Obesity is one of the main rising causes of health problems in modern society and is correlated to type 2 diabetes mellitus, hypertension, heart disease and atherosclerosis. Bacterial products, endogenous substances such as oxidized LDL (ox-LDL) and heat shock proteins mediate activation of Toll-like receptors and reinforce the view that the innate immune system plays a key role in the genesis of atherosclerosis. In addition, natural killer T (NKT) cells respond to lipids presented via CD1d on APCs, and may also be able to affect atherosclerosis. All the main cell types involved in atherosclerosis such as endothelial cells, macrophages, T cells, smooth muscle cells and platelets express proinflammatory cytokines. In addition, CD4 ligation triggers the expression of adhesion molecules, cytokines and matrix metalloproteinase. IL-6 cytokines travels to the liver where it elicits acute phase response resolving in the release of serum amyloid-A C-reactive protein, fibrogen and plasminogen activator inhibitor-1. Therefore increasing body fat mass is associated with high levels of inflammatory cytokines such as IL-1 and TNF. In this study we revisit the interrelationship between fat and inflammation.
Circadian rhythmicity and melatonin secretion influence many functions in mammals, including the immune system function. The aim of our study is to investigate the effect of suppression of melatonin synthesis (caused by constant lighting) on the quantity of leucocytes in immunized BALB/c mice. The mice were kept under different lighting conditions: (1) customary environmental lighting; (2) constant exposure to light; (3) exposure to light and daily melatonin treatment. The disrupted melatonin synthesis had no effect on the number of cells in the thymus, bone marrow, spleen, lymph nodes and Peyer’s patches of immunized mice. However, the mice kept under constant light had an increased number of leucocytes in the peritoneal cavity when immunizations were performed in the evening. Melatonin treatment normalized the cell number. When the immunizations were performed in the morning, the numbers of cells in peritoneum of mice kept under constant lighting conditions were lower compared to mice exposed to normal lighting conditions. The number of cells of mice kept in normal light/dark conditions was significantly higher when the immunizations were performed in the morning. The number of peritoneal cells, however, did not depend on the immunization time when mice were kept under constant lighting. In conclusion, the amount of peritoneal cells in mice immunized with T cell-dependent antigens seems to be related to circadian rhythmicity, melatonin production and immunization timing.

PAF-METABOLIC ENZYMES AND PAF-LIKE ACTIVITY IN L. INFANTUM AND L. MAJOR PROMASTIGOTES

P. CHATZOVOULOS¹, A.B. TSOPRAS¹, M. SAMIOTAKI², G. PANAYOTOU², C.A. DEMOPOULOS¹ and E. DOTSIKA³

¹Faculty of Chemistry, National and Kapodistrian University of Athens, Athens; ²Protein Chemistry Laboratory B.S.R.C. “Alexander Fleming”, Vari, Athens; ³Laboratory of Cellular Immunology, Hellenic Pasteur Institute, Athens, Greece

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Leishmania spp are obligate intracellular protozoan parasites of the mononuclear phagocyte system that cause a spectrum of diseases known as leishmaniasis. Platelet Activating Factor (PAF) and some PAF-antagonists seem to play a key role in Leishmania infection. In this article we detected for the first time the specific activities of PAF basic metabolic enzymes, PAF cholinephosphotransferase (PAF-CPT) and Lyso-PAF-acetylotransferase (Lyso-PAF-AT), in two species of Leishmania, namely Leishmania major (L. major) and Leishmania infantum (L. infantum). Specific activity of PAF-CPT of L. major homogenates was substantially higher than that of L. infantum homogenates, while Lyso-PAF-AT specific activities of the homogenates of both species were detected in the same levels. In addition, PAF-like molecules were detected in cells and their culture medium of both species. These results show that PAF-biosynthesis exists and varies between Leishmania species, findings that are in correlation with the general idea that the presence of PAF in several Leishmania species is implicated in Leishmania infection.
Chronic obstructive pulmonary disease (COPD) is a treatable and preventable systemic disease characterized by chronic, progressive airflow limitation and airway inflammation related to an abnormal inflammatory response to tobacco or noxious particles and gases (1). It is a major cause of chronic morbidity and mortality throughout the world and is also the fourth leading cause of death (2). In addition, COPD is an important socioeconomic problem in both developing and developed countries.

Chronic inflammation plays an important role in the pathogenesis of the disease with pathological changes associated with chronic inflammation occurring in central airways, small airways, lung parenchyma, and pulmonary vascular structures (3).

THE EFFECTS OF INHALED STEROID AND THEOPHYLLINE ON SYSTEMIC INFLAMMATION IN COPD

H. BOYACI1, A. PALA2, S. ARGUN BARIŞ3, I. BASYIGIT1, F. YILDIZ1 and A. ILGAZLI1

1Department of Pulmonary Disease, Kocaeli University Medical Faculty, Kocaeli; 2Department of Pulmonary Disease, Nigde Government Hospital, Nigde; 3Department of Pulmonary Disease, M.Kazim Dinç Kandýra Government Hospital, Kocaeli, Turkey

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Chronic obstructive pulmonary disease (COPD) is a systemic disease characterized by chronic, progressive airflow limitation and airway inflammation. In this study, our aim is to compare the effects of inhaled corticosteroids and theophylline on systemic inflammatory markers in COPD. Twenty-nine moderate to severe COPD patients were randomly separated into two groups. In Group 1, inhaled corticosteroids (fluticasone propionate, 1000 mcg/day) were added to regular bronchodilator therapy for 8 weeks, and theophylline (400mg/day) was added in Group 2. Pulmonary function tests were performed and serum CRP, TNF-α, and IL-6 levels were measured before and after treatment. There was a statistically significant decrease in serum CRP levels in both groups following treatment (ICS group 1.06±1.2 vs 0.49±0.22 mg/dl p< 0.05; THEO group 1.66±2.23 vs 0.59±0.35 mg/dl p< 0.05). There was a significant reduction in serum TNF-α levels in the THEO group (3.82±3.44 vs 1.89±1.33 pg/ml p< 0.05). There was no significant change in IL-6 level following treatment in either group. There was a significant increase in FEV1 in the ICS group while a non-significant increase was noted in the THEO group following treatment. It has been suggested that both ICS and THEO could be used as an anti-inflammatory agent in the treatment of COPD. Furthermore, the measurement of serum inflammatory markers is an easy and non-invasive method for the determination and follow-up of systemic inflammation in COPD. Further studies including larger patient population are needed.
It is now well established that obesity is one of the most important independent risk factors for the development of atherosclerosis and cardiovascular diseases (1). Chronic immune-mediated inflammation, which involves adipokines, chemokines, cytokines and their receptors, and vascular endothelial cell dysfunction, characterized by a reduced bioavailability of the signaling molecule nitric oxide (NO), are both critically involved in the onset and progression of atherosclerosis (1-2).

ASYMMETRIC DIMETHYLARGININE: RELATIONSHIP WITH CIRCULATING BIOMARKERS OF INFLAMMATION AND CARDIOVASCULAR DISEASE RISK IN UNCOMPLICATED OBESE WOMEN

E. DOZIO1, A.E. MALAVAZOS2, G. DOGLIOTTI1, S. GOGGIF, E. GALLIERA1, U. SOLIMENE1,3, P. MAGNI4, E. COSTA2, L. MORRICONE2 and M.M. CORSI1,5

1Department of Human Morphology and Biomedical Sciences “Città Studi”, University of Milan, Milan; 2Operative Unit of Diabetology and Metabolic Diseases, IRCCS Policlinico San Donato, Milan; 3Center for Research in Medical Bioclimatology, University of Milan, Milan; 4Department of Endocrinology, Physiopathology and Applied Biology, University of Milan, Milan; 5Operative Unit of Clinical Pathology Laboratory. Department of Health Services of Diagnosis and Treatment - Laboratory Medicine, IRCCS Policlinico San Donato, Milan, Italy

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In recent years, the link between obesity, inflammation and atherosclerosis has attracted increasing interest. Recently, besides the classical inflammatory markers, the competitive nitric oxide synthase antagonist asymmetric dimethylarginine (ADMA) has been shown to be involved in the pathogenesis of atherosclerosis and cardiovascular diseases. Since obese people present a condition of chronic low-grade inflammation and endothelial dysfunction, in the present study we quantified ADMA levels in uncomplicated obese women (with no clinical, cardiac or metabolic complications) and normal-weight control subjects. We investigated the relationship of ADMA with some anthropometric measurements, abdominal visceral and subcutaneous adipose tissue accumulation, and biochemical and pro-inflammatory factors of the subjects [interleukin-6 (IL-6), soluble IL-6 receptor (sIL-6R), IL6-R/IL-6 ratio, tumor necrosis factor alpha (TNFα), homocysteine (Hcy) and plasminogen activator inhibitor-1 (PAI-1)]. ADMA and all the other pro-inflammatory parameters resulted higher in obese patients than in healthy subjects. ADMA significantly correlated with Hcy, PAI-1, TNFα and with sIL-6R/IL-6 ratio but not with other anthropometric and biochemical parameters. In a stepwise regression analysis ADMA correlated most closely with Hcy and TNFα. In conclusion, in our obese uncomplicated patients TNFα and Hcy emerged as strong predictors of ADMA which might be a potential mediator of the effects of different risk factors affecting the cardiovascular system.
The success of a dental implant treatment requires hard and soft tissue integration and osseointegration, mechanisms that entail a direct anchorage of the implant in the bone without interposition of soft tissue. Peri-implantitis is defined as an inflammatory reaction of the tissues surrounding a functioning dental implant. During inflammation, a high incidence of autoantibodies has been reported. The hypothesis of the present study is that the occurrence of autoantibodies to self-antigens including extracellular matrix (ECM) molecules and heat shock proteins (HSPs) might affect the dental implant outcome. Therefore, we evaluated the occurrence of antibodies to ECM molecules (Collagen (C) I, III, IV, V, fibronectin, laminin) and HSPs (HSP 27, HSP 65, HSP 90) in subjects with a healthy peri-implant microenvironment (n=29) as compared to patients with peri-implantitis (n=13). We also evaluated the HSP 27 expression in gingival fibroblasts grown in an inflammatory microenvironment. Antibodies to conformational ECM epitopes of C1, CIII and laminin were observed both in subjects with healthy peri-implant conditions and peri-implantitis. Antibodies to more than one HSP linear epitope were found in patients with peri-implantitis but not with healthy peri-implant conditions (p=0.024). Gingival fibroblasts grown in an inflammatory microenvironment showed increased HSP 27 cytoplasmic and plasma membrane expression as compared to fibroblasts grown in normal conditions. Immunity to multiple linear HSPs epitopes in patients with peri-implantitis and not in patients with a healthy peri-implant microenvironment might be relevant for monitoring the implant outcome and help to understand the role of subsets of autoantibodies in implant osseointegration.
A. Migliore1, U. Massafra1, E. Buzzi1, F. Vaccia1, L.S. Martin-Martin2, M. Granata3, S. Tormenta4 and B. Lagana5

1Operative Unit of Rheumatology, San Pietro Fatebenefratelli Hospital, Rome; 2Department of Internal Medicine, Regina Apostolorum Hospital, Albano Laziale, Rome; 3Operative Unit of Rheumatology, San Filippo Neri Hospital, Rome, Italy; 4Department Of Radiology, San Pietro Fatebenefratelli Hospital, Rome; 5Operative Unit for Autoimmune Diseases, “Sapienza” University, Rome, Italy

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Hip osteoarthritis represents a statistically relevant problem in clinical practice; previous reports showed different efficacy and safety profiles for intra-articular use of hyaluronic acid in hip osteoarthritis-affected patients, and in this sense, to add evidence to this topic, data regarding safety and efficacy of ultrasound-guided viscosupplementation are reported in order to establish whether such a therapeutic tool may represent a valid option. This study investigates the safety and efficacy profiles of ultrasound-guided intra-articular injections of Jointex® in hip osteoarthritis affected patients. This is a prospective multicentric study carried out in public hospitals. Adult outpatients suffering from symptomatic hip OA (Kellgren and Lawrence Grade 2, 3 or 4) were injected with one syringe of 4 ml (2 vials) of Jointex® under ultrasound guidance, repeated after six months; when clinically necessary an adjunctive injection was performed. Patients’ characteristics, such as gender, age, weight, height and BMI, smoking habit, unilateral or bilateral hip OA, radiological grade for hip OA following Kellgren-Lawrence grading and duration of disease, were evaluated. Patients were assessed at baseline and at every control visit and injection time for Lequesne index as primary endpoint, pain (evaluated by VAS) and NSAID consumption (number of days patients assumed NSAID in the last month) both as secondary endpoint. A total of 180 patients entered the study, all of whom received at least one IA US-guided injection of Jointex® into the hip joint. A total of 36 drop outs were registered, and both distribution and causes of drop out were recorded. A total of 389 injections were carried out, as 18 patients were affected by bilateral hip OA and 7 patients affected by monolateral hip OA required one more injection for symptomatic relief in respect to other patients. Scores obtained for primary as well as secondary study endpoints reached statistical significance when compared with scores obtained at baseline visit. Lequesne index mean scores obtained at each control visit, when compared with baseline mean value, were significantly different (p<0.001 for all control visits vs baseline). Similarly, results obtained for secondary endpoints, such as Pain VAS and NSAID consumption, when compared with results obtained at the baseline visit, showed a statistical significance (p<0.001 for all control visits vs baseline). We also evaluated how many patients reached an improvement in Lequesne algo-functional index of at least 70% at 6- and 12-month control visits: a percentage of 21.23% of patients attending the 6-month control visit showed such improvement, while at the 12-month control the percentage was 20%. No local or systemic infectious adverse events were reported during the
Psoriatic patients have an accumulation of metabolic syndrome (MS) and cardiovascular diseases (CVD), likely mediated by systemic inflammation, and exhibiting low circulating levels of insulin-like growth factor (IGF)-I, a marker of MS and CVD in the general population. The aim of this study is to determine the association of IGF-I and inflammation, and to assess the cardio-metabolic risk calculating the visceral adiposity index (VAI), in a group of psoriatic patients without MS. IGF-I, fibrinogen, C-reactive protein (CRP), and interleukin (IL)-6 levels were determined in 20 patients with moderate to severe psoriasis (age range 23-77 yrs) without MS, according to criteria of the National Cholesterol Education Program’s Adult Panel III (ATP III), and 20 age- and BMI-matched controls. The standard deviation score (SDS) of IGF-I levels according to age (zSDS), the homeostasis model assessment of insulin resistance (HOMA-IR), the whole-body insulin sensitivity index (ISI), and VAI were also calculated. Psoriasis Area and Severity Index (PASI) mean value was 17.8±11. HDL cholesterol and IGF-I zSDS values were lower (p<0.001) and waist circumference (p<0.001), VAI, fibrinogen, and IL-6 (p<0.005) were higher compared with controls, while HOMA-IR and ISI were not statistically different. Lower IGF-I zSDS values were associated to higher values of BMI (p=0.04), waist circumference, VAI (p<0.001), PASI (p=0.011), or IL-6 (p<0.001). At the multivariate analysis PASI was the major determinant of IGF-I zSDS (p=0.016), accounting for 37% of its variability. In a subset of psoriatic patients without MS, chronic inflammation might be an important modulator of low IGF-I status, as a further possible mechanistic link between psoriasis and associated metabolic co-morbidities. The negative correlation between age-related IGF-I values and VAI suggest the involvement of adipocyte dysfunction in low IGF-I status more than MS per se. Further studies are needed to address whether these results are valid also for other psoriatic patients.
THE BLOOD UROKINASE SYSTEM IN PATIENTS WITH SEASONAL ALLERGIC RHINITIS AND CONCOMITANT SEASONAL ASTHMA DURING POLLEN SEASON

A. KASPERSKA-ZAJAC¹, E. CZECIOR², A. GRZANKA¹, E. MACHURA⁴ and M. MISIOLEK²

¹Clinical Department of Internal Diseases, Allergology and Clinical Immunology, Medical University of Silesia, Katowice; ²Clinical Department of Otolaryngology in Zabrze, Medical University of Silesia, Katowice; ³Department of Internal Diseases, Dermatology and Allergology, Medical University of Silesia in Katowice; ⁴Department of Pediatric in Zabrze, Medical University of Silesia, Poland

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It is well known that the fibrinolytic system actively participates in inflammatory processes. To investigate the role of the urokinase system in atopic allergy, we assessed circulating levels of urokinase-type plasminogen activator (uPA) and its soluble receptor (suPAR) in patients with pollen allergy suffering from allergic rhinitis and asthma during a period of natural pollens exposure. Plasma concentrations of uPA and suPAR were measured in 19 patients sensitized to grass and rye pollens (12 men and 7 women, 18 to 30 years old) who had seasonal allergic rhinitis and concomitant seasonal asthma symptoms, and 23 age- and sex-matched healthy controls, using THE enzyme-linked immunosorbent assay (ELISA) method. There were no significant differences in plasma concentrations of uPA and suPAR between patients and the control subjects. Seasonal allergic airway inflammation is not associated with enhanced release of uPA and suPAR into the systemic circulation.

DECITABINE FOR ACUTE MYELOID LEUKEMIA IN A PATIENT UNDERGOING HEMODIALYSIS

T.V. KOURELIS¹, M.N. MOUSTAKAKIS², R. SILK, D. PHARM³, A. BORUCHOV² and S.F. BILGRAMI²

¹University of Connecticut School of Medicine, Farmington, CT; Department of ²Medicine and Department of ³Pharmacy, Saint Francis Hospital and Medical Center, Hartford, CT, USA

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Treatment of patients with Acute Myeloid Leukemia (AML) undergoing hemodialysis is especially challenging since there are no specific management guidelines for the administration of cytotoxic agents in these patients. Well established chemotherapy protocols may be unsuitable in such cases because of altered drug pharmacokinetics, increased risk for complications, and underlying co-morbidities. In addition, these patients are at an increased risk for complications such as tumor lysis syndrome. Herein, we report the first use of decitabine in a patient on hemodialysis. He presented with a new diagnosis of AML and achieved hematologic remission following the use of induction chemotherapy and maintenance decitabine.
THE PREVALENCE OF RHEUMATOID ARTHRITIS IN THE SOUTH OF JORDAN

Z. DAHAMSHEH¹, R.G. BELLOMO², R. SAGGINI², G. BARASSI³ and A. SAGGINI⁴

¹Rehabilitation and Rheumatology specialist, Royal Medical Services, Amman-Jordan; ²Department of Basic and Applied Medical Science, “G. d’Annunzio “ University, Chieti, Italy; ³Physical Therapy Institute, Medicine Sports University Center, University” G. d’Annunzio”, Chieti, Italy; ⁴Department of Dermatology, University of Rome Tor Vergata, Rome, Italy

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The aim of this study is to evaluate the prevalence of rheumatoid arthritis in the south of Jordan. The study was carried out between January, 2005 and December, 2008; 2,220 adults aged between 16 and 75 years were evaluated for the presence of rheumatoid arthritis disease according to the American Rheumatism Association 1987 criteria. The results showed that the prevalence of rheumatoid arthritis was 0.36% in the general population; the prevalence in males was 0.34% and in females it was 0.39%. In conclusion, the prevalence of rheumatoid arthritis is extremely low in the south of Jordan with a slight female predominance. American Rheumatism Association criteria continued to be the most useful criteria for the diagnosis of rheumatoid arthritis.

A RARE CASE OF SARCOIDOSIS AND MORPHEA

M. CARLESIMO¹, A. NARCISI¹, D. ORSINI¹, G. CORTESE¹, C. ABRUZZESE¹, S. GIOVAGNOLI², M. GIUBETTINI³ and G. CAMPLONE¹

¹Dermatology Unit, S.Andrea Hospital, Faculty of Medicine and Psychology, University of Rome “Sapienza”, Rome; ²UOC Pneumology, S.Andrea Hospital, Faculty of Medicine and Psychology, University of Rome “Sapienza”, Rome; ³Department of Histopathology, S.Andrea Hospital, Faculty of Medicine and Psychology, University of Rome “Sapienza”, Rome, Italy

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In the last decades several cases of association between sarcoidosis and various autoimmune diseases have been described, leading us to stress the concept of a possible common genetic “soil” of predisposition. The majority of these cases were association between sarcoidosis and generalized scleroderma, but only one case of localized scleroderma and sarcoidosis. In this report, we describe a case of a female patient in which a diagnosis of pulmonary sarcoidosis and morphea was made.

LETTER TO THE EDITOR

CUTANEOUS INFECTION OF NOCARDIA ALTAMIRESIENSIS: THE FIRST CASE REPORT

P. BETTO¹, S. CERIMELE¹, M. RASSU², C.V. FORNASA¹, M. DI PIETRO³ and R. SESSA³

¹Dermatology and ²Microbiology and Virology Unit, San Bortolo Hospital, Vicenza, Italy; ³Department of Public Health and Infectious Diseases, “Sapienza” University, Rome, Italy

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We report the first case of Nocardia altamiensis cutaneous infection in an immunocompetent host. A 53-year-old male, with no predisposing factors, presented with a suppurative papular nodule on the dorsum of his left foot. N. altamiensis was identified by sequencing the 16S ribosomal RNA (rRNA), and treatment with amikacin led to complete resolution of the clinical picture. We believe that cutaneous nocardiosis should be kept in mind as a possible cause of serious complications also in immunocompetent hosts considering a nonspecific clinical picture and misdiagnosis of the infection as well as the poor response to empirical antimicrobial therapy.