed CME induced by central retinal vein occlusion (CRVO). All 42 eyes received intravitreous injection of 40 mg/ml TA (0.1 ml) and then were followed up for 11-23.5 months. Eyes were examined by slit-lamp microscope, fundus fluorescein angiography (FFA) and optical coherence tomography (OCT) and best corrected visual acuity (BCVA), and intraocular pressure (IOP) of those eyes were detected before and after treatment. Average vision of eyes was 0.1 before treatment, and the vision improved in one month (vision ≥ 0.2: 100%; vision ≥ 0.5: 42.9%) and three months (vision ≥ 0.2: 64.3%; vision ≥ 0.5: 21.4%) after treatment; but as time went on, the vision of some patients declined; at the last follow-up, patients with vision ≥ 0.2 accounted for 28.6% and those with vision ≥ 0.5 accounted for 7.1%; compared to before treatment, 71.4% patients had improved vision and the remaining 28.6% had declined vision. Some patients were observed with high IOP during treatment, and 7 eyes were found with secondary cataract in posterior capsule of lens at the last follow-up. Intravitreous injection of triamcinolone acetonide proved to have significant short-term curative effect on CEM which is non-sensitive to conventional therapies, but it is likely to induce high IPO and posterior capsular opacification.
LETTER TO THE EDITOR

ULTRASOUND DIAGNOSIS IN GYNECOLOGICAL ACUTE ABDOMEN

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As ultrasound diagnosis is applied more frequently in gynecological acute abdomen, we carried out this study to discuss the diagnosis of endometriosis with ultrasound imaging and analyze the efficacy of microRNA used for diagnosing endometriosis and evaluating prognosis by comparing differentially expressed microRNA in subjects with or without endometriosis. Ultrasound examination results and clinical pathological examination results of 60 cases of gynecological acute abdomen were compared. Blood samples were collected from patients with endometriosis. Of 60 cases, 38 cases recurred in 20 months after surgery and the remaining 22 cases had no recurrence in the 30-month follow-up. Additionally, blood was collected from 40 patients without endometriosis as control. Then total RNA was extracted from these blood samples to determine the difference of expression of microRNA (miR-17-5p, miR-20a, miR-199a and miR-141). Compared to healthy subjects, the endometriosis patients showed significantly increased expression of miR-199a, but the expression of miR-17-5p, miR-20a and miR-141 had an obvious decrease; the differences were statistically significant (p < 0.01). For recurred cases, miR-199 showed a remarkably high expression and miR-17-5p and miR-20a expressed significantly low.
This study explores the correlation between molybdenum target (mo-target) mammography signs and pathological prognostic factors of breast cancer. We selected 320 breast cancer patients who were treated between January 2014 and January 2015; using single-factor and multiple-factor logistic regression method, we made correlation analysis on their clinical features, pathological features and mo-target mammography signs. Among mo-target mammography signs, lumps accompanied with calcification and blurry edge were associated with high histologic grades; lumps accompanied with calcification and clear edge were associated with Ki-67 positive; compared with the patients who had lumps with non-stellate edges, positive rates of estrogen receptor (ER) and progesterone receptor (PR) were significantly higher for the patients who had lumps with stellate edges (p < 0.01), while positive rate of human epidermal growth factor receptor-2 (HER-2) and tumor proliferative activity were significantly lower (p < 0.05, p < 0.01). According to the study, we can conclude that mo-target mammography signs mainly include lumps and calcification. Mo-target mammography can improve the accuracy of diagnosis and reduce misdiagnosis or missed diagnosis. Part of mo-target mammography signs are associated with clinical pathology prognostic factors; by grasping the relation, breast cancer patient conditions are expected to be relieved.
INTERNAL AND PARENTERAL NUTRITION ON IMMUNE FUNCTIONS OF NEUROCRITICALLY ILL PATIENTS

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This study was designed to investigate the influence of early enteral and parenteral nutrition on immune functions of neurocritically ill patients. Patients who were admitted to the neurological intensive care unit (ICU) of The Second Affiliated Hospital of Zhengzhou University between May 2014 and January 2015 were selected. They had been hospitalized for more than one week and received enteral nutrition (EN) via nasogastric tube, with a gross energy of 25 kcal/(Kg · d). Patients were divided into EN group, EN + early PN (EPN) group and EN + supplemental PN (SPN) group according to the time of PN support. Differences in patients’ general information and changes in serum protein and immune indexes were compared between the three groups. On admission, patients’ Glasgow coma scale (GCS), age, immune functions and protein indexes had no obvious differences between the three groups. After nutritional support, serum protein level reduced in the EN group while prealbumin (PALB) and retinol binding protein (RBP) increased in the EN + EPN group and EN + SPN group after one week of admission to hospital, and the differences were statistically significant (p < 0.05). Total protein (TP), albumin (ALB), PALB and transferrin (TRF) increased significantly in the EN + EPN group and EN + SPN group compared with the EN group (p < 0.05); before and after treatment, an increase was found in ALB in the EN + EPN group in comparison with EN + SPN group, with a notable difference (p < 0.05); C3, C4, immunoglobulin M (IgM) and immunoglobulin A (IgA) increased in the EN + SPN group after nutritional support compared with before treatment, and the difference was statistically significant (p < 0.05). Moreover, immunoglobulin G (IgG) and IgA in the EN + EPN group increased after nutritional support comparing to prior to nutritional support, and the difference was statistically significant (p < 0.05). After nutritional treatment, IgA and IgG increased markedly in the EN + EPN group, and there was a statistical significance between the groups (p < 0.05); the EN + EPN group and EN + SPN group exceeded the EN group in total lymphocyte count (TLC), and the difference had a statistical significance (p < 0.05). These results demonstrate that neurocritically ill patients achieving the target energy can avoid malnutrition and immunodeficiency; serum protein decrease can cause malnutrition after one week of EN support; and enteral and parenteral nutrition can improve nutritional and immune indicators of neurocritically ill patients in the acute phase. In addition, EPN is more likely to improve malnutrition and immune functions of critical patients than SPN.
LETTER TO THE EDITOR

CHANGES OF HMGB1 EXPRESSION ON ANGIOGENESIS OF OVARIAN CANCER AND ITS MECHANISM

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This study was designed to investigate the changes of high-mobility group box-1 (HMGB1) expression and its effects on regulating the angiogenesis of ovarian cancer. HMGB1 eukaryotic expression plasmid and artificially synthesized small interfering ribose nucleic acid (siRNA) were constructed to transfer SKOV3 cell, respectively. Western blot was adopted to investigate the changes of HMGB1, CXCL12 and vascular endothelial growth factor (VEGF) before and after the transfection and flow cytometry (FCM) was applied to detect SKOV3 apoptosis. Results revealed that the apoptosis rates of SKOV3 cell were 32.8±2.2%, 33.9±1.9% and 11.7±1%, respectively, in the control group, no-load group and transfection group after 2-d cisplatin treatment (10 μg/mL). The apoptosis rate in the transfection group was obviously lower than that in the control group and no-load group (p = 0.00) while no significant difference was found in the apoptosis rate in the other two groups (p = 0.75). Furthermore, the apoptosis rates of SKOV3 cell in the SKOV3 group, negative control group, SKOV3-ribose nucleic acid interfere (RNAi) group were 7.9±0.5%, 8.3±0.8% and 29.5±1.3% respectively. The apoptosis rate was notably higher in SKOV3-RNAi group than in the SKOV3 group and negative control group (p < 0.001) while no significant difference was found in the apoptosis rate in the other two groups (p = 0.89). Thus, it can be concluded that HMGB1 interference can reduce VEGF and CXCL12 expression in ovarian cancer cells, but increase the apoptosis of ovarian cancer cells. Moreover, HMGB1 is highly expressed in cytoplasm and karyon.
CORRELATION BETWEEN GENETIC SUSCEPTIBILITY OF TUBERCULOSIS AND MACROPHAGE MIGRATION INHIBITORY FACTOR

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This paper aims to study the relationship between genetic susceptibility of tuberculosis and macrophage migration inhibitory factor (MIF) and provide theoretical basis and foundation for further studies on pathogenesis and treatment of tuberculosis. Enzyme Linked Immuno Sorbent Assay (ELISA) was applied to detect the difference of MIF protein expression level in peripheral serum of the test subjects, and analyze the difference of MIF protein expression levels of different genotypes and alleles at -794CATT locus and -173G/C locus. The results showed that MIF protein expression level in serum of patients in the tuberculosis group was higher than that of the healthy control group (p < 0.05). The MIF protein expression level of genotype (5/5+5/6+6/6) and (7/X+8/X) at -794CATT locus of the tuberculosis group was higher than that of the healthy control group (p < 0.05), and MIF protein expression level of genotype GG and (GC+CC) at -173G/C locus of the tuberculosis group was higher than that of the healthy control group (p < 0.05). Therefore, macrophage migration inhibitory factor is an important cell factor which plays a regulating role in the immune system, as it can inhibit macrophage migration and promote the gathering, infiltration and proliferation of macrophages at inflammatory sites. Furthermore, it can secrete some cell factors which play a central role in immunological regulation.
LETTER TO THE EDITOR

Efficacy of Traditional Chinese Medicine for Cooling Blood and Eliminating Toxins and Strengthening and Purifying Spleen in the Treatment of Refractory Hepatitis C

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This study was designed to observe the comprehensive efficacy of traditional Chinese medicine (TCM) combined with interferon in the treatment of chronic hepatitis C (CHC), compare this combined therapy with interferon therapy alone and investigate its possible mechanism to provide a basis for the development of an integrated traditional Chinese and Western medicine for the treatment of CHC. According to patient contraindications for antiviral treatment, patients who were suitable for interferon therapy and willing to use TCM were enrolled as combined traditional Chinese and Western medicine group, and 21 CHC patients were selected as Western medicine control group; patients who had contraindications for antiviral treatment were included in the TCM group. The three groups of patients were all diagnosed with positive hepatitis C virus - ribose nucleic acid (HCV-RNA). The treatment course lasted for one year and the patients were followed up for 12 months. Patients’ demographic data, course of disease, chronic liver disease questionnaire (CLDQ), genetic typing, biochemical indexes, HCV-RNA and side effects were compared between the groups. The efficacy, incidence of side effects and improvement in quality of life were analyzed in each group. Results showed that the combination of TCM and interferon could protect liver, reduce side effects and also improve quality of life of the patients, while the antiviral activity of TCM alone was not obvious.
Allergic rhinitis (AR) is caused by an IgE-mediated inflammatory reaction. Non-allergic rhinitis (NAR) is characterized by a non-IgE-mediated pathogenesis. Frequently, patients have the two disorders associated: such as mixed rhinitis (MR). Hyaluronic acid (HA) is a fundamental component of the human connective tissue. HA may exert anti-inflammatory and immune-modulating activities. Recently, an intranasal HA formulation was proposed: a supramolecular system containing lysine hyaluronate, thymine and sodium chloride (T-LysYal®). This randomized study investigated whether intranasal T-LysYal® (rinoLysYal®, Farmigea, Italy) was able to reduce symptom severity, endoscopic features, and nasal cytology in 89 patients (48 males and 41 females, mean age 36.3±7.1 years) with AR, NAR, and MR. Patients were treated with intranasal T-LysYal® or isotonic saline solution as adjunctive therapy to nasal corticosteroid and oral antihistamine for 4 weeks. Patients were visited at baseline, after treatment and after 4-week follow-up. Intranasal T-LysYal® treatment significantly reduced the quote of patients with symptoms, endoscopic features, and inflammatory cells. In conclusion, the present study demonstrates that intranasal T-LysYal® is able, as ancillary therapy, to significantly improve patients with AR, NAR, and MR, and its effect is long lasting.
LETTER TO THE EDITOR

8-ISOPROSTANE IN EXHALED BREATH CONDENSATE AFTER EXPERIMENTAL EXPOSURE TO WOOD SMOKE IN HUMANS

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Wood smoke, a well-known indoor and outdoor air pollutant, may cause adverse health effects through oxidative stress. In this study 8-isoprostane, a biomarker of oxidative stress, was measured in exhaled breath condensate (EBC) and urine before and after experimental exposure to wood smoke. The results were compared with measurements of other biomarkers of oxidative stress and inflammation. Thirteen subjects were exposed first to clean air and then, after 1 week, to wood smoke in an exposure chamber during 4-hour sessions. Exhaled breath condensate, exhaled nitric oxide, blood and urine were sampled before and at various intervals after exposure to wood smoke and clean air. Exhaled breath condensate was examined for 8-isoprostane and malondialdehyde (MDA), while exhaled air was examined for nitric oxide, serum for Clara cell protein (CC16) and urine for 8-isoprostane. 8-isoprostane in EBC did not increase after wood smoke exposure and its net change immediately after exposure was inversely correlated with net changes in MDA (rs= -0.57, p= 0.041) and serum CC16 (S-CC16) (rp= -0.64, p= 0.020) immediately after the exposure. No correlation was found between 8-isoprostane in urine and 8-isoprostane in EBC. In this study controlled wood smoke exposure in healthy subjects did not increase 8-isoprostane in EBC.
Perennial allergic rhinitis (PAR) is very common in children and has a relevant impact on their families. House dust mites (HDM) are the most relevant cause of PAR. The present pilot study aimed to evaluate whether hypertonic saline (3%) nasal spray as monotherapy is able to improve nasal symptom severity and parental perception of rhinitis control, sleep, and school performance in HDM-mono-sensitized children with PAR. Globally, 25 children (13 males and 12 females; mean age 9.5±3.1 years) were treated for 3 weeks. They were visited at baseline, at the end of treatment, and after a 2-week follow-up. Hypertonic saline significantly reduced total symptom score, and improved the perception, according to their parents, of rhinitis control, sleep, and school performance. In conclusion, the present pilot study provided the first evidence that 3% hypertonic saline monotherapy was able to relieve nasal symptoms and parental perception of PAR impact as well as being safe and well tolerated.
LETTER TO THE EDITOR

INTRANASAL T-LysYal® AS ADJUNCTIVE THERAPY FOR PATIENTS AFTER FUNCTIONAL ENDOSCOPIC SINUS SURGERY

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Functional Endoscopic Sinus Surgery (FESS) is a common day surgery technique for upper airway disorders. Hyaluronic acid (HA) is a fundamental component of the human connective tissue. HA may exert reparative, anti-inflammatory and immune-modulating activities. Recently, a new intranasal HA formulation has been proposed: a supramolecular system containing lysine hyaluronate, thymine and sodium chloride (T-LysYal®). This randomized study investigated whether intranasal T-LysYal® (RinoLysYal®, Farmigea, Italy) was able to reduce symptom severity, endoscopic features, and nasal cytology in 83 patients (49 males and 34 females mean age 45.4±6.2 years) treated with FESS. All patients were treated with isotonic saline solution for 4 weeks, and a sub-group (active group) was also treated with intranasal T-LysYal®. Patients were visited at baseline, after treatment, and after 4-week follow-up. Intranasal T-LysYal® treatment significantly reduced the quote of patients with symptoms, endoscopic features, and inflammatory cells in comparison to isotonic solution. In conclusion, the present study demonstrates that intranasal T-LysYal® is able to significantly improve patients after FESS and its effect is long lasting.
LETTER TO THE EDITOR

NASAL NITRIC OXIDE IN CHILDREN WITH RECURRENT ACUTE OTITIS MEDIA

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Recently, reduced Nasal nitric oxide (nNO) nNO levels have been reported in children with adenoidal hypertrophy predisposing to chronic nasosinusal inflammation. Given the strict anatomic and physiopathologic link between the nasopharyngeal and middle ear compartments, and considering the high prevalence of otitis prone children among those affected with chronic adenoiditis, we designed a study aimed to test any possible difference in nNO levels between non-allergic children with and without recurrent acute otitis media (RAOM) associated with chronic adenoiditis. The study involved 54 children with RAOM (44.4% males; mean age= 7.5±3.5 years) and 51 children without RAOM (47.4% males; mean age= 7.0±3.8 years). nNO levels were significantly reduced in children with RAOM compared to children without RAOM (676.9±250.7 ppb vs 831.8±320.4 ppb, respectively; p= 0.02). Our results could be related to reduced NO production by the ciliated paranasal, nasopharyngeal and middle ear epithelium and the impaired sinusal ostial and Eustachian tube patency due to chronic inflammation, and seem to confirm the involvement of NO pathway in recurrent upper airway infections related to impaired ciliated respiratory mucosa.
LETTER TO THE EDITOR

ACCELERATED BONE TURNOVER IDENTIFIES HEMIPLEGIC PATIENTS AT HIGHER RISK OF DEMINERALIZATION

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Immobilization osteoporosis represents a severe complication in hemiplegic patients (HPs), causing fragility fractures, which may occur during rehabilitation reducing functional recovery and survival. The aim of the study was to investigate determinants of bone loss, independent from length of immobilization, which may be useful in early identification of HPs at higher risk of demineralization. Forty-eight HPs of both sexes underwent anthropometric measurements, evaluation of scores of spasticity and of lower limb motory capacity. Laboratory tests were performed. On serum: calcium; phosphorus; creatinine; ALP; iPTH; 25(OH) vitamin-D; sex hormones; Δ4-androstenedione; DHEA-S; insulin; IGF-1; FT3; FT4; TSH; c-AMP. On urine: c-AMP and calcium/creatinine ratio. Two bone turnover markers were measured: serum osteocalcin (BGP) and urinary deoxypyridinoline (DPD). Bone mineral density was determined at both femoral necks, defining a percentage difference in bone loss between paretic and non-paretic limb, thus controlling for the complex cofactors involved. Only bone turnover markers significantly and directly correlated with the entity of demineralization, controlling for age, sex and length of immobilization in the multivariate analysis (BGP coefficient estimate=0.008; SE=0.003; p=0.020; DPD coefficient estimate=0.005; SE=0.002; p=0.036). BGP and DPD are not dependent on anthropometric and endocrine-metabolic parameters, disability patterns and duration of immobilization, thus represent independent determinants of the degree of demineralization. A cut-off was defined for BGP and DPD above which subjects show significantly greater risk of demineralization. The immobilization event generates more severe bone loss when it occurs in subjects with higher bone turnover. BGP and DPD measurements may be of primary importance for early identification of HPs at risk, with relevant preventive implications.
LETTER TO THE EDITOR

EPIDEMIOLOGY OF DIABETES MELLITUS IN THE FRAGILITY FRACTURE POPULATION OF A REGION OF SOUTHERN ITALY

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Increased risk of osteoporosis and its clinical significance in patients with diabetes is controversial. This study aims to increase the data which are available regarding the prevalence of diabetes mellitus in patients affected by fragility fracture in Italy. We retrospectively studied Hospital Discharge Data (HDD) in the Apulian database for the period 2006–2010 to identify a fragility fracture diagnosis in males over 65 years of age and in females over 50. The database was then checked for drug prescriptions to identify those persons who had taken at least one osteoporosis drug. Within this latter group, thanks to hospital admission and prescription records, the subjects affected with diabetes mellitus were identified. Between 2006 and 2010 in Apulia 177,639 patients were hospitalized and diagnosed as having fragility fracture. The greatest number of those fragility fractures were found to be in the 70 to 79 age range (64,917 total; females 56,994, males 7,923). The prevalence of diabetes subjects in Apulia in this period was estimated at 6.5%. In the same region and period 21.1% of subjects affected by diabetes experienced a fragility fracture; in particular, this number was 27% for males and for 20.5% females. This is the first study providing data on the prevalence of fragility fractures and diabetes in the Apulian population. The data confirm that diabetes is a risk factor which influences bone density and risk of fractures and therefore the need of osteoporosis screening and treatment in diabetic patients.
LETTER TO THE EDITOR

SODIUM HYALURONATE IMPROVES QUALITY OF LIFE AND NASAL ENDOSCOPY FEATURES IN PRESCHOOL CHILDREN WITH UPPER RESPIRATORY TRACT INFECTIONS

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The aim of this prospective, randomised study was to evaluate the effects of nasal douches with sodium hyaluronate on clinical and endoscopic variables, on parental perception of their child’s health-related quality of life (HR-QoL), and on parental workdays lost in preschool recurrent upper respiratory tract infections (URTIs). Children aged 2-6 years with recurrent or persistent URTIs underwent at baseline the evaluation of upper respiratory tract symptoms in the previous two weeks, and nasal endoscopy. Parents of enrolled children were assessed for self-perception of their children’s HR-QoL using a standardised questionnaire. The same variables were reassessed after a 2-week treatment with either 9 mg sodium hyaluronate plus saline solution or saline alone by nasal douches. Forty of the 48 children enrolled completed the study (22 assigned to the combined treatment). Compared to baseline, the combined treatment resulted in a significant reduction of the prevalence of children with missed daycare days (45% vs 14%, p=0.04) and of parents with workdays lost (36% vs 5%, p=0.02), and in a significant improvement of HR-QoL score (3.7 vs 2.8, p=0.004). At endoscopy, the secretion and mucosal oedema score significantly improved after the combined treatment (6 vs 2, p< 0.001), and there was a trend towards a reduction of the adenoid hypertrophy score (p=0.06). No clinical, HR-QoL or endoscopy changes were found in the saline group. In preschool children with recurrent or persistent URTIs, sodium hyaluronate by nasal douche significantly improves endoscopic features. Additional benefits include the children’s HR-QoL and daycare attendance, and parental work.
LETTER TO THE EDITOR

STUDY OF ORAL CAVITY LESIONS BY INFRARED SPECTROSCOPY

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Fourier transform infrared (FTIR) microspectroscopy is considered a useful tool in the biomedical field, for analysing in situ and at cellular level, very small areas of tissues and cells, with minimal sample preparation and without the use of stains or probes. This spectroscopic technique has been successfully applied to analyse biological samples from patients affected by tumoral pathologies, with particular attention to oral cavity lesions. In this study, we describe the application of FTIR microspectroscopy to characterize and discriminate the most recurrent benign and malignant diseases of oral cavity compartment. Infrared maps were acquired on tissues affected by the following pathologies: squamous cell carcinoma, adenoid cystic carcinoma, polymorphous low-grade adenocarcinoma, squamous dysplasia, keratocystic odontogenic tumor, radicular cyst, residual cyst, unicystic ameloblastoma, and ameloblastic fibroma, together with healthy tissue samples (used as control group). The epithelial and connective components of all samples were distinguished and submitted to multivariate analysis. The results were in agreement with histological suggestions.