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Cytokines are immunomodulatory and inflammatory compounds produced by many different cell types. The IL-1 family consists of at least eleven cytokines including IL-18 and IL-13 and are essential to the host defence against severe infections and mediate inflammation. IL-18 also enhances tumour rejection and has high capacity to augment the cytotoxicity of NK cells and T cells. IL-33 stimulates basophils and mast cells to produce cytokines and histamine independently of IgE. Mast cells play a crucial role in the development of allergy through the cross-linking of their surface receptors for IgE leading to degranulation and inflammation. Activated mast cells induce the generation of PGD2, detectable in 2-15 minutes after challenge, and LTC4. Here we review the interrelationship between PGD2, IL-1 family members and mast cells.
Bisphosphonates such as alendronate, which are potent specific inhibitors of osteoclast-mediated bone resorption, are widely used for treatment of postmenopausal osteoporosis as well as other diseases related to bone remodeling. We evaluated whether the reportedly functional PTGS2 (prostaglandin-endoperoxide synthase 2/cyclooxygenase [COX] 2) genotypes influence the efficacy of alendronate on vertebral fracture prevention. Sixty postmenopausal osteoporotic women participated in this interventional study. The extent of vertebral fracture was evaluated in all participants before and after intervention using X-ray imaging. Alendronate (10mg/day), calcium (1gr/day) and vitamin D (400mg/day) were given to participants for 2 years. Laboratory measurements included circulating crosslaps, osteocalcin, PTH, osteoprotegrin, RANKL, vitamin D, TNF-α, IL-6, IL-1 levels. Hip and spine BMD (bone mass density) were measured using DEXA. Genotyping for cox-2 gene SNP (-765G/C) was performed using PCR- RFLP method. Genotype frequency of homozygous major allele (GG), heterozygous (GC) and homozygous minor allele (CC) were 61.7%, 33.3% and 5% respectively. Evaluation of vertebral fracture before alendronate therapy in participants demonstrated no significant difference between carriers of G and C alleles, although the difference appeared near to significant after alendronate therapy at the end of 2 years. Serum PTH level and L2-L4 BMD were significantly different between subjects with different alleles. Moreover, IL-1 had prominently higher concentration in C allele carries. Furthermore, there was a significant difference in terms of the extent of vertebral fracture between two allelic groups after two years of treatment. Since bone remodeling process has been proved to be affected by inflammatory factors; it appears that variation in COX-2 genotypes may influence alendronate efficacy in fracture prevention among postmenopausal osteoporotic women.
NEUTROPHILIC CELLS IN SPUTUM OF ALLERGIC ASTHMATIC CHILDREN

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Airway inflammation is regarded as a central feature of asthma and is mostly sustained by eosinophilic infiltrate. Recent studies have shown that a co-activation of eosinophil- and neutrophil-dependent inflammatory mechanisms might explain why some asthmatics do not respond to conventional asthma therapy. The aim of our study is to determine whether neutrophilic inflammation was involved in 55 allergic children with mild-moderate persistent asthma and the relationship with the response to steroid treatment. Before the sputum analysis, all children underwent spirometry with the reversibility test, and were divided into two groups on the basis of the response (such as >12% of baseline FEV1): group 1 positive and group 2 negative. Eosinophil cationic protein concentrations were measured by radioimmunoassay and neutrophil myeloperoxidase (MPO) concentrations were measured by an MPO-EIA. Ten healthy children of comparable ages served as control group. Total IgE, FEV1 and FEV/FVC values were similar in both groups. The sputum macrophage count was higher in controls than in allergic asthmatics, but there was no difference between groups 1 and 2 (59.6% vs 18.3% and 17%; p≤ 0.005). Sputum neutrophils were significantly higher in group 2 both vs controls (62% vs 34%; p≤ 0.005) and vs group 1 (62% vs 37%; p≤ 0.005). Our data suggest that neutrophils are involved in airway allergic inflammation in mild-moderate persistent childhood asthma and a high neutrophil count in sputum may be related to a lower responsiveness to inhaled corticosteroids.

RESPIRATORY PARAMETERS IN TRAFFIC POLICEMEN EXPOSED TO URBAN POLLUTION

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Studies in scientific literature have proved that urban pollution affects the respiratory system. The aim of our study is to assess the effects that different time of exposure to urban pollution can cause on respiratory function in municipal traffic policemen. The research was carried out on a sample of 120 traffic police officers of both sexes divided into two groups, group A with work service between 1 and 10 years and group B with more than 10 years of service. All subjects included in the study were tested for respiratory functions by a spirometer test. Statistical analysis showed a significant difference between group A and group B (p<0.005) in some spirometric parameters, such as Forced Expiratory Volume in one second (FEV1) and Forced Vital Capacity (FVC). The study suggests that longer occupational exposure to urban pollutants increases the risk of modifications of respiratory function.
INVESTIGATION OF ANTI-INFLAMMATORY, ANALGESIC AND ANTIPYRETIC PROPERTIES OF MADHUCA INDICA GMEL

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The crude methanolic extract of Madhuca indica (Sapotaceae) at 50, 100 and 200 mg/kg body weight was evaluated for anti-inflammatory, analgesic and antipyretic activities in male wistar rats. Anti-inflammatory activity was studied by using carrageenan-induced oedema right hind paw volume while the analgesic effect was evaluated using acetic acid-induced abdominal pains, i.e. nociception response and the brewer’s yeast-induced pyrexia model was used for antipyretic investigation. Phytochemical screening of the alcoholic extract revealed the presence of cardiac glycosides, flavonoids, saponins, steroids, tannins and terpenes. All the doses of the plant methanolic extract and the indomethacin significantly inhibited carrageenan-induced inflammation that was not dose-dependent. The plant extract reduced the acetic acid-induced pain licking. The plant extract reduced the brewer’s yeast-provoked elevated body temperature in rats after 60 mins for 50 and 100 mg/kg dose range and 30 mins for 200 mg/kg dose range. The results suggest a potential benefit of M. indica methanolic extract in treating conditions associated with fever, inflammation and pain. These properties might be adduced to the presence of the phytoconstituents.

PHOSPHODIESTERASE INHIBITOR 3-ISOBUTYL-1-METHYL-XANTHINE AFFECTS OVARIAN MORPHOLOGY AND STIMULATES REPRODUCTION IN RABBITS

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The aim of our study is to examine the influence of administration of 3-isobutyl-1-methyl-xanthine (IBMX), inhibitor of cAMP and cGMP phosphodiesterases on ovarian functions (folliculogenesis, atresia and luteogenesis), as well as on some reproductive parameters in rabbits whose ovarian cycle and ovulation was induced by gonadotropins. Ovarian cycle and ovulation of control rabbits were induced by PMSG followed by hCG administration. Experimental animals received 20IU/kg PMSG and 35IU/kg hCG together with IBMX (at 5, 25 or 50 μg/animal). After ovulation and mating, the animals were sacrificed. Histological slides of ovaries were prepared, and the presence of follicles and different stages of luteinisation and atresia were evaluated by light microscopy. The pronuclear stage eggs were flushed out from the oviducts and cultured up to blastocyst cell stage. Numbers of ovarian Corpora lutea, ovulated oocytes and oocyte-derived embryos reaching blastocyst stage were determined. Administration of IBMX was able to increase the proportion of luteinised follicles. Furthermore, IBMX treatment promoted occurrence of atresia in the remaining follicles after the gonadotropin treatment. Finally, IBMX increased the number of Corpora lutea, number of harvested zygotes and embryos at blastocyst stage derived from these zygotes after culture. These data demonstrate that IBMX can enhance the stimulatory effect of gonadotropins on the rabbit ovarian follicle luteinisation, atresia, ovulation, zygote and embryo yield and development. Furthermore, they confirm the involvement of cyclic nucleotide-dependent intracellular mechanisms in the control of rabbit reproductive functions and potential practical usefulness of IBMX in improvement of farm animal reproduction and fertility.
EPIDEMIOLOGICAL STUDY AND CLASSIFICATION OF ICU INFECTIONS, USING THE CARRIER STATE CRITERION

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This work aims at the better comprehension of epidemiology of ICU infections, using a classification based on the carrier state of the patient. This classification distinguishes the infections in primary endogenous (PE), secondary endogenous (SE) and exogenous (EX) infections. The material used was derived from ICU patients who were admitted to the ICU without being transferred from another ward of the same hospital or another hospital. Culture swabs were obtained from the pharynx and perineum of the patients at ICU admission and from then onwards every 3 days during their hospitalization. At the same time, cultures of clinical samples were carried out, on suspicion of infection. Ninety-six ICU patients were studied. In 31 of these, a total of 78 infections were developed. According to the proposed classification, 26 of the infections were PE (rate 33.3%), 34 SE (rate 43.6%) and 18 EX (rate 23.1%). Using the carrier state criterion, there were 11 fewer infections characterized as nosocomial (rate 14.1%), contrary to the 48-hour criterion. Based on this new taxonomy of infections, we are able to know in advance the source of the causative microorganisms and reduce the prevalence of ICU infections, by applying appropriate prevention and treatment strategies.

RANDOMIZED PROSPECTIVE STUDY ON THE USE OF EUFISS IN THE PREVENTION OF INFECTIONS IN PATIENTS TREATED WITH EXTERNAL FIXATION

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Percutaneous synthesis using K-wires or external fixation in orthopedics and traumatology is extremely common. Postoperative management of external fixation includes frequent wound care which is demanding for both the patient and the healthcare professionals. In literature the most frequently reported complication is infection. The use of ionic silver goes back to the beginning of the last century and there are many articles describing its antimicrobial efficacy even for antibiotic-resistant bacteria. In this study we assess the reduction in both superficial and deep infections by using ionic silver in patients with external fixation for orthopedic diseases or traumatology. Furthermore, we show how this method could also contribute to reducing wound care costs. The data collected shows an overall infection incidence of 10%, concordant with data in literature. There appears to be no correlation between the probability of superficial infections and predisposing diseases, such as diabetes, nor the fracture site or position. The presence of loose pins increases the probability of infection. There appears to be no correlation between the clinical examination and the microbiological culture. The data analysis shows that wound care with ionic silver reduces the incidence of superficial infection of the pins. Furthermore, this method guarantees greater cleanliness of the skin and the external fixator which increases patient satisfaction in the management of the external fixation. To date, an insufficient number of patients have been studied to gather enough data to establish which wound care method is the most economical. Certainly, we can state that treatment with ionic silver reduces infection incidence and enables better management of the external fixators and percutaneous synthesis in orthopedics and traumatology.
IMMUNOGLOBULIN PRODUCTION PATTERN IN ALLERGIC AND NON-ALLERGIC SUBJECTS

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Allergic rhinitis (AR) is characterized by Th2 polarized immune response, such as increased IL-4 and reduced IFN-γ production, and by a functional defect of T regulatory cells. This impaired immune response profile influences the pattern of immunoglobulin (Ig) production in allergic patients. However, no studies have compared the pattern of inhalant allergen-specific Ig classes between allergic patients and normal subjects. The aim of this study is to therefore investigate the allergen-specific IgE, IgG, IgG4, and IgA serum level pattern in a group of patients with pollen allergy and in non-allergic healthy subjects. One hundred and two allergic patients (evaluated both out of and in the pollen season) were enrolled. In addition, 50 healthy non-allergic subjects were recruited during the whole year. Serum allergen-specific IgE, IgG, IgG4, and IgA for Parietaria, grasses, and birch were quantitatively determined by the ImmunoCAP System method. Allergen-specific IgE, IgG, IgG4, and IgA serum levels were significantly different for each tested allergen (p=0.0001 for each class) among groups. Allergic patients, mainly during pollen season, showed the highest IgG, IgG4, and IgA levels. The present study therefore provides the preliminary evidence that Ig production pattern toward inhalant allergens may depend on the specificity of the allergenic response both in non-allergic subjects and allergic patients. Allergic patients do not show a defect of IgG and IgA classes. In addition, this study is the first that quantitatively evaluates the Ig classes. However, further studies should include non-allergic subjects evaluated both during and out of the pollen season.

THE ROLE OF ATYPICAL MICROORGANISMS IN CHRONIC OROPHARYNGEAL PHLOGOSIS


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The recurrent or chronic “non specific pharyngitis” is one of the most common complaints of adults treated in an outpatient setting and it is a disease without a certain aetiology, but with many probable causes which can be of bacterial or viral nature, but incidence of atypical microorganism infection, such as Chlamydia trachomatis (Ct), Mycoplasma hominis (Mh) and Ureaplasma urealyticum (Uu) is believed to be on the rise. The increase is correlated above all to sexual behavior and to diffusion of new microbiological diagnostic methods, such as PCR. From 840 patients affected by recurrent episodes of chronic pharyngeal phlogosis and examined from 2006 to 2008, we selected 67 patients, 37 women and 30 men. On the basis of molecular and cultural analysis, 85.07% of patients were positive to Ct, and 89.55% were positive to Mollicutes (Mh+Uu), showing a vast overlapping of co-infections of Uu and Mh. Our data indicated a higher rate of infection by atypical microorganism in selected patients affected by chronic pharyngitis. It is important to suspect this aetiology during recurrent chronic pharyngitis because patients with these oropharyngeal infections, must be considered as carriers and the correct treatment, only possible after exact diagnosis, is above all necessary to prevent fearful complications in other body areas.
The rate of lifetime traumas in the general population is high and a great deal of evidence suggests that persons with severe mental illness (SMI) show an even higher degree of vulnerability to trauma throughout their lives. Recent studies report between 13 and 29% of comorbid Post-Traumatic Stress Disorder (PTSD) in schizophrenic patients. Other studies showed that SMI patients with PTSD were in poorer health, had lower self-esteem, and had lower subjective quality of life and more cognitive deficits in comparison with those without PTSD. The aim of this work is to study a sample of chronic schizophrenic inpatients admitted after the L’Aquila earthquake, to assess if comorbid PTSD is associated with a higher rate of neurocognitive deficit and poorer quality of life in comparison with schizophrenic inpatients without PTSD. The sample of this study, recruited after the L’Aquila earthquake (between April 2009 and December 2009), consisted of 54 schizophrenic earthquake survivors admitted consecutively to the Psychiatric Inpatients Unit of L’Aquila San Salvatore Hospital. Each patient was assessed with the Positive and Negative Syndrome Scale (PANSS) and the General Health Questionnaire – 12 items (GHQ-12). The Impact of Event Scale-Revised (IES-R) was used to grade post-traumatic symptoms. PTSD diagnosis was made with the Structural Clinical Interview for DSM-IV (SCID-I). The cognitive assessment battery included WAIS-III Digit Span and Trail Making Test to assess working memory and executive functions, respectively. The severity of illness was measured with the Clinical Global Impression Scale (CGI). All the patients were on antipsychotic drugs at a mean daily chlorpromazine-equivalent dose of 236.38 mg (SD 183.5). 17% of the 54 schizophrenic inpatients (n 9) met the DSM-IV criteria for PTSD. PTSD subjects had significantly higher scores on the PANSS Positive Symptom subscale (P ≤ 0.015) and higher GHQ-12 mean score (30.50 vs 16.93). In the presence of post-traumatic symptoms a significant difference between the two groups (with and without PTSD) was found in hyper-arousal subscale scores, with a significant impairment of working memory in the PTSD sample. PTSD symptom measures positively correlated with the PANSS total and Positive score and GHQ-12 score ≥ 20 (“high stress level”). PTSD in schizophrenic patients is associated with a more severe cognitive deficit, higher levels of perceived stress and more positive symptoms. The investigation of PTSD in patients with schizophrenia might have important implications for their clinical management and for future research.