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ANTIMICROBIAL RESISTANCE OF GERMS ISOLATED FROM PATIENTS WITH BACTERIAL RESPIRATORY INFECTIONS

Popescu C.*, Gavrilu L., Popescu G.A., Dorobat O., Rafila A., Benea E, Arama V, Streinu-Cercel A, Antonica D, Draganescu A., Gubavu C., Gliga S.

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Without local epidemiology of antimicrobial susceptibility data, the first line syndromes therapy could be less adequate and could involve a greater risk for bacteriological failure, with prolonged duration of treatment and/or less favorable outcomes.

Goal: To define first line therapy for urinary tract infections.

Methods: Antimicrobial susceptibility analysis of urine culture isolated bacteria, for a twelve months period: July 2008- June 2009 in a four infectious diseases hospitals from Romania (MAR-T group). The surveillance time was divided in two six month periods, to evaluate some susceptibility level variations. Results: We analyzed the susceptibility profiles for 2164 bacterial isolates from urine cultures; the most frequent etiologies were *E coli* B*¹²⁷⁸ (59.07%) and *Klebsiella pneumoniae* isolates - 156 strains (7.21%); *Enterococcus faecalis* was the most aminopenicillin with beta-lactam inhibitors (oral), or cephalosporins (parenteral). For fluoroquinolones, norfloxacin was non-inferior to ciprofloxacin: 71.62% versus 70.12% (p=0.57). The only

difference between the two study periods could be an increased isolated gram-positive - 124 strains (5.73%). From tested antibiotics, a good activity had:

- For ambulatory care (oral therapy): nitrofurantoin 78.63%, respectively 81.94%, and cefuroxime-axetil: 77.25%, respectively 78.69%

- For hospital care (parenteral administration): carbapenems: 95.09%, respectively 96.79% and amikacin: 93.61%, respectively 89.51%

Statistical analysis indicates an almost significant superiority of nitrofurantoin against fluoroquinolones, p=0.086.

Conclusion: The reappraisal of nitrofurantoin and norfloxacin (for lower urinary tract infections), as of aminoglycosides for upper urinary tract infections seem to be the best choice options in first line therapy. Carbapenems need to be used as first-line treatment only in a few selected cases of hospital-acquired upper urinary tract infections, when antimicrobial resistance risk could be high (i.e. in-hospital urological intervention, multiple recent antimicrobial treatment).

COMMUNITY ACQUIRED PNEUMONIA AND LOWER LOBE SYNDROME CAUSED BY PASTEURILLA MULTOCIDA

Kontopoulou Konstantina, Stergiou Ioannis, Tsepanis Konstantinos, Tsiggene Sabato, Laudas Theodosios, Kriti Maria

General Hospital G. Gennimatas Thessaloniki

BACKGROUND: *Pasteurella multocida* is a small, gram-negative, nonmotile, non-spore-forming coccobacillus which often exists as a commensal in the upper respiratory tracts of many livestock, poultry, and domestic pet species, especially cats and dogs. The majority of the infections are associated with an animal bite, scratch, or lick.

OBJECTIVE: Report of a community acquired pneumonia in a 15-year-old patient caused by *Pasteurella multocida*.

CASE PRESENTATION: A 15-year-old female student with a history of bronchial asthma was admitted in the emergency department of our hospital because of a 16-hour history of fever (38,50C). She returned from a trip in Kastoria where she visited the zoo and the local forest. In the morning she also visited the local hospital there presenting intense cough and fever where she was submitted in laboratory and radiological control. Because of lack of remarkable clinical findings, a virus infection was considered as a possible diagnosis. The rapid

deterioration forced the patient to come to our hospital for re-evaluation. The chest radiograph revealed thickening of the right lower lobe. Computed tomography was performed, while blood and sputum cultures were also received. CT scan revealed a large pleural effusion on the right side combined with inflammation and atelectasis of the upper sector of the right lower lobe. As far as sputum culture is concerned, *Pasteurella multocida* was isolated in two consecutive probes. The identification and the antibiotic susceptibility tests were performed by the automated system VITEK II (Bio MerieuxB®, France). The strain was sensitive in penicillin and second and third generation cephalosporins and resistant to erythromycin, clindamycin and aminoglycosides. Piperacillin/tazobactam was the antimicrobial agent administrated to the patient, who responded well to the treatment. Particularly impressive was the complete dissolve of the thickening in 48 hours.

COLONIZATION OF AN INTENSIVE CARE UNIT IN THE BOUNDS OF INSPECTION OF HOSPITAL ACQUIRED INFECTIONS COMMITTEE

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OBJECTIVE: The study of the distribution frequency of the microorganisms isolated from various places in ICU and their resistance phenotype.

MATERIAL AND METHOD: Our material consisted of 110 and 29 specimens collected from different surfaces in ICU, before and after its pedantic disinfection, respectively. The identification and the antibiotic susceptibility tests were performed by the automated system VITEK II (BioMerieux®, France) and by the use of E-test for MIC determination.

RESULTS: Of the initial 110 specimens 47 (42.7%) were negative. In 23 we found staphylococcus epidermidis (15) and staphylococcus haemolyticus (8). From the remaining 40 specimens there were isolated in order of frequency the following: *Acinetobacter baumannii* (20), *Stenotrophomonas maltophilia* (14) and *Pseudomonas aeruginosa* (6). All the strains of *Acinetobacter baumannii* had the same resistance phenotype being sensitive only in colistin and tigecycline. The strains of *Pseudomonas* were isolated from specimens collected exclusively from taps and they were sensitive. All isolates of *Stenotrophomonas maltophilia* revealed the same

resistance phenotype being sensitive to gentamycin, colistin and tigecycline and resistant to meropenem, imipenem and ertapenem, a phenotype which is constant with the production of KPC type OI-lactamases. These strains also harboured ESBL and by performing the imipenem-EDTA double disk synergy test they were found negative for the production of metallo-beta-lactamases. The production of KPC type OI-lactamases was confirmed by the presence of blaKPC gene detected by real time PCR. Finally, all the cultures of specimens received after the disinfection of ICU were negative.

CONCLUSIONS: This study proves the important role of hospital acquired infections committee in the dissemination restriction of multi-drug-resistant isolates. In our hospital the proper collaboration between the laboratory, the ICU and the hospital acquired infections committee contributed to the avoidance of the dissemination of another dangerous resistance mechanism according to recent reports in the journal "Antimicrobial Agents and Chemotherapy" -Letter to the Editor (Vol.52 Feb 2008, p.796-797).

ANTIBIOTIC SUSCEPTIBILITY OF STAPHYLOCOCCUS AUREUS ISOLATES FROM BLOOD CULTURES DURING THE PERIOD 2007-2009

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Objectives: *Staphylococcus aureus* is one of the most common causes of bacteraemia and sepsis of hospital origin. *Staphylococcus aureus* bacteraemia is an important clinical problem associated with a high mortality rate and a significant burden on healthcare resources. Endocarditis is the most common and important complication of *Staphylococcus aureus* bacteraemia. We conducted a survey to establish antimicrobial susceptibility of *Staphylococcus aureus* isolates from blood cultures during three years period.

Methods: Blood cultures have been processed on the Bactec 9240 automatic system (Becton Dickinson), and positive samples have been streaked onto solid media. The culture has been identified by standard methods of identification: Gram stain, salt manitol agar, catalase test,

plasma coagulase test. Antimicrobial susceptibility was tested using Vitek 2 system and Vitek AST 580 card (BioMerieux) and interpretation of the results was according to CLSI criteria.

Results: We examined a total of 159 isolates of *Staphylococcus aureus*: 42 (26.4%) in 2007, 69 (43.4%) in 2008 and 48 (30.2%) in 2009. The average susceptibility in this period was: to penicillin 10%, methicillin 46%, erythromycin 73%, clindamycin 76%, fusidic acid 82%, rifampicin 78%, tetracycline 62% and ciprofloxacin 61%. Susceptibility to: vancomycin, teicoplanin, thrimethoprim-sulfamethoxazole, linezolid and quinupristin/dalfopristin was 100%. Only two isolates showed slightly elevated MIC for vancomycin (2 µg/ml).

Conclusion: The frequency of methicillin resistant

Staphylococcus aureus (MRSA) isolates is similar to the frequency of MRSA in the surrounding countries. Vancomycin is still the drug of choice for the treatment of

severe staphylococcal infections and the similar effect can be achieved with the newer antibiotics such as linezolid and quinupristin/dalfopristin.

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EPIDEMIOLOGICAL, CLINICAL AND LABORATORY CHARACTERISTICS AND TREATMENT OF THE PATIENTS WITH ABDOMINAL TYPHUS IN CLINIC OF INFECTIOUS DISEASES IN UNIVERSITY CLINICAL CENTER OF KOSOVO-PRISTINA FROM 2002-2009

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Background: Abdominal typhus is an acute enteric infective disease, bacteremic and septicemic disease caused by *Salmonella typhi*. This disease appears in sporadic form, but also in small and big epidemics, particularly in regions without water supply and sanitation infrastructure.

Aim: Presentation of epidemiological, clinical, laboratory characteristics and treatment of the patients with abdominal typhus in Clinic of Infectious Diseases in University Clinical Center of Kosovo-Pristina from 2002-2009.

Material and Methods: We analyzed retrospectively 31 patients based on epidemiological, clinical and laboratorial findings.

Results: The age of patients was from 1 to 67 years (1-15 y.o. 13 patients (M 6 - F 7); 16-49 y.o. 17 patients (M 10 - F 7); and one female patient 67 y.o.). 21 patients were from rural regions and 10 patients were from urban regions. Diagnosis was based on clinical, laboratorial (biochemical, serological and microbiological) and epidemiologic findings.

On 26 patients Widal Test was H1/160 and O1/160 and higher. High temperature was present on 26 (83.8%) patients, fever, vomiting, diarrhea, abdominal cramps, headache was present on 15 (48.4%) patients, and more rare were: epistaxis 2 (6.45%) patients, back pain 3 (9.67%), sweating 2 (6.45%), fatigue 4 (12.9%) patients.

From clinical findings, hepatomegaly was present on 15 (48.4%) patients and splenomegaly on 9 (29%) patients. Moderate erythrocyte sedimentation rate was present on 6 (19.3%) cases, and high erythrocyte sedimentation rate was present on 12 (38.7%) cases. Moderate leucopenia 9 (29%) cases; moderate anemia 15 (48.4%) cases, moderate leukocytosis 5 (16.1%) cases. Higher incidence of hospitalization was recorded in 2002 with 21 (67.74%) cases, in 2003 - 3 (9.67%) cases, 2004 - 2 (6.45%), 2005 - 2 (6.45%), 2006 - 1 (3.2%), and 2009 2 (6.45%) cases.

They were treated with Cotrimoxazole-Trimethoprim (6 cases), Ampicillin (2 cases), Chloramphenicol (24 cases), Ceftriaxone (5 cases), Ciprofloxacin 1 case.

Duration of treatment was from 5 to 21 days; In 41.3% of cases was 14 days. All patients were discharged from the clinic with improved clinical condition.

Conclusion: Improvement of social conditions decreases frequency of the disease and use of antibiotics enables successful treatment.

Key words: *Salmonella typhi*, abdominal typhus, typhoid fever, chloramphenicol, Cotrimoxazole-Trimethoprim, Ampicillin, ceftriaxone, ciprofloxacin, high fever, infectious disease, Widal test.

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ANTIMICROBIAL SUSCEPTIBILITY OF ENTEROCOCCI FROM BLOOD CULTURES DURING THE PERIOD 2002-2009

Stosovic Branka*, Tomic T., Jovanovic M., Lavadinovic L., Poluga J., Milosevic I., Stevanovic G., Milosevic B., Dulovic O., Pavlovic M., Dokic Lj., Pelemis M., Svabic-Vlahovic M.

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Background. The aim of this survey is to perform the retrospective study of the enterococcal strains isolated at the Bacteriology laboratory during the period 2002-2009, before and after the occurrence of first vancomycin resistant enterococcus (VRE) in blood cultures.

Methods. A total of 79 enterococci were obtained from patient's blood cultures in the period of 8 years. Blood cultures have been processed on Bactec 9240 system. The enterococcal strains were further identified by the use of API Strep and Vitek 2 systems. Susceptibility testing was

performed by disk diffusion method, according to the CLSI guidelines, and MICs were determined using Vitek 2 system. Results. In the period of 2002-2005, 17 enterococci were collected and in the period 2006-2009 that number was 62. The identified species were: *E. faecalis* (41; 51,90%), *E. faecium* (27; 34,18%) and *E. durans* (2; 2,53%), while 9 (11,39%) Enterococci could not have been identified. The first VRE from blood culture was isolated in 2006 and it was the only VRE (16,66%) obtained from this kind of specimens in that year. In 2007 the VRE number increased to 6 (50%). In 2008 the VRE number was 6 (28,57%) and in 2009 6 (26,09%). Comparing susceptibility of enterococci before and after the occurrence of first VRE in blood cultures we found that the overall susceptibility to ampicillin fall (88,20 to 41,94%), as well as susceptibility to ciprofloxacin (29,40 to 20,69%) and vancomycin (100 to 69,35%). Susceptibility to tetracycline has

not been changed (35,29 to 35%). Susceptibility of *E. faecalis* remained almost the same to ciprofloxacin while it decreased to ampicillin (100% to 71,42%) and vancomycin (100% to 85,71%). *E. faecium* susceptibility to ampicillin decreased (33,33% to 4,35%) as well as to vancomycin (100% to 45,83%), and it remained 0% to ciprofloxacin. The both strains of *E. durans* were susceptible to all antibiotics tested. The average susceptibility to gentamicin high doses was 29,49%, to streptomycin high doses 27,27% and to linezolid 100%. Conclusion. Our results imply that ampicillin is not efficacious to *Enterococcus faecalis* as good as it has been two years before. Vancomycin was efficacious for the examined strains of *E. durans*, but other enterococci were less susceptible to this antibiotic. For VRE linezolid is drug of choice for treatment of severe infections caused by this organism.

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TREATMENT OF CHRONIC HEPATITIS C WITH PEGYLATED INTERFERON AND RIBAVIRIN- OUR EXPERIENCE

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Combined therapy with weekly injections of pegylated interferon alfa (Peg-IFN) and daily ribavirin is currently the standard treatment for chronic hepatitis C (CHC). The goal of this study was to show the predictors of response to treatment.

Results: 280 patients with CHC were treated with combined therapy Peg-IFN alfa 2a and ribavirin. 14.29% of patients have been previously treated with standard IFN alfa + ribavirin ili/i PegIFN + ribavirin. After the completion of therapy, patients were followed 6 months to 5 years. In 2.14% of patients the therapy was stopped due to serious side effects: hiperbilirubinemia, depression, agranulocytosis, vasculitis, pneumonitis, erithema exudativum multiforme and a pruritus resistant to therapy. 1.07% of patients selfinitially stopped the treatment. 12.5% of patients didn't have an viral response (EVR - nondetectable RNA HCV after week 12, or viral load declined by > 2 log). Transitory viral response (nondetectable RNA HCV after week 12 but detectable at the end-of-treatment) was found in 6.27%. Patients without EVR and with transitory viral response were marked as NR (в•эяnon responderв•™), 19.19%. Relaps of the HCV

infection (nondetectable RNA HCV at the end of treatment, but detectable during the following 6 months) was noted in 11.07% of patients. Sustained viral response (SVR в•™ nondetectable RNA HCV 6 months following the completion of therapy) was found in 69.37% of patients.

By analysing the predictors of the viral response, a statistically significant difference was found ($p < 0.05$) with: age of patients <40 years SVR 84.93% v.s. >40 years 51.20%; duration of infection less than 20 years SVR 71.60% v.s. 47.30% more than 20 years; virus genotype 2 or 3 SVR 81.91% v.s. 62.71% genotype 1 and 4; without hepatic steatosis SVR 73.18% v.s. 52.94% with steatosis. Rates of SVR are also influenced by advanced hepatic fibrosis: 78.89% v.s. 40.62%; and correction of dose of Peg-IFN 73.55% v.s. 56.45%. No statistically significant difference was found between the response to treatment and gender, ALT level, dose correction of ribavirin, thyroid gland malfunction, presense of autoantibodies and viral load ($p > 0.05$). Conclusion: The treatment of CHC should be individualised and guided by the number of viruses and host parameters.

ANTIBIOTIC CONSUMPTION IN A REHABILITATION UNIT

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The aim of this study is to present antibiotic consumption during a one-year period in a rehabilitation unit and to compare these values with the results of a similar regional retrospective study.

METHODS: We studied all the antibiotic treatments given in a 90- bed rehabilitation department during the year 2008. Antibiotic consumption was defined by the number of defined-daily-doses (DDD) and expressed as DDD per 1000 patient-days and DDD per 100 admissions. We calculated these indexes in every class of antibiotics used during this period. We compared these results with the values reported in a larger study performed in 121 similar institutions in South-West France (7036 rehabilitation beds) during year 2007 (Politique de bon usage et consommation des antibiotiques. Résistance bactérienne; Données 2007 CCLIN Sud-Ouest; Groupe hospitalier Pellegrin 33076 BORDEAUX: www.cclin-sudouest.com)

RESULTS: During the year 2008, 828 patients were admitted and 25611 bed-days were notified. Total antibiotic consumption was 194 DDD/1000 bed-days and 600 DDD/ 100 admissions; these values were similar with those found in the larger study: 220 DDD/ 1000 bed-days and 551 DDD/100 admissions. Repartition expressed in DDD/1000 bed-days was

following: Penicillins: 64; Third generation cephalosporins: 12; Macrolides and synergists: 27; Quinolones: 43; Sulfamides: 11; Aminoglycosides 3; Cyclines: 2; Glycopeptides: 5; Imidazoles: 2; Rifampicin: 19; Others: 6. These values were similar with those found in the larger study: 220 DDD/ 1000 bed-days and 551 DDD/ 100 admissions, with a similar distribution.

CONCLUSION: In this study, Penicillins were the most frequent prescribed drugs followed by Quinolones, Macrolides and Cephalosporins. When compared with the larger study, values were quite similar except a lower consumption of Amoxicillin/clavulanate but a larger use of synergists.

Antibiotic use has to be expressed in a standardized way in order to compare the values found in different departments. The study of antibiotic use appears important in order to minimize the cost of treatment and emergence of resistant strains of microorganisms. This latter goal seems important in rehabilitation units, where patients are often chronically infected. In this setting, consumption looks usually close to 200 DDD/1000 bed-days. An efficient way to decrease it could be to shorten durations of treatment by one day in the situations where it is feasible, following the well-admitted rules.

USEFULNESS OF SPUTUM GRAM STAIN AND CULTURE FOR DIAGNOSIS OF PNEUMONIA IN A GERIATRIC INSTITUTION

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The aim of this study is to evaluate sputum Gram stain and culture for bacteriological diagnosis of lower respiratory tract infection in geriatric inpatients.

METHODS: During a two-year period, from January 2007 to December 2008, we retrospectively studied all the sputum samples sent to the laboratory in a geriatric 26-bed unit (mean age : 80,5 years, mean hospitalization time : 33 days). Isolated microorganisms were separated following Gram coloration for bacteria and yeasts. Samples were shortly sent (<24 hours) and all submitted to examination before antibiotic therapy.

RESULTS: During the two-year period, 456 admissions and 16024 patient-days were notified. A total of 324 bacteriological isolates were sent to the laboratory and 42 sputum samples were studied (13%), corresponding to 9 samples/100 admissions and 3 samples / 1000 hospitalization

days. Among them, 24 samples allowed a bacteriological diagnosis (57%) and 35 samples showed prominent bacteria or yeast. Repartition (n=30) was following: Gram + : 16 (53%), mainly staphylococcus (14) including 2 MRSA, and pneumococci (2); Gram - : 14 (47%) mainly Pseudomonas (6) and Haemophilus (4), Moraxella (1), E Coli (1), Enterobacter (1), and Serratia (1).

CONCLUSION: Usefulness of sputum Gram stain and culture in Community-acquired pneumonia is controversial. Most of the studies conclude to a limited impact on treatment decision. However, in recent studies, this diagnostic test seems to present a better value than previously appreciated, particularly in pneumococcal pneumonia, allowing a bacteriological diagnosis in more of 50% cases. In this study, performed in geriatric inpatients, we found bacteriological diagnosis was guided in 57% cases.

Staphylococcus and pseudomonas were the prominent microorganisms, as it is reported in large-scale prevalence studies of nosocomial infections.

In geriatric units and in long-term care facilities, diagnostic tests for management of lower respiratory tract infections

are rarely performed. Bacteriological diagnosis could be helped by Gram stain and culture, allowing to adapt antibiotic therapy. Moreover, cost-efficacy of this method could be evaluated and improved by adjustment for bed-occupancy.

A CASE OF PARASITIC GRANULOMATOSIS INFECTION (BALANTIDIASIS) MIMICKING LYMPHOMA

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Introduction: Sometimes infection disease presents with toxic appearance and mimicking lymphoma. We report an 18-years-old boy who present with complaints of high fever and diarrhea. In work-up he has aortic lymphadenopathy, elevated ESR, anemia, pleural effusion and hepato-splenomegaly, so he candidates for diagnostic laparotomy and biopsy and Pathologist reports parasitic granulomatosis infection highly suggestive Balantidiasis.

Case presentation: An 18-years-old boy was admitted to our center (Alzahra University Hospital, Isfahan, Iran) with complaints of high fever and diarrhea. Eight days before admission, the patient began pain in the right upper quadrant of abdomen and accompanied with frequent, painful and bloody stools. Temperature peaked 40.3B°C with rising ESR (92mm/hr). His temperature in admission was 39.5B°C, blood pressure was 90/60 mm Hg, heart rate was 110 / minute, respiratory rate was 40 / minute. Erythema nodosum was seen on both legs. Wright agglutination test, blood and stool cultures were negative, Serologic tests for toxoplasma, human immunodeficiency virus (HIV) types 1 and 2, hepatitis B surface antigen, and antibodies against hepatitis C virus were negative, and PAS staining for fungal infection and Zeil-nelson for TB were negative. PPD was negative. Spiral CT Scan of the abdomen and pelvis confirmed hepatosplenomegaly and multiple small hypodense lesions in both lobe of the liver and the spleen. Also there was bilateral pleural effusion and large para-aortic lymph nodes. Skin biopsy showed an acanthosis with spongiosis in epiderma and perivascular infiltration of neutrophils was seen consistent with leukocytoclastic vasculitis. Because of progressive course of disease extended antibiotic was started and diagnostic laparotomy was done. Biopsies taken from spleen, liver and omentum revealed several granuloma composed of central suppuration surrounded by macrophagic zone and outer lymph mononuclear leukocytes and multinuclear giant cells and palisading granuloma. The bone-marrow was not consisted with lymphoma. Pathologist recommended the diagnosis of parasitic granulomatosis

infection, more probably Balantidium coli with abscess formation, peritoneum, liver, and spleen involvement. All antibiotics (no response to them) were discontinued and doxycycline was administered and the patient had dramatic response after 48 hours to doxycycline. Doxycycline continued for 2 weeks. Patient was followed for 1 year. He is in good condition and control CT revealed clearance of all the former lesions in spleen and liver. All the follow up control laboratory is normal.

Discussion: We report the case of a patient with fever, aortic lymphadenopathy, hepato-splenomegaly, elevated ESR, anemia related to Balantidiasis. This diagnosis was supported by positive results of tissue biopsy and progressive improvement after treatment with doxycycline. Malignancy was suspected initially particularly lymphoma, but extensive investigations failed to demonstrate any neoplasm. Because of negative findings, a parasitic infection was considered. B. coli is the largest and only ciliate protozoan that infects humans. Although Balantidium coli infection of humans is rare, it is most likely to occur in places where humans and pigs live in close contact. Infection has also been observed in non-human primates, and rodents have been experimentally infected. The infection is most frequently acquired by ingesting food or water contaminated by pig faeces, and it may be asymptomatic or may cause acute diarrhea. Common symptoms of Balantidiasis include chronic diarrhea, occasional dysentery, nausea, foul breath, colitis, abdominal pain, weight loss, deep intestinal ulcerations, and possibly perforation of the intestine. The acute, bloody and mucoid form of infection may be mild, severe or fulminating with numerous trophozoites in stools. The chronic form presents as intermittent episodes of diarrhea. Left untreated, fulminating acute Balantidiasis is reported to have a case fatality rate of 30%. Parasite invasion can extend to the appendix and ileum, or it may involve some extra digestive locations such as mesenteric lymph nodes, peritoneum, liver or lung. The parasitological diagnosis can be established by repeated microscopic examination of fresh stool samples and of tissue

scrapings obtained during endoscopy.

Conclusion: Balantidiasis is usually a benign and self-limited condition but fulminating acute Balantidiasis is reported. Diagnosis of Balantidiasis is often difficult in adults, requiring a high index of suspicion. Although there are few reports about Balantidiasis presenting with systemic disease, so in

patient with complain of fever, lymphadenopathy, hepatosplenomegaly and weight loss mimicking lymphoma, we should consider parasitic granulomatosis infection (i.e. Balantidiasis) in differential diagnosis.

Key words: Balantidiasis, Lymphoma, Leukocytoclastic vasculitis

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ANTIBIOTIC RESISTANCE RATES IN PEDIATRIC INFECTIONS BY ENTEROCOCCI

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BACKGROUND: Enterococci are increasing in importance as nososomal pathogens. They are the 3rd most frequent cause of infection in hospitals, responsible for about 12% of hospital infections.

AIM: to determine the antimicrobial resistance patterns of enterococci isolated from clinical specimens of pediatric patients treated at our Hospital.

MATERIALS and METHODS: 86 clinical isolates of enterococci were collected for further analysis during the period January 2006 through August 2009. Identification of microorganisms and susceptibility test were performed by the Vitek 2 (BioMerieuxB®, France). The minimum inhibitory concentrations (MICs) of five antimicrobial agents were determined by E-test method (SolnaB®, Sweden) for each isolate. Disk diffusion tests were also performed and the results were compared with those reported by clinical laboratory. Because gentamycin susceptibility tests showed inconsistent results in many isolates, MIC determinations by the micro-broth dilution method were also performed for these isolates. All isolates were tested for OI-lactamase production. Enterococcus faecalis ATCC 29212 was used as

a control.

RESULTS: 43 strains out of 86 strains tested were E.faecalis, 37 E.faecium, 2 E.gallinarum, 2 E.avium, 1 E.durans and 1 E.hirae. Major sources of these isolates included urine, tracheal secretions, traumas and only 5 E.faecalis from blood. The resistance rates (%) for E.faecium and E.faecalis were: ampicillin 74/28, ciprofloxacin 69/10, erythromycin 89/69, gentamycin high level 59/34, streptomycin high level 70/38, teicoplanin 6/0, tetracycline 26/69, trimethoprim/sulfa 97/90, vancomycin 6/0. 6 VRE strains (5 E. faecium from urine and 1 E.faecium from blood) developed high resistance to vancomycin and teicoplanin, suggestive that they belong to the phenotype VanA.

CONCLUSIONS: E.faecium showed higher resistance as E.faecalis. The high resistance to aminoglycosides and the presence of VRE strains consist a serious problem for the treatment of infections caused by them. Increased alertness should be given to the occurrence of multi-resistant E.faecium and mechanisms causing its abundance, such as selection via antibiotic pre-treatment or ineffective empirical antibiotic treatment.

THE RESULTS OF FLUOROQUINOLONE TREATMENT IN INFECTED ALLERGIC BRONCHIAL ASTHMA.

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OBJECTIVE: Bronchial infection favors, emphasizes and maintain respiratory allergic manifestations, in particular allergic asthma. Hereditary and personal allergic backgrounds, along with repeated treatments with antibiotics are drug sensitizing risk factors, as well as microbial resistance. It should be a therapeutic alternative, especially in primary and ambulatory medicine, where an antibiogram often is not possible. Fluoroquinolones are a therapeutic option in treating exacerbations of acute infections of bronchitis and asthma, as well of sinusitis and community-acquired pneumonia.

METHOD: Our study included a total of 46 people with allergic asthma to domestic and professional environmental factors, with infectious episodes. On a number of 28 persons was possible bacteriological examination of sputum and on a total of 18 persons the infectious germs found were: *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, *Moraxella catarrhalis*, *Escherichia coli*, *Pseudomonas aeruginosa*.

RESULTS: Clinical manifestations were: fever, purulent sputum, exacerbation of asthma. Administration of moxifloxacin was oral for 7-10 days, on female and male patients, aged between 21 and 66 years. Contributing factors: incorrect treatment of asthma, with failure to obey the therapeutic scheme, environmental factors (cold, humidity, pollution) and related pathologies: diabetes mellitus. The assessment was clinical, biological, paraclinical (spirometry). The patients had drug allergic polysensitization, for which were presented to the Cabinet of Allergology, with skin, respiratory and cardiovascular manifestations. Moxifloxacin tolerance was good, as was the change of the quality of life by 80%.

CONCLUSIONS: Fluoroquinolones (moxifloxacin) administered in acute bronchial infections of allergic asthma with drug polysensitization had a beneficial role, leading to clinical improvement and having a good tolerance.

Key words: allergic asthma, acute bronchial infections, drug sensitization, moxifloxacin.

THE RESULTS OF FLUOROQUINOLONE TREATMENT IN INFECTED ALLERGIC BRONCHIAL ASTHMA.

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20. HANTAVIRAL HAEMORRHAGIC FEVER IN MONTENEGRO

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Text:

Objectives: Hanta viral hemorrhagic fever presents as acute infection with hemorrhagic and renal complications. The causers of diseases are Hantaviruses /buniaviridae/. Hantaviruses chronically infecting the rodents in witch infection is going asymptotically. In man it's causing two fundamental clinical syndromes -HFRS (hemorrhagic fever with renal syndromes) and HPS hanta viral pulmonary distress syndromes.

Montenegro is endemic area for hanta viral hemorrhagic fever. The first HFRS cases are registered from 1954. The disease presents difficult forms of infections.

Methods: In period 1998 v- 2008 years, in Clinic Center of Montenegro, 145 cases with clinical diagnose of HFRS ware analyzed. Etiological confirmation was done by Indirect

Immune Fluorescence Methods /IIF/ to Virology Institute - Torlak in Belgrade.

Results: Etiological diagnosis was confirmed in 85% cases. In 15% clinical diagnosis was not confirmed. The examinations confirmed dominantly participation of co infective forms of diseases, Beograd / Dobrava, Seoul and Hanta serotype. In the past 3 v- 5 years, number of clinical HFRS cases, without etiological diagnosis is increasing. That fact obtains continuous research of new hanta viral serotypes.

The cases ware mostly registered in north parts of Montenegro /Bijelo Polje, Mojkovac, Kolasin/. Seasonal distribution of diseases, from March to November, has increasing number of cases from June to September. Dominant participation of ages from 16 v- 50 years, and professional exposed categories, is important epidemiological characteristic of infection. The clinical manifestation of HFRS is consequence of immunity response, failures of coagulation system and endocrinology

disturbances. With usual therapeutically treatment, in 91% cases we had success. Progressive course of renal insufficiency /RI/ had 6 % of the patients. In examined group, we had 3% death cases.

Conclusion: In Europe, Pumala virus is primary causer of less complicated forms of HFRS - endemic nephropathy/NE/ . Beograd - Dobrava Hantavirus is causer of difficult forms

of diseases with hemorrhagic complications. New examinations suggesting antigenic close relations between Beograd-Dobrava and Saremaa viruses.

Simultaneous participation of two or moor serotypes of Hantaviruses / coinfection/, are reflected in polymorphism, difficulties in clinical presentation of disease, problems of the diagnosis, and bed course of disease.

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ELECTRON TRANSFER IN THERAPEUTIC ALKALOIDS TRIGGERS ANASTOMOSIS IN TRAUMATIZED LIVER BLOOD FLOW.

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Bark was dried, milled and dissolved in methanol overnight and then filtered. The residue was concentrated and proteins were precipitated with a small amount of water. After the filtration, the solution was evaporated to dryness. The bark from the deciduous tree *Enantia chlorantha* was used as therapeutic alkaloid raw material. The method used was similar to that used for flavonoid, quercetin in pharmacognosy. The yield consists of five very similar bis-benzyl-isoquinoline alkaloids, maintaining functional control in aqua solution, molecule palmatine being the most sensitive to compensate for the others by hydrolytic change in the aqua solution. This means that the proportions of alkaloids remain roughly constant when isolated from natural sources. In this schematic structure, the electrons associated with nitrogen, are orphan, and the easiest to transform.

The pivotal electron transfer is achieved in the alkaloid extract by evaporating the alkaloids in dryness from the excess of water solution at 135oC. The electron transfer was detected with a capillary zone electropherogram scan. The UV-200 nm scan was used to monitor the changes in electrons. A remarkable alteration was seen with nearly half

of the specific, toxic quaternary peaks having changed to the non-toxic side. One important peak dominated the scan, this peak representing 40-45% of total scan intensity. If it is less, the electron transfer must be repeated. Because of diminished quaternary activities, the toxicities were diminished about 100-fold. For verification, alkaloid extract was injected into laboratory rodents as only a 1/100 diminished dose is sufficient for animal tests.

Three different lesions were selected for verification: D-GalN, ThAA and, Allyl-Alcohol. The curative influence of electron-transfer-triggered anastomosis on traumatized liver was detected. It was observed in all cases under study, irrespective of injury origin. The cellular mess caused by foreign material in tissue and dispersed cells began to be arranged so that alternative paths for blood flow to portal veins were facilitated via opened sinusoids. At the same time, the mitosis of hepatic cells was developed. The influence of electron transfer in these alkaloids on dopamine subtypes in the brain should be investigated in detail to solve this mystery. According to these findings, the electron transfer provokes anastomosis: this seems to be the key for a successful liver remedy irrespective of hepatic disease.

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LATENT TUBERCULOSIS IN IMMIGRANTS IN CHANIA, CRETE

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OBJECTIVES: Screening for latent tuberculosis (LTB) in immigrants in Chania of Crete, using the mantoux test in a prospective study from 2005/11 to 2008/12. Immigrants from high prevalence countries are at high risk for tuberculosis reactivation. LTB is detected by a positive reaction to PPD skin test (Mantoux) or high levels of interferon-gamma (IFN-Oi) release assays (IGRAs).

METHODS: In order to avoid false negative results

individuals with malignancies and immunocompromised were excluded. After a brief questionnaire was filled in, intradermal tuberculin (5U PPD) was administered and interpreted 48 to 72 hours later. Induration with diameter >10 mm was considered positive for immigrants from developing countries and >15mm from developed ones.

RESULTS: 2036 individuals were studied, 51% was male. The average age was 30 B±10 years and the median time of

residence in Greece 31 months. A total of 34% of immigrants had LTB: 33,5% of immigrants from East Europe, 24% of immigrants from Southeast Asia, 45% of immigrants from Africa and 6,8% of immigrants from developed countries (USA, Australia, Western Europe) The percentage of patients with LTB is affected by the country of origin, observing lower percentage from developed countries

($p < 0.05$) and the highest in immigrants from Africa while 45% of all immigrants have a negative mantoux.

CONCLUSION: The percentage of LTBI in immigrants in Chania is high. The developing country of origin is a risk factor for LTB which could lead to reactivation of the disease due to the conditions of migration and living.

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CHEMOPROPHYLAXIS AGAINST TUBERCULOSIS AND COMPLIANCE OF IMMIGRANTS IN CRETE, GREECE

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OBJECTIVES: The study of compliance of immigrants with latent tuberculosis (LTB) in Chania of Crete by a prospective study from 2005/11 to 2008/12. It is known that chemoprophylaxis for patients with LTBI reduces by far the risk of reactivation of the disease and is an affective method for its control.

METHODS: The immigrants were from Eastern Europe, Southeastern Asia, Africa and fewer from developed countries and were examined at the pulmonary department of the hospital for LTB using the mantoux technique in order to obtain their health certificates necessary for their stay permit in Greece, while there was telephone communication every month to check upon their compliance.

RESULTS: 2036 immigrants were studied, 51%,. 691(34%) had LTB (positive mantoux) and were tested with chest x-ray and sputum or gastric fluid cultures for B Koch mycobacterium.

One of them had active tuberculosis.19%(2.7%) had radiographic findings on chest x-rays consistent with prior TB. There was given a prescription for oral isoniazid for 9 months to the immigrants with LTB and instructions for regular blood tests to prevent any side effects. Only 20 (2.9%) complied with the treatment. 36(5, 2%) didn't complete it and 92% never received it.

CONCLUSION: The proportion of immigrants with LTB in Chania is high. But the one that doesn't receive chemoprophylaxis is provocatively high although they've been directed otherwise and probably they-ll become the cause of increase of incidence of tuberculosis in our town. Greek authorities should take this under consideration and maybe receiving chemoprophylaxis ought to be obligatory for acquiring a stay permit.

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TUBERCULOUS PLEURAL EFFUSION: UNUSUALL CLINICAL FEATURES

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OBJECTIVES: The presentation of a case of tuberculous pleural effusion (TPE) with rare clinical features. TPE is only 5% of the clinical features of tuberculosis.it commonly starts as an acute respiratory disease with fever, cough without sputum production, and pleuritic pain. Tuberculin skin testing (using the Mantoux technique) may be negative initially, while growing bacilli in pleural fluid cultures is rare.

METHODS: Physician female of 39 years-old, one of the writers, non smoker, is examined by a pneumonologist because she feels and hears (without a stethoscope) intense pleural rub throughout inspiration as well as expiration, on the right hemithorax occasionally which was confirmed on auscultation. Nevertheless the chest x-ray (face-profile), the

ultra sound of the heart and the blood tests were normal. The patient is put under observation and she continues to hear the sound. For 25 days the chest x-rays remain normal while a month later the patient suffers from fever, shivers, weakness, fatigue, pleuritic pain. In auscultation of the lungs the breath sounds were normal except a local reduction at the right bottom. Blood tests: raised CRP and ESR and negative mantoux skin test. The chest x-ray revealed limited pleural effusion on the right and the chest CT detected additional pulmonary parenchymal lesions of the right lower lung lobe. A thoracentesis for diagnostic purpose was done.

RESULTS: It was a lemphocytic exudative pleural effusion (85% lemphocytes) with high rates of LDH (2003u/l).

Afterwards antituberculous treatment was administered to the patient (6INH-6PIF-2PZ-2ETH). She was clinically improved and radiological findings were reduced in seven days. There was complete radiological improvement and positive Mantoux test in two months. The Ziehl Nielsen stain, the cytology test and several tests for detection of either viral or bacterial

infection or autoimmune diseases were negative. ADA of the pleural fluid was 52u/l. The pleural fluid's culture for B Koch was positive after 1.5 months.

CONCLUSION: Tuberculosis still amazes us. It should be highly suspected and in certain cases appropriate treatment ought to be administered before confirmation of the diagnosis.

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AN INTERESTING CASE OF PULMONARY ACTINOMYCOSIS

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OBJECTIVES: The presentation of an uncommon case of pulmonary actinomycosis by A. Meyeri, its early diagnosis and effective treatment. Actinomyces is gram-positive anaerobic bacterium. They are saprophytic organisms of the oral cavity of patients with poor dental hygiene. It rarely causes pulmonary actinomycosis, diagnosis is hard to confirm and requires long-time treatment. The species most commonly found is actinomyces israelii while A. meyeri is rare. **METHODS:** A 40-year-old male smoker of 70 pack-years with no previous medical history was admitted in the pulmonary department with low-grade fever up to 37.7 Celsius, cough and mucopurulent expectoration for two months already and weight loss of 10 kg in that time. Physical examination found severe periodontal disease and blood tests revealed raise of the WBC count and CRP. Chest X-ray revealed a homogenous (shadow) opacity in the posterior segmental bronchi of the right upper lobe of the lung. Piperacillin-Tazobactam and Clindamycin were intravenously administered. Chest computed tomography (CT) revealed a

heterogeneous shadow with a central area of lower density. There were no abnormal bronchoscopic findings while all sputum tests (cytology and cultures for common bacterium and B-Koch) were negative. Next the patient underwent CT-guided fine needle aspiration of the lesion and the aspirated material was foul-smelling frank pus. A narrow chest tube (8F) was inserted at the same time and there were drained 250ml of pus.

RESULTS: The patient is improved right after the drainage. Positive culture results in the aspirated material for Actinomyces Meyeri came out 7 days after patient's administration date. The patient is since treated with Penicillin though he had an allergic reaction to Penicillin and a gradual desensitization was done. He's been administered Penicillin V 6000000IU/per day for 2, 5 months now with minor radiological findings and he remains asymptomatic.

CONCLUSION: The early diagnosis of pulmonary actinomycosis proves to be life-saving for the patient.

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PERIPHERAL NEUROPATHY OF TUBERCULOUS CAUSE

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OBJECTIVES: The presentation of a case of tuberculous neuropathy in a patient after ending the administration of isoniazid because of hepatic disorder.

METHODS: A female patient was admitted to our hospital because of periodic intermittent afternoon fever up to 40°C four months ago, non-productive cough and pleuritic pain on the right side for the past ten days. Physical examination: reduction of intensity of the breath sounds at the bottom of the right lung, diffuse wheezes. Chest x-ray: minor pleural effusion on the right. ECG: normal. ESR: 94, CRP: 10.8, normochromic normocytic anemia, BUN, B12, folic acid, ferritin and the rest blood tests were all normal. The patient was

considered to suffer from respiratory tract infection and was treated with ampicillin/sulbactam and cinolon for ten days with no significant improvement. Blood and urine cultures, Vidal, Wright, monostest, hepatitis blood tests and antibodies for CMV, and thorough tests for autoimmune disorders were negative. The pleural fluid was a lymphocytic exudative effusion with low glucose rate and rates of adenosine adenodiaminidase and lysozyme were indicative of tuberculous pleurisy. Cytology examination and Ziehl Nielsen stain of the pleural fluid were negative. The pleural effusion was considered to be of tuberculous cause and the patient was treated with isoniazid, rifampicin, ethambutol,

pyrazinamide and pyridoxine. 15 days later the patient was released from the hospital improved. She was once more admitted 20 days later because of increased serum level of aminotransferases. The anti-tuberculous regimens were discontinued. 7 days later the patient mentioned muscle weakness that was deteriorated in the following days. An electromyogram (EMG) and a lumbar puncture were done (LP).

RESULTS: Mycobacterium of tuberculosis was isolated in cultures of the pleural fluid and tuberculous pleurisy was confirmed. The cerebrospinal fluid from two LP in between

16 days was normal and Guillen Barre syndrome was excluded. The EMG revealed an axonal sensory motor neuropathy. The isoniazid peripheral neuropathy was also excluded because it's dose dependent and it doesn't deteriorates after stopping its administration and furthermore the patient was under prophylaxis with pyridoxine.

CONCLUSION: Tuberculous peripheral neuropathy is rarely described in international references. So attention is required in differentiating from the one caused by isoniazid which is a common treatment to those with tuberculosis.

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PULMONARY AND SOFT TISSUE TUBERCULOSIS: AN INTERESTING CASE

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OBJECTIVES: The indication of constant alertness of the physician for detecting tuberculosis (TB), by presenting a rare clinical manifestation of the disease.

METHODS: A male patient of 92 years of age was admitted in the pathology clinic for investigating weakness, fatigue and feverish occurring three days ago. The following are mentioned in his previous medical history: moderate chronic renal insufficiency, osteoporosis, arterial hypertension, rheumatoid arthritis (methylprednisolon for 5 years till then), asthma, operation for duodenum diverticulosis. Physical examination: fine crackles in the left middle lung area. Radiological tests: obscuration of the left hilar by cellular infiltrates on the chest x-ray, areas with consolidation and atelectasis with air bronchogram of the left lower lobe and pleural thickening bilateral on the computed tomography. Blood tests: iron-deficiency anemia, normal white blood cell count, moderate renal insufficiency, three digit ERS. Negative sputum cultures for usual bacterium. The patient was evaluated as being suffering from community acquired pneumonia and proper antibiotics were administered. Anemia was investigated any further at that point and the

patient was released with the recommendation to be checked again soon which he neglected. 45 days afterwards he was admitted in the surgery department because of fever and infection of soft tissue on the right antibrachium: there was a localized painful fluctuant swelling in the size of an egg on the inner surface. The shadow on the chest x-ray was enlarged. Blood tests were unchanged except a raise of the polymorphonuclear cell count. The swelling was considered to be an abscess. Repeated punctures produced a sterile macroscopically purulent fluid with plenty of neutrophils. The abscess was drained.

RESULTS: Bacillus-Koch was observed on the direct microscopic examination of the smear of the drained fluid and sputum. Isoniazid, rifambicin and ethambutol were administered. The patient was released improved with the diagnosis of pulmonary and soft tissue (cutaneous) tuberculosis.

CONCLUSION: Tuberculosis should worry the doctor especially in immunocompromised elderly patients in order to avoid troublesome and deficiency in the differentiation process.

TUBERCULOSIS DURING PREGNANCY

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OBJECTIVES: The presentation of a tuberculous during pregnancy case that wasn't early recognized as chest x-ray wasn't performed on time and its immediate diagnosis right after chest x-ray which guaranteed the health both of the mother and the baby. It is known that if a tuberculous infection is misdiagnosed during pregnancy it's dangerous for the mother as well as the infant. It could result to neonatal or more rarely congenital tuberculosis which both present high mortality rates.

METHODS: Female of 24 years old and in the 30th week of pregnancy visited the pulmonary department according to her gynecologist's order because of cough and mucoid expectoration, since the beginning of her pregnancy. She's been treated with expectorants and bronchodilators while a chest x-ray wasn't done to protect the fetus from radiation. Physical examination revealed crackles on auscultation of the upper part of the right hemi thorax while blood tests revealed anemia and high rate of CRP and LDH.

Then a chest x-ray with lead cover round the pregnant woman's abdomen was done which demonstrated infiltrates in the right upper and middle lobe of lung.

RESULTS: Sputum smear examination using the Ziehl-Nielsen stain was positive for acid fast mycobacteriaceae in a few hours while its cultures identified Koch Bacillus 1,5 months later. The pregnant woman was treated with isoniazid, rifampicin and pyridoxine for 9 months and ethambutol for 2 months without experiencing any side effects. Remission of the cough occurred after two weeks and chest x-ray improved a month later. She gave birth to a healthy girl of 3500 kg 8 weeks later, who had the BCG vaccine and isoniazid for 2 months.

CONCLUSION: Pregnancy shouldn't be an obstacle to a chest x-ray if symptoms from the respiratory tract are present as long as the abdomen is properly covered when necessary. Besides, TB should be highly suspected in such a population group.

A RARE CASE OF GENITAL INFECTION DUE TO NON TUBERCULOUS MYCOBACTERIUM

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OBJECTIVES: The presentation of a rare case of epididymitis because of non tuberculous (designated "atypical") m. avium complex.

METHODS: A patient of 86 years old was admitted to our hospital because of scrotal swelling on the right side with mild pain for two months and no other accompanying symptoms. The physical examination revealed hydrocele, enlargement and slight pain of the right orchid (testicle) and epididymis. The rectal examination with a gloved finger was negative for prostate induration. General blood tests were normal. Microscopy of urine specimens was negative as well as the culture for routine bacterium, furthermore 7 urine cultures for acid-fast bacilli were negative, mantoux 12mm, chest x-ray face was normal. An intravenous pyelogram detected no anatomic or functional abnormalities along the urinary tract. The scrotal ultrasonography demonstrated the right enlarged testicle containing a cavity of extreme size with multiple septate bands and solid areas.

RESULTS: The swelling was suspicious for malignancy. The

patient underwent a right orchiectomy. Histological examination demonstrated granuloma formation with caseation at the top of the epididymis, indicative of tuberculosis. The patient was treated with isoniazid, rifampicin, ethambutol for two months till he gave up on his own and there was a recurrence. He then received the same treatment from start leading to the symptoms recession temporarily and reappearance of the hydrocele on the right. In the culture of the fluid from the hydrocele m. avium complex was isolated resistant to all first-line antituberculosis drugs. The patient was then treated with isoniazid, rifampicin, ethambutol, clarithromycin and ciprofloxacin while waiting for the drug susceptibility testing to the reserve antituberculosis drugs.

CONCLUSION: Tuberculous epididymo-orchitis although rare it should be considered in differentiating diagnosis of scrotal swelling. A recurrence in spite of the proper medical treatment should suggest that there is a possibility of non tuberculous mycobacterium. M. avium complex is a very scarce cause.

LIVER DYSFUNCTION IN MURINE TYPHUS: A STUDY OF 161 CASES

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The most frequent biochemical abnormality in murine typhus is a mild elevation of AST but ALT and LDH are often elevated in parallel. A hundred and sixty-one patients with compatible clinical status of murine typhus and high serological titers of antibodies against *Rickettsia typhi*, were studied from our team between January 1993 and December 2007. For the study of their hepatic function three serum samples were obtained from each patient. The first sample was obtained on admission, approximately 9 days after the onset of the disease. The second sample approximately two weeks after the first. The third sample, taken from the one third of the patients, was obtained one month after the second. On admission (first sample) 139/160 patients (86.8%) presented an elevation of AST, 111/160 patients (69.4%) presented an elevation of ALT and 134/157 patients (85.3%)

presented an increase of LDH. The median value of AST, ALT and LDH was 59.0 U/L, 52.0 U/L and 338.0 U/L respectively. Two weeks later (second sample) 126/150 patients (84.0%) presented an increase of AST, 112/148 patients (75.7%) presented an increase of ALT and 117/145 patients (78.0%) presented an elevation of LDH. The median value of AST, ALT and LDH was 52.0 U/L, 53.5 U/L and 333.0 U/L respectively. One month later (third sample) 14/42 patients (34.0%) presented an increase of AST, 12/42 patients (29.0%) presented an increase of ALT and 8/42 patients (19.0%) presented an elevation of LDH. The median value of AST, ALT and LDH was 28.0 U/L, 24.0 U/L and 142 U/L respectively. Our study showed that the time of normal restoration of liver function was about two months after the onset of the disease.

BIOMEDICINE APPLICATION OF STAPHAGES (COCKTAIL) FOR MRSA DIABETIC FOOT INFECTIONS, WOUNDS, BURNS AND ABSCESS CASES

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Background: Since MRSA is one of the most resistant organisms for antibiotics, and due to the lethality and specifications of Staphages for MRSA the evaluation and the efficacy of Staphage therapy was performed in medical cases of methicillin resistant *Staphylococcus aureus*, MRSA, skin infection in wounded patients (surgical and accidental), diabetic foot infections, burn and abscess cases.

Methods: In our study, a mixture of ten phages, differed in their virulence to MRSA isolates were used with all thirty patient isolates that were lysed completely by spot-test. The problem of bacterial resistance to methicillin which was 39.8% in our study, were solved by the well-chosen mixture of staphages. Our used cocktail in therapy was identified based on biological, molecular and electron microscopy characterizations. It had two temperate phages, which had effect on the resistant bacteria.

Results: In the study group for 30 patients of MRSA in different local skin infection cases at different hospitals/

Jeddah; showed that phage therapy was highly effective in 90 % of the cases especially diabetic foot infections. Phages were more effectively targeted to growing bacteria in local infections and were administered in a limited number of small doses over a short period. Phages eliminated pathogen more rapidly in five days and effectively than standard antibiotics. **Conclusion:** We recommend the application of such bacteriophage solution of Bionanostructure virus particles (cocktail) on similar human or animal skin infection cases. As well as a commercial pharmaceutical dressing product by is suggested to be executed by any of the national or international drug company that would embrace this staphage cocktail on a high level of productivity, and we also are in need of further Cryo-EM, computation simulation and modeling studies on Bionanostructure virus particles to understand the conceptions of its effective mechanism at a molecular level. *Staphylococcus aureus*, MRSA, Staphage therapy, Bionanostructure virus particles (cocktail)

BRUCELLOSIS AND PULMONARY DISEASES

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Background/Aim: Symptoms of brucellosis are protean in nature, and none is specific enough to support the diagnosis. Pulmonary symptoms including cough and dyspnea develop in up to 19% of patients with brucellosis; however, these symptoms are rarely associated with active pulmonary involvement. Hereby, We studied the prevalence of brucellosis in patients who had a chronic cough and sputum smear was negative for tuberculosis .

Material and Methods: During 12 months, from Dec 2008 to Dec 2009, we evaluated all patients who referred to Infectious Clinics in Boo-Ali hospital (located in Zahedan, Southeastern Iran) because of chronic cough. Patients who were enrolled in our study had a chronic cough with duration more than 3 weeks and three to six samples of sputum were negative for tuberculosis. Blood samples tested for STA and 2ME. Titer more than 1/160 was positive and

the patient was treated by standard regimen.(Doxycycline and Streptomycin).

Results: Among 93 patients (54 male, 39female) with age range 15-69 years, 7 patients (6.5%)(5 male, 2 female) had a positive test for brucellosis. But the Chest-X ray was normal in these patients.Only one patients had a mild infiltration in lower lobe of right lung. All patients except whom had a abnormal chest x-ray responded to therapeutic regimen. Therefore, the last patient referred to Internist for bronchoscopic evaluation.

Conclusion: Localized complications of brucellosis are typically observed in patients with acute disease or chronic untreated infection, but our study showed even in endemic area, although, chronic cough and bronchitis may develop in persons with brucellosis but, pneumonia due to brucellosis is very rare.

BLOOD STREAM INFECTIONS IN ICU AND NON-ICU PATIENTS IN A TERTIARY CARE HOSPITAL: A THREE-YEAR ANALYSIS

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Purpose. To study retrospectively the bacterial and fungal pathogens of blood stream infections (BSI) and their resistance rates to antimicrobial and antifungal agents, for guiding appropriate empirical therapy in ICU and non-ICU patients.

Methods. All cases of BSI from January 2007 to October 2009 were reviewed. The blood samples were inoculated in BacTec bottles and incubated in the automated BACTEC 9240 system. Identification of the clinical isolates to the species level was performed by standard laboratory tests and MicroScan system. Antibiotic susceptibility testing was performed by the disk diffusion technique, and the MICs were determined by MicroScan and the Etest strips. Carbapenemase-producing *K. pneumoniae* (CPKP) was detected by Hodge test and by EDTA and boronic acid (600 Ojg/disk) inhibition in a combined disk method. The KPC and VIM-producing *K. pneumoniae* isolates were confirmed by PCR.

Results. Culture-positive BSI occurred in 810 patients, 277

(34.2 %) in ICU and 533 (65.8%) in non-ICU. In the ICU patients, Gram-negative and Gram-positive bacteria, mixed pathogens, anaerobes and fungi were isolated from 26.3%, 57.8%, 11.2%, 1.4%, and 3.2% respectively, while among the non-ICU patients from 35.5%, 52.3%, 8%, 2%, and 2% respectively. The most common Gram-negative pathogen isolated in both ICU and non-ICU patients was *E. coli*, followed by *K. pneumoniae* (28.8%, 17.8%, and 48.2%, 10.3% respectively). The most common Gram-positive blood isolates from ICU and non-ICU patients were CoNS followed by *S. aureus* (73.5%, 12.2% and 65%, 12.2% respectively). *E. coli* blood isolates from both ICU and non-ICU BSI showed a low resistance rate to extended spectrum OI-lactamases (15% and 8% respectively), while *K. pneumoniae* showed a high resistance rate (69%, and 30% respectively). Nine blood isolates of KPC-producing *K. pneumoniae* were susceptible only to gentamicin and colistin (100%) and tigecyclin (33%). Two blood isolates of VIM-producing *K. pneumoniae* were susceptible only to gentamicin, colistin,

aztreonam and tigecyclin (except for one, which was resistant to aztreonam because of ESBL detection). The methicillin resistance rate of CoNS and *S. aureus* was 75% and 32% in ICU and 72% and 30% in non-ICU isolates respectively.

Conclusions. The predominant pathogens isolated from both ICU and non-ICU BSI are gram-positive. The emergence of multidrug resistant CPKP in ICU patients and the high resistance rate of CoNS to methicillin should be taken in to account, when empirical treatment is needed.

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EPIDEMIOLOGICAL STUDY OF PREVALENCE OF EPSTEIN BARR VIRUS (EBV) INFECTION AND SEROPOSITIVITY IN PATIENTS OF A GENERAL HOSPITAL

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INTRODUCTION: Our objective was the detection of active infection, specific IgM and IgG antibodies against EBV and the determination of seropositivity frequency in outpatients and inpatients of our general hospital.

MATERIAL and METHOD: Our sample consisted of 190 patients, 51.58% (n=98) male and 48.42% (n=92) female, during the period January 2008-June 2009. Of them 84.21% (n=160) were inpatients and 15.79% (n=30) outpatients. 43.16% (n=82) were children and 56.84% (n=108) adults. Detection of VCA-IgM antibodies and a 4fold increase in the IgG titer between the first and the second sample (3 weeks later) confirmed an active EBV infection (primary or reactivated). The seropositivity was confirmed by the presence of anti-EBNA (EBV nuclear antigen) IgG. The detection of IgM and IgG antibodies was performed with a symplhrvthei.

RESULTS: An active infection was confirmed in 22.1% of

the patients (n=42). Of them 45.23% (n=19) were children (12 boys and 7 girls) and 54.77% (n=23) adults (2 men and 9 women). 82.6% (n=19) of the adults group were immunosuppressed indicating a perhaps a reactivated infection. The overall prevalence of EBV seropositivity amounted to 82.63% (n=157). The prevalence of EBV seropositivity was 67.1% (n=55) and 94.4% (n=102) in children's and adult's population respectively.

CONCLUSIONS: EBV is an ubiquitous virus, while almost 95% of the adults are seropositive. The majority of patients suffering from an acute infection are children, teenagers, young adults and immunosuppressed patients. Serological tests should be performed in immunosuppressed patients, because EBV along with CMV cause life-threatening infections in patients suffering from immunosuppressive conditions.

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COMPARISON OF BACTERIOLOGY OF THE EXTERNAL AUDITORY CANAL FROM PATIENTS AND HEALTHY SUBJECTS

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Objective: Cerumen as known as ear wax, produce regularly by cerumen and lipid secretary glands. Regarding affect of humid weather in Mazandaran Province (north of Iran) on prevalence of pathogen microorganisms, this study was performed to determine the bacterial flora of the ear in patients with acute otitis externa and comparing it with healthy subjects.

Methods: In this case-control study, cerumens collected and cultured from 40 patients with clinically diagnosed Acute Otitis Externa and 80 healthy subjects. After growth and diagnosis of their colonies, data collected and enrolled in

designed charts for comparing between two groups. The obtained Data were analyzed using SPSS software.

Results: In case group, Staphylococcus (20.8%), Bacillus spp. (18.9%) and Pseudomonas spp. (11.3%) and in control group Staphylococcus Epidermidis (38.7%) and Diphtheroid (22.4%) were the commonest bacteria.

Conclusion: Normal bacterial flora of ear has inhibiting activity on growth of pathogenic bacteria probably, and components (e.g. in oint like) with normal and healthy cerumen (Cerumen Therapy) could be use in patients with Acute Otitis Externa. This is especially recommended in

cases such as Recurrent Otitis Externa due to non-complete formation of cerumen. Further studies are warranted to

evaluate the therapeutic implication of these findings.

Key words: Cerumen, Bacterial Flora, Acute Otitis Externa

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FUNGAL FLORA IN CERUMEN FROM PATIENTS WITH ACUTE OTITIS EXTERNA COMPARISON TO HEALTHY SUBJECTS (BABOL 2009)

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Objective:

Ear wax (Cerumen), produce regularly by cerumen and lipid secretary glands. Regarding affect of humid weather in Mazandaran Province (north of Iran) on prevalence of opportunistic microorganisms, this study was carried out to determine the fungal flora of the ear canal in patients with acute otitis externa and comparing to healthy subjects.

Methods: In this case-control study, cerumens collected and cultured from 40 patients with clinically diagnosed Acute Otitis Externa and 80 healthy subjects. After growth and diagnosis of their colonies, data collected and enrolled in designed charts for comparing between two groups. The Data were analyzed using SPSS software.

Findings: In case group *Aspergillus flavus* (23.8%) and *Candida* spp. (16.6%) were the most prevalent fungi; and in control group *Mycelium Sterile* (13.4%) and *Cladosporium* (12.5%) were the commonest fungi.

Conclusion: Normal flora of ear has inhibiting activity on growth of pathogen opportunistic fungi. These results may be benefit for use of some components in healthy cerumen (Cerumen Therapy) for treatment of patients with Acute Otitis Externa. This is especially recommended in cases such as Recurrent Otitis Externa due to non-complete formation of cerumen.

Key words: Cerumen, Fungal Flora, Acute Otitis Externa

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COMPLIANCE AND SAFETY STUDY IN CHILDREN WITH UPPER AND LOWER RESPIRATORY TRACT INFECTIONS (COMPAS)

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Objectives: The objective of this study was to obtain data on the safety, tolerability and compliance with azithromycin in children with bacterial infections of the upper and lower respiratory tract. The primary objective was to record any adverse events (AEs), either expected or unexpected, following the use of azithromycin. The secondary objectives included parameters for tolerability, compliance and efficacy.
Methods: This prospective, non-interventional, post-marketing study was conducted from April 2007 through January 2009, involving a network of 12 Greek hospitals. 400 children and adolescents, 1-14 years old, with respiratory tract infection that received azithromycin according to the

approved summary of product characteristics were recruited.

Results: All subjects who received azithromycin (n=390) were evaluated for AEs. There were no deaths or severe AEs reported. 4 (1.0%) subjects discontinued due to AEs, all of which were considered related to study medication and mild in severity, and all resolved within 3 days. 27 (6.9%) subjects reported 32 treatment-emergent all causality AEs, most of them being categorized as gastrointestinal disorders (20, 5.1%).including diarrhoea (9 [2.3%]), abdominal pain (6 [1.5%]) and vomiting (6 [1.5%]). All AEs were considered mild in severity. Compliance rate was high (94.7%) and most parents/legal guardians assessed the pediatrician's™s

instructions as easy to follow (95.9%) and azithromycin as easier to administer compared to other previous treatments (91.3%). Improvement in health status of subjects at final visit was assessed in 355 patients (91%).

Conclusion: The incidence of adverse events is low when

azithromycin is administered for the treatment of children with respiratory tract infection. Compliance, tolerability and efficacy rates were estimated to be high.

This study was sponsored by Pfizer Hellas (ClinicalTrials.gov: NCT00939185)

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A RARE CASE OF BACTEREMIA DUE TO BACILLUS PUMILUS IN AN IMMUNOCOMPETENT PATIENT

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Introduction: Bacillus Pumilus is a Gram-positive, aerobic, spore forming microorganism that can cause bacteremia, usually transient, rarely clinically significant. Bacillus species are isolated from 0,1-0,9% of blood cultures, but only 5-10% of these are clinically significant infections. Predisposing factors for Bacillus bacteremia are intravenous drug users, those with prosthetic valvular devices, venous catheters or pacemakers wires, hemodialysis and immunocompromised hosts (malignant diseases, neutropenia, treatment with corticosteroids, HIV), sickle cell anemia.

Aim: To present a rare case of bacteremia with Bacillus Pumilus.

Materials and methods: A 71 year old woman (severe aortic valve stenosis, mild mitral valve shortage, cardiac failure, mild renal failure, dyslipidaemia) presented with weakness, fatigue and a feeling of breathlessness. Laboratory findings revealed severe hypochromic, normocellular anaemia, Mayer test(+), so she was transfused with 2 blood units and

received iron iv. The day 4 and 5 of her hospitalization she presented fever up to 38,8C. From the 3 blood cultures taken, Bacillus Pumilus was isolated in bottle B and C. The patient was immediately administered vancomycin in combination with imipenem and rapidly became afebrile within the next 24h. A series of paraclinical tests including transthoracic and transoesophageal echocardiography (-) for vegetations, gastroscopy(-), colonoscopy(benign colon polyp), chest computerized tomography(-), upper and lower abdomen computerized tomography(-), and further laboratory findings, did not prove malignancy or immunosuppression as a cause of Bacillus Pumilus bacteremia.

Conclusion: Several cases of Bacillus Pumilus bacteremia have been reported in the literature, but mainly in immunocompromised, psychiatric patients, in patients with malignancies, venous catheters contamination or intravenous drug users. Clinically significant infection by Bacillus species is rare.

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A CASE OF TETANUS IN A 76 YEAR OLD WOMAN PRESENTING WITH DYSPHAGIA.

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Introduction: Tetanus is a medical condition caused by the Gram-positive, obligate anaerobic bacterium Clostridium tetani. There are about one million cases of tetanus reported worldwide annually, causing an estimated 300,000 to 500,000 deaths each year. In Greece tetanus is sporadic, mainly in agricultural regions.

Aim: To present an elderly woman with tetanus who was admitted with symptoms of dysphagia.

Material and Methods: A 76 year old woman (with pacemaker, chronic atrial fibrillation) presented with a 48h difficulty in swallowing and eating. The patient had a small injury at the left lower limb two days ago. She had

opisthotonos, stiffness of the neck, rigidity of pectoral and calf muscles, trismus, but not any other cardiorespiratory dysfunction or loss of consciousness. Passive immunization with 3000I.U. of human tetanus immunoglobulin was administered i.m. and the patient begun treatment with diazepam, ceftriaxone i.v. Staphylococcus CN was isolated from the wound culture, so she was also administered ciprofloxacin i.v. After an 11-day hospitalization the patient presented with apnea and generalized tetanic seizures so, she was treated with phenobarbital and oxygen. The patient stayed at the internal medicine department for 20 more days with gradual improvement on the respiratory function and

the painful spasms.

Conclusion: Tetanus should be included in the differential diagnosis of dysphagia, especially concerning elderly

people with a history of an injury. In that case the direct treatment is crucial, as tetanus infection has high mortality and morbidity rates even in nowadays.

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RECURRENT BACTEREMIAS CAUSED BY STREPTOCOCCUS SPECIES IN A PATIENT WITH BIO-PROSTHETIC AORTIC VALVE

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Introduction: Enterococcus Faecalis, a gram(+) cocci, can cause bacteremia, surgical wound infection, rarely meningitis and it is the 3rd cause of infective endocarditis and nosocomial bacteremia. Increased frequency of nosocomial enterococcal bacteremia in recent years is a result of previous exposure to broad-spectrum antibiotics in very ill debilitated patients, malignant diseases and broad use of invasive procedures.

Aim: To present a case of recurrent bacteremias by streptococcus species in a patient with bio-prosthetic aortic valve.

Material and methods: A 78 year old man (coronary artery disease, prosthetic aortic valve, history of infective endocarditis by streptococcus 10 years before, history of bacteremia by streptococcus gallolyticus 3 months before) presented with 24h high fever 38C, arthralgia, myalgia and

weakness. Enterococcus Faecalis was isolated in bottle B and C from 3 blood cultures taken. The patient was immediately administered Garamycin 80mg 1flx2 and Begalin 2flx4. Paraclinical tests including transthoracic and transoesophageal echocardiography did not prove the existence of vegetations on the prosthetic aortic valve. Imaging tests did not detect any pathological findings, dental test(-), ASLn(-), pharyngeal culture (-). The detection for bacteremia's cause led finally to colonoscopy which proved sigmoid diverticulum and a big rectum mass. Rectum's biopsy showed colon adenoma with partial transformation into carcinoma. The patient was sent to specialists (surgeons-oncologists) for further treatment.

Conclusion: What is really interesting in that case is the detection of rectal carcinoma as portal of entry into the bloodstream of streptococcus species.

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CHRONIC PROSTATITIS IS ASSOCIATED WITH ALEXITHYMIA, OBSESSIVE COMPULSIVE SYMPTOMS AND HYPOCHONDRIASIS

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Background: Chronic prostatitis is considered by some a psychosomatic illness. The psychological profile of patients suffering from chronic prostatitis, has not been fully elucidated yet.

Methods: Consecutive patients diagnosed with chronic prostatitis at a tertiary care ID clinic were evaluated for the presence of psychiatric symptoms. More specifically the Toronto Alexithymia Scale, the Leyton trait scale and the Whitley index were used for the evaluation of alexithymia, obsessive compulsive symptoms and hypochondriasis respectively. The NIH Consensus Classification System for Prostatitis Category was used for prostatitis classification. The NIH Chronic prostatitis Symptom Index (CPSI) was

calculated for all patients.

Results: 64 patients (median age 39 yrs old; IQR 32.5-49.5 yrs) were evaluated. According to the NIH Prostatitis Classification patients were categorized as type II : 40%, IIIa: 9%, IIIb: 42%, IV: 4%. Median CPSI score was 18 (IQR: 13-24). Median TAS score was 42.5 (IQR: 37.3-54), median Leyton score was 13 (IQR: 10-15.8) and median Whitley score was 28 (IQR: 22-38). A TAS score of >53 indicative of alexithymia was noted in 26.6% of the population. An abnormal Leyton trait scale score indicative of obsessive-compulsive disorder was noted in 57.8% and an abnormal Whitley score indicative of hypochondria in 43.8% of patients. CPSI strongly correlated with TAS score ($r=0.57$,

p < 0.01).

Conclusion: Increased rates of alexithymia, obsessive compulsive symptoms and hypochondriasis were discovered in this cohort of patients with chronic prostatitis.

Alexithymia was strongly associated with quality of life measures such as the CPSI. These findings need further elucidation and will help in establishing appropriate intervention strategies.

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2009 H1N1 INFLUENZA AT CLINIC FOR INFECTIOUS DISEASES IN PODGORICA

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In period from 21st June, 2009 to 29th January, 2010 at Clinic for Infectious Diseases in Podgorica 274 patients with clinical diagnosis of swine flu were hospitalized. We have analyzed their clinical and laboratory findings.

Infection with pandemic AH1N1 influenza virus was laboratory confirmed by RT-PCR in 180 cases, 15 in the "summer wave" and 165 in the "winter wave" of epidemic. In 46 patients diagnosis is established on clinical and epidemiological findings because RT-PCR test was not performed according to the instructions from national Center for control of pandemic influenza.

Most of the patients were young people in the age 5-25 which made 53%, 36% were middle-aged (26-50) and 11%

were older than 50 years.

Gastrointestinal disturbances were frequently registered among nonspecific symptoms of illness (vomiting - 23%, diarrhea - 9% and abdominal pain - 9%). RTG pneumonia was found in 62% and leukopenia (less than 4 G/L) in 21% of patients. 34% of the patients were with co-morbidity or in status of risk, especially with chronic cardiac diseases (15%) and chronic pulmonary diseases (10%), including three pregnant women.

Not even one influenza H1N1 death was registered. Time of hospitalization was 6,2 days in average. There were three cases of influenza H1N1 among health workers on Clinic for infectious diseases in Podgorica

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DYNAMIC SPREAD OF BRUCELLOSIS IN HUMANS IN THE AREA OF KORCA FOR THE YEARS 1999-2009.

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Brucellosis disease is progressing rapidly, marking not only the vast spread to cattle, but now seriously endangering human health. Brucellosis is an infectious disease dekurs chronic, caused by bacteria of the genus *Brucella*.

This bacterial zoonosis is transmitted as an infectious disease even in people from infected animals, products and by-products produced from them. In the brucellar infection map in all world Albania is also included, among the endemic dissemination countries. In 1988 our country was declared healthy from brucellosis. But political and economical changes that occurred in our country after 1990, brought a significant increase of brucellar infection in animals, as a result people were infected too. Therefore, the object of our

study is the dynamics of the spread of brucellosis in humans at Korca's region for the years 1999-2009.

For examining this disease two methods are used in our bacteriological laboratory: evidence of Rosa-Bengal (RB) and Wright test (SAT). We have studied different cases in these years and from our analysis the result is positive for 1698 people.

The increased number of people infected with brucellosis shows that this disease poses a serious problem with social risk to the health of population.

These data will serve as a microbiological archive to prevent and reduce this disease, until it is eliminated by combining both veterinary services and hygienic sanitation.

RESPIRATORY TRACT INFECTION AND ASSOCIATION WITH AN ACUTE ISCHEMIC CARDIAC EVENT.

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Background: We aimed to examine epidemiological associations between the presence of an infection and admissions due to an acute ischemic cardiac event in a tertiary care cardiology clinic.

Methods: Consecutive cases with an ischemic cardiac event admitted at a tertiary care center cardiology clinic during a period of 6 months were evaluated. Cases with an additional admission diagnosis of respiratory tract infection (RTI) within 72 hours of hospital admission were recorded. The association with RTI and an ischemic cardiac event was studied using univariate and multivariate analysis.

Results: 210 consecutive patients with an ischemic cardiac event leading to an admission have been prospectively evaluated [75 % male, median age: 68 yrs (IQR 60-78), median APACHE III score: 74 (59-88)]. RTI was diagnosed in 59.7% of cases. The presence of RTI was associated with

the admission diagnosis of an acute coronary event (OR: 3.1, 95% CI: 1.6-5.9, P=0.001). An acute coronary event was also associated with increasing age (p<0.001), male gender (p=0.07), history of hyperlipidemia (p<0.001), HTN (p<0.001), chronic renal failure (CRF) (p<0.001), diabetes (DM) (p=0.01) and an increased APACHE III score. Multivariate analysis revealed the following variables to be associated with an ischemic cardiac event: increasing age (OR: 1.05, 95% CI: 1.02-1.08, P=0.001), dyslipidemia (OR: 3.1, 95% CI: 1.3-7.8, P=0.01) and the presence of RTI (OR: 2.3, 95% CI: 1.1-5, P=0.03). No pathogen specific association was found.

Conclusion: In the presented cohort of patients the diagnosis of RTI was associated with an acute coronary artery disease event. More studies should investigate this association and potential prevention strategies.

BRUCELLAR MENINGITIS AS THE ONLY MANIFESTATION OF HUMAN BRUCELLOSIS: A CASE REPORT OF A RARE PRESENTATION AND REVIEW OF THE LITERATURE

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Background: Central nervous system involvement is a rare and perplexing complication of brucellosis, a worldwide prevalent zoonosis. The reported incidence is 2-7% and the clinical presentation varies. Meningitis is reported in 6-50% of cases in neurobrucellosis series. We report a case of brucellar meningitis and discuss the diagnosis and management.

Case report: A 35-year old female farmer was admitted with high fever and headache of 15-days duration. Physical examination revealed only subtle nuchal rigidity. Routine laboratory tests were normal. Cerebrospinal fluid (CSF) examination showed a white blood cell count of 330x10⁶/L (lymphocytes 80%), a protein level of 102 mg/dL and a glucose level of 46 mg/dL (blood glucose, 118 mg/dL). Blood and CSF cultures were negative. Extensive blood and CSF work-up for viral, bacterial, mycobacterial, fungal, neoplastic, primary neurologic or vasculitic causes of aseptic meningitis

and a brain MRI were unrevealing. The diagnosis of neurobrucellosis was confirmed by a positive Rose Bengal Plate test, a standard tube agglutination test (Wright) >1/2560, a high serum antibody level against Brucella (Elisa); IgG, 79 NU and IgM 46.8 NU, a high CSF antibody level (Elisa); IgG, 11.4 NU and IgM 10.3 NU and a positive CSF PCR for B.melitensis. The patient was treated with doxycycline, cotrimoxazole and rifampicin for 4 months with a rapid clinical but a delayed CSF parameter improvement and remained well at 7 months of follow-up.

Conclusions: Brucella spp. should always be considered as a cause of aseptic meningitis in patients living in or returning from an endemic area. Prolonged treatment with 3 adequate antimicrobials is recommended. Follow-up lumbar punctures are needed because treatment duration depends on CSF parameters returning to normal in order to avoid relapses.

PROBLEMS OF THERAPY DURING HEPATITIS B VIRAL INFECTION

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Hepatitis B virus causes different spectrums of clinical diseases, from acute to chronic hepatitis. Generally, the goal of antiviral treatment is to suppress viral replication and prevent the possibility of the virus to induce progression of liver disease. Two types of antiviral drugs are currently approved that are mostly used in patients with chronic hepatitis B: the alpha interferons and the nucleos(t)ide analogues. However, universal opinion suggests that patients with chronic hepatitis B can not be definitely and completely eliminate the virus. The persistence of covalently closed circular HBV DNA in infected hepatocytes serves as a viral reservoir. In spite of this fact, adequate treatment of these patients has shown improvement in disease outcome and prolonged survival.

Many important questions are necessary to be resolved for effective treatment depending on patients, antiviral drugs, and also, viral characteristics. The most critical point is to

select patients to treat or not, e.g., to evaluate benefit of treatment vs. adverse effects that can cause severe consequences (flare of the disease or various other organ damages).

Selection of patients depends on the stage and activity of the disease, patient's health status (undergoing hemodialysis or liver transplantation, etc.), age, gender (possibility of pregnancy), co-infection with other persistent viral infection (HCV, HIV), etc. Choice of antiviral therapy depends on safety, efficiency and barrier to resistance (durability) of antiviral drugs. Regarding treatment, regular monitoring is necessary (virologic and biochemical) to notice eventual antiviral resistance (breakthrough or rebound) that requires change of given therapy.

Properly confrontation with various problems in treating hepatitis B viral infection will be effective to achieve long viral suppression and prolong life of patients.

EXTRAPULMONARY TUBERCULOSIS AS AN ETIOLOGICAL FACTOR IN FEVER OF UNKNOWN ORIGIN

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Objectives: The aims of this study were to determine prevalence of extrapulmonary tuberculosis in patient with fever of unknown origin (FOU) who was HIV negative, to show prevalence of, and types of extrapulmonary tuberculosis (TB) and to determine trends of prevalence among patients with FOU.

Methods and results: During period 1994-2009, 2842 with FOU were evaluated and treated in the Clinic for infectious and tropical diseases, Belgrade. Extrapulmonary TB were diagnosed in 134 (4,7%) patients. Genitourinary TB in 73 patients (renal - 60, orhiepididymitis - 4, salpingo-oophoritis - 9); TB lymphadenitis in 13; meningitis in 15; TB pericarditis in 8, spondylodiscitis in 6, liver TB in 4 and in one patient small intestine TB. In 14 patients we did not confirm tuberculosis and after pulmonary TB was excluded, they were treated empirically with antituberculous drugs, and had a good response. As a diagnostic methods we used: PPD skin test, cerebrospinal fluid (CSF), sputum and urine cultivation, computed tomography, echocardiography,

intravenous pyelography, patohistological examination of lymph nodes, intestine and liver, and gynecological laparoscopy. For urine and CSF specimens PCR test was used after year 2001. The sensitivity of conformation test were: CSF culture 100% (PCR 100%), urine culture 45% (PCR 68%), for histopathology lymph nodes 78%, small intestine 100% (single patient) and liver 85%. As a diagnostic criteria, clinical course of the illness, radiological examination, laparoscopy and other endoscopic examinations and response to empiric therapy, were also used. Incidence of extrapulmonary TB was in slight increasing after year 2001. Isoniazid, rifampin, pyrazinamide, ethambutol and streptomycin were used for treatment. Multi drug resistant TB were confirmed in 4 patients and in 7 patients (drug sensitive TB) had relapses of the illness after treatment.

Conclusions: Extrapulmonary TB is increasing cause factor in patients with FOU and should be always considered during evaluations of this patients.

SURVEILLANCE OF ANTIMICROBIAL RESISTANCE - A MULTICENTER STUDY IN INFECTIOUS DISEASES HOSPITALS IN ROMANIA

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Antimicrobial resistance data could improve the quality of local treatment guidelines in various infectious diseases. We started a surveillance study to evaluate the level of resistance in four infectious diseases hospitals in Romania.

Methods: A four-center retrospective study of bacterial antimicrobial susceptibility (Infectious Diseases hospital from Iasi, Constanta, Timisoara and National Institute Matei Bals). We analysed a twelve months period (December 2006-November 2007). Major problems of germs resistance and difficulties in susceptibility testing were defined.

Results: We analysed 6011 bacterial isolates, duplicate and feces isolated bacteria being excluded. More than half of tests were performed in Matei Bals National Institute (54,28%) . The other centers tested 14,24-16,22 % isolated each. The Gram-positive-Gram negative proportions were similar :48,20% to 51,80%. Quinolones and cephalosporins were less tested in some centers, and ESBL tests weren't

regularly performed. 86,11% of results were obtained with disk diffusion method. High level of resistance were noted for Streptococcus pyogenes to macrolides 25,23%, Streptococcus pneumoniae with diminished susceptibility for penicillin 51,34% and 46,15% resistance to macrolides; methicillin-resistant Enterococcus spp 32,21%; Pseudomonas spp. 40,46% fluorquinolones resistance and 27,20% carbapenems resistance (imipenem and/or meropenem); Enterobacteriaceae 24,81% fluorquinolones resistance and 23,11% third generation cephalosporins resistance.

Conclusions: The resistance levels are quite high, in accordance with EARSS reported Romanian data, and for some situations even higher. The misdiagnosed resistance due to technical problems could be an explanation, as for other statistical results from our country. A more coherent activity of susceptibility testing is mandatory .

HEMORRHAGIC FEVER CAUSED BY HANTAAN VIRUS

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Object: To describe the clinical course, the laboratory findings, and the differential diagnosis of the infection caused by Hantaan virus.

Material: A young male, 23 years old presented with high fever, headache and severe malaise. His symptoms had begun two days earlier with weakness, anorexia, and nausea. His medical history was unremarkable, he was single and he was occupied with agricultural labours. The physical examination revealed normal heart and lungs auscultation, enlargement of liver and spleen, normal neurological findings. The laboratory findings at his admission showed mild leucopenia, thrombocytopenia, slight elevation of the liver enzymes (double the normal value), normal renal function, and normal coagulation tests. In the next two days the patient was still febrile, and the third day of his hospitalization he presented clinical deterioration with hematuria, oligouria and diffuse hemorrhagic rash and spontaneous conjunctiva haemorrhage. At the same time, his

laboratory findings revealed acute renal insufficiency, and diffuse intravascular coagulation. The serological testing finally revealed infection of Hantaan virus.

Conclusions: The clinical and the laboratory features of this patient are common in a large variety of viral, parasitic or atypical bacterial infections. When renal insufficiency and hemorrhagic lesions occurred, it became more obvious that the virulent factor was affecting the kidneys in a characteristic way. Such infections are leptospirosis and hemorrhagic fever. Both the diseases have similar epidemiological subset and the same host: small rodents. The clinical differential diagnosis between Hantaan virus infection and leptospirosis is hard. In western Greece the frequency of leptospirosis is high, thus the diagnosis of Hantaan is challenging and the prevalence of the disease is probably underestimated. The outcome for this patient was good with full recovery. The death rates for this infection are reported to be between 5% and 10%.

ACUTE PERICARDITIS DUE TO ALPHA-INTERFERON THERAPY- CASE PRESENTATION

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We present the case of a female patient, 38 year old, known with chronic HCV hepatitis, treated with peginterferon and ribavirin, (the eighth month of antiviral treatment) which was admitted for chest pain, dry cough, and fatigue, without fever. The antiviral therapy tolerability was satisfactory, without hematological, endocrinological, ophthalmological or autoimmune side effects, and treatment response was fast, with undetectable viral load at 4 wk of therapy.

Physical examination showed distant heart sound, cough, pericardial friction rub. The patient had thoracic pain. Chest x-ray, electrocardiogram and laboratory data were normal. Echocardiogram showed Horowitz C1 pericardial effusion with systolic and diastolic separation of epicardium and pericardium (small effusion 18ml). The first suspicion was viral etiology and the patient received NSAIDs (ibuprofen) and colchicines. The antiviral therapy for HCV hepatitis was continued, under cardiology supervision. Clinical outcome was to slow deterioration and echocardiogram showed an increase of pericardial effusion, without risk of tamponade.

Although the literature doesn't report other cases of acute pericarditis secondary to interferon therapy, we stopped HCV antiviral therapy and the outcome has been slow to improve both clinical and echocardiographic. After 3 wk of stopping antiviral therapy, interferon was resumed. After the first dose in the absence of ribavirin, the patient presented significant chest pain, cough and thoracic pain. Echocardiogram performed at 48 hours after interferon administration showed an increase of pericardial effusion. We excluded other causes of pericarditis. Linking acute pericarditis with the administration of interferon has been determined for the presented case by Naranjo ADR Probability Scale, which, with a value of 9 indicates a certain association. We stopped the antiviral therapy, and all biological, clinical and echocardiography data (5 months later) were normal. In terms of HCV infection the patient achieved sustained virological response.

Conclusion: Interferon may be involved in the occurrence of pericarditis, most likely immune mediated.

THE USEFULNESS OF MACROLIDES FOR COMMUNITY-ACQUIRED GRAM-POSITIVE INFECTIONS

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Because the macrolides are widely used in the treatment of community-acquired infections due to gram-positive cocci, especially for respiratory tract infections, ear-nose-throat (ENT) infections and skin infections, it is important to macrolide resistance level of gram-positive cocci (GPC).

Methodology: We performed a surveillance study of patients with community-acquired infections due to GPC during a twelve months period (July 2008 - June 2009) in order to establish the macrolide resistance level; we tested the correlation between macrolide resistance and resistance to other antibiotics.

Results: We collected 597 strains of GPC: 60 of *S pneumoniae*, 301 of *S pyogenes*, 218 of *S aureus*, 18 *S epidermidis*. 62 patients had community acquired respiratory tract infections, 132 patients had skin infections and 403 patients had ENT infections. The levels of resistance to macrolides were: *S pneumoniae* - 42%, *S aureus* - 46%, *S epidermidis* - 72%, *S pyogenes* - 1.98%. The macrolide

resistance levels are higher for the germs involved in respiratory tract infections, 46.8% and in skin infections, 44.6% versus germs from ENT infections, 12.90% ($p < 10^{-7}$ in both cases). The macrolide-resistant isolates are more resistant to other antibiotics than macrolide-susceptible isolates: *S pneumoniae* for penicillin: 16.7% vs 6.1% ($p = 0.19$), for TMP/SMX: 66.7% vs 27.2% ($p = 0.012$) and for tetracycline 58.3% vs 6.1% ($p = 0.0001$); *S aureus* for oxacillin: 56.1% vs 18.2% ($p < 10^{-7}$), for TMP/SMX: 4.1% vs 0 ($p < 10^{-7}$), for fluoroquinolones: 15.9% vs 1.8% ($P = 0.0002$), for tetracycline: 78.2% vs 32.1% ($p < 10^{-7}$).

Conclusions: The macrolide resistance level of GPC is high. In our area, the macrolides remains useful as first-line regimen only in ENT infections. Most of GPC macrolide-resistant isolates are also multidrug resistant and the treatment of community acquired infections is more difficult, involving newer fluoroquinolones or even second-line antimicrobials.

TYGACIL IN PATHOGEN-DIRECTED THERAPY OF LIVER ABSCESS: EFFICACY AND CONTROL OF SIDE EFFECTS

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We present the case of a patient with E coli ESBL-positive cholangitis after cholecystectomy. The initial treatment with carbapenems was replaced with tigecycline due to slow

response and drugs-induced neutropenia. Tigecycline controlled the both problems; a segmental hepatectomy removed abscess area and a biliary duct stenosis.

BETA-LACTAMS AND PHARMACEUTICAL INTERSTITIAL NEPHRITIS (PINB) - CORRELATION BETWEEN THE CLINICAL SYMPTOMS AND THE LABORATORIAL EXAMINATIONS.

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A pharmaceutical interstitial nephritis by beta-lactams is an indirect phenomenon, caused by immune reactions. As it can occur with a single dose, it is therefore dose-independent. Our aim is to record the correlation between the clinical symptoms of patients with PINB and their laboratorial exams.

Material: Four patients, out of sixty-five: one woman and three men were taken into consideration. Their ages were 31, 56, and 81 respectively. An antibiotic therapy of beta-lactams was used (Penicillin, Azlocilline, Tazocilline), against a respiratory pulmonary infection.

Conclusion: Frequency of PINB over the last years increases

(on our research was 6.15% while in bibliography data 4%). The most usual symptoms were fever, eosinophilia; exanthema and arthritic pain were infrequent. The most frequent symptom was fever and its appearance is characteristic after a non-fever period. Eosinophilia varies from 500 to 5000/mm³.

Some bradycardia can be a useful finding, whenever it exists. A careful monitoring of the renal function, with the recording of the tubular function and that of the creatinine plasma, are considered to be necessary. In most cases, ARF caused by beta-lactams is characterized as a non-oliguria.

CLINICAL PRESENTATION OF HOSPITALIZED PATIENTS WITH CONFIRMED INFECTION FROM A/H1N1 VIRUS

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Introduction: During the A /H1N1 pandemic, in the summer and fall of 2009 a large number of patients with flu like symptoms presented to the general hospital of Zakynthos. Very few of them needed hospitalization. We describe the clinical and laboratory findings of these patients.

Material-Methods: From a total number of 823 patients who presented to our hospital with flu like symptoms from June to December 2009 only 16 patients needed hospitalization. All of them had a positive PCR test for A /H1N1 in pharyngeal sample. All of them had serious symptoms and especially high fever and malaise. 8 of them had a serious medical history and they were admitted to the hospital for safety reasons and closer observation. 4 of them were

foreign tourists who could not have proper care and attention outside the hospital. One of them was hospitalised because she acquired streptococcal pneumonia a week after being diagnosed with the A /H1N1 infection. Only one of them presented viral pneumonia and ARDS and needed hospitalization in critical care unit, with a good final outcome. The laboratory findings were not characteristic in all of them. Radiological findings existed in only 4 of them. All of the admitted patients received oseltamivir from the onset of their disease.

Conclusions: Although we had a large number of patients, the need for hospitalization was not as high as expected from the international data. The fact that most of our cases

were in the summer months was perhaps contributing to a better outcome. We should also acknowledge that due to the high level of information in Greece during the A /H1N1

pandemic, the patients were seeking medical attention and care earlier in the course of the disease.

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ANTIMICROBIAL SENSITIVITY OF UREAPLASMA UREALYTICUM AND MYCOPLASMA HOMINIS IN CASES WITH VAGINAL DISCHARGE IN KOSOVO

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Objectives: The objectives of study was to isolate Mycoplasma hominis (Mh) and Ureaplasma urealyticum (Uu) and determine the antimicrobial resistance in cervico-vaginal samples of women, who had complaints of vaginal discharge, using Mycoplasma IST 2 (BioMerieux).

Methods: There were 471 patients included in the study. Vaginal samples were taken from endocervical region after exocervical mucus had been swabbed clean. Mycoplasma IST 2 used for investigation of Mh and Uu provided information about the presence or absence of Mh and Uu and also their antimicrobial susceptibility to Doxycycline, Josamycin, Ofloksacin, Erythromycin, Tetracycline, Ciprofloxacin, Azithromycin, Clarithromycin and Pristinamycin.

Results: Uu has been isolated in 235 (49.90%) patients, while Mh has been isolated in 42 (8.91%) of them. Uu and Mh have been both isolated in 36 (7.46%) of the patients.

Out of 235 Uu positive samples, in 211 cases (89.9%) the quantity was higher than 10⁴ CFU/ml. Out of 42 Mh positive samples, in 11 (26.2%) the quantity was higher than 10⁴ CFU/ml while in 31 (73.8%) of the positive samples the quantity was lower than 10⁴ CFU/ml.

Uu has shown resistance to Ciprofloxacin in 98 cases

(41.7%), then to Erythromycin in 43 (18.3%), Clarithromycin in 37 (15.7%), Azithromycin in 25 (10.6%), Tetracycline and Ofloxacin in 22 (9.4%), to Doxycycline in 5 (2.1%), Pristinamycin in 4 (1.7%) and to Josamycin in 2 (0.9%) cases.

Uu/Mh isolates have shown resistance to Erythromycin in 27 cases (75.0%), followed by Clarithromycin in 25 (69.4%), Ciprofloxacin in 24 (66.7%), Azithromycin in 13 (36.1%), Tetracycline in 6 (16.7%), Ofloxacin and Pristinamycin in 4 cases each (11.1%), and to Doxycycline and Josamycin in 2 (5.6%) cases.

The resistance of Uu/Mh isolates to Azithromycin, Ciprofloxacin, Clarithromycin and Erythromycin is higher than in Uu isolates only. This difference is higher in the case of Azithromycin (range=1, X²-test = 14.75, p=0.0001), Ciprofloxacin (range=1, X²-test = 6.884, p=0.0087), Clarithromycin (range =1, X²-test = 48.03, p<0.0001), Erythromycin (range =1, X²-test = 49.47, p<0.0001).

Conclusions: A higher prevalence of Uu versus Mh is noted in the vaginal swabs as well as higher resistance in the chinolone. In addition, Mh and mixed isolates are more resistant in macrolides further explaining that the macrolide resistance is attributed to Mh.

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PSEUDOMONAS SPECIES ISOLATES AND THEIR ANTIMICROBIAL FROM INTENSIVE CARE UNITS OF THE UNIVERSITY CLINICAL CENTRE OF KOSOVO DURING THE YEAR 2008

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Objectives: The aim of the study was to isolate Pseudomonas sp. from various clinical samples in the Intensive Care Unit of Kosovo and to determine the antimicrobial susceptibility patterns.

Methods: A retrospective study has been conducted at the Microbiology Department, National Institute of Public Health of Kosovo in Pristina. Data from samples received and microbiologically examined during year 2008 has been

used. In order to isolate and identify bacteria were used the culture mediums as Agar-Blood, MacConkey-Agar, metabolic activity (biochemical tests) and oxidase test. Antimicrobial susceptibility testing was performed by Kirby Bayers disc diffusion method. Quality control was performed using a local previously characterized Pseudomonas isolate. Results: From total of 891 received samples during the study period 431 were gram negative rods. The majority of isolates

were *Pseudomonas* spp. 154(37.29%), the largest number are isolated from tubus swabs 72(46.75%) followed by tracheostoma 60(38.96%) and wounds 10(6.49%).

Pseudomonas isolates expressed highest susceptibility to Imipenem 120 samples (77.92% susceptible) and Amikacin 100(64.94% susceptible). The resistance rate for Ampicilin 132 samples (85.71%), Cefotaxim 129(83.77%), Trimethoprim-Sulfamethoxazole 127 (82.47%), Ceftazidime 124(80.52%), Ceftriaxone and Piperacilin each of them 123 (79.22%),

Ciprofloxacin 84(54.5%), Gentamycine and Tobramycine each of them 83 (53.90%).

Conclusion: The study shows high presence of *Pseudomonas* sp. among isolates at the Intensive Care Units of the University Clinical Centre of Kosovo accompanied with high resistance toward tested antimicrobials. This situation requests development and implementation of strict hygienic measures and more prudent use of antimicrobials in these units.

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DIFFERENTIAL EXPRESSION OF INTERFERON GAMMA IN CHRONIC HEPATITIS C PATIENTS

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Although IFN-alfa forms the foundation of therapy for chronic hepatitis C, 30-50% of patients has a sustained response to IFN-alfa therapy. Type I IFNs can promote IFN-gamma production by activating STAT4 .

We characterized the effects of pegylated IFN-alfa therapy for hepatitis C on the capacity of patients' PBMC to produce IFN-gamma ex vivo. Cells from patients with a initial virological response to therapy had significantly greater levels of IFN-alfa-driven IFN-gamma production after treatment than those from non-responding patients.

Interferon stimulates the expression of a number of genes encoding enzymes with antiviral activities, including myxovirus resistance-1 (MxA), 2-5-oligoadenylate synthetase 1 (OAS-1) and double-stranded RNA-dependent protein kinase (PKR).

This study was performed to elucidate whether a single nucleotide polymorphism (SNP) (G/T at nt-88) in the promoter region of the MxA gene influences the response

to IFN therapy in patients with chronic hepatitis C virus (HCV) infection.

Polymorphisms of the MxA gene in 40 HCV patients were determined by polymerase chain reaction-restriction fragment length polymorphism.

The frequency of SNP was compared between initial-responders (n = 21) and nonresponders (n = 19), as determined by biochemical and virological responses to IFN-alfa.

Multivariate analysis showed that among all patients HCV RNA level and the SNP of the MxA gene were independent and significant determinants of the outcome of IFN therapy [odds ratio (95% confidence interval), $P < ; ()$, $P < 0.0001$, respectively].

Key Words: single-nucleotide polymorphism (SNP), genetics, disease association, immunomodulation , cytokine , memory T cell , IFN- alfa, IFN- gamma

STAPHYLOCOCCAL AUREUS COLONIZATION AND ITS TOXINS IN SOME SKIN DISEASES

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An important role of *S. aureus* colonization of the skin is its potential to modify the course of dermatologic diseases. In particular, *S. aureus* enterotoxins of types A through E and the TSST-1 have been shown to trigger exacerbation of AD, psoriasis, CTCL and erythroderma. The aim of the work is to assess the prevalence of *S. aureus* colonization in AD, psoriasis, CTCL and erythroderma. Also to correlate the severity of these diseases with the staphylococcal enterotoxins production.

Material and Methods: All patients included in this study underwent the following protocol for evaluation: detailed history taking, clinical examination, histopathological examination, Bacteriological study (*Staphylococcus aureus*

isolation and identification, test for enterotoxin production by *S. aureus* and detection of staphylococcal enterotoxins A, B, C, and D genes by the polymerase chain reaction).

Results: Bacterial toxins including SEs have been implicated in the pathogenesis of CTCL. The prevalence of *S. aureus* in the lesional skin of our patients with CTCL was higher than in non-lesional skin, there were significant intergroups differences ($p<0.05$). As regard to toxins produced by *S. aureus*, more toxin were found in the lesional than in non lesional skin.

Conclusion: *S. aureus* and its toxins have a significant role in the pathogenesis of these dermatological diseases under study.

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