active surveillance of rickettsiosis and differential diagnosis of unknown febrile patients in clinical practice should be enforced.

**OL-021** Echinococcosis of children in Bosnia and Herzegovina

A. Bajraktarevic1,*, S. Trhulj Putica1, S. Tomicic1, A. Skopljak1, N. Dizdarevic KC1, B. Djukic2, A. Hadzimuratovic Jr.3, E. Mujicic Selimovic4, A. Drnda5, Z. Jatic6, A. Hadzimuratovic7, J. Gutić8, M. Ridza9, 1Public Health Institution of Health Center Sarajevo – Pediatrics Department, 2First Medical Aid New Sarajevo, Pediatrics Department, 3Pedictrics Clinic Sarajevo, 4Clinical Medical Center Sarajevo, 5Medical Faculty of Sarajevo, 6Children Surgery Sarajevo, 7General Hospital Sarajevo, Bosnia and Herzegovina

Background: There are three different forms of echinococcosis found in humans and children. Inoperable cases can be treated with albendazole or mebendazole. The disease can be severe and can lead to death within five or ten years unless treated. Symptoms and signs may resemble those of a space-occupying tumor.

Methods: Intensive studies were made of the changes in the age incidence of Echinococcosis that occurred in the children population in Bosnia and Herzegovina between age 1 month until 16 years during the control programmes. Of the serological tests for detecting anti-Echinococcus serum antibodies, the enzyme-linked immunosorbent Assay (IgG-ELISA), the indirect hemagglutination antibody test (IHA T), and the latex agglutination test (LAT) were commonly used in laboratories.

Results: Echinococcosis in children is rare. Indigenous cases have been reported in Central and East Bosnia and among Herzegovian children in east mountain part near Mostar. Imported cases are uncommon. Complications include bacterial or fungal superinfection in children.

Conclusions: Echinococcus granulosus infections remain silent for years before the enlarging cysts cause symptoms in the affected organs. Their mortality tends to merge with that of the general Bosnian population, matched by sex, age, and calendar year.

**OL-022** Diagnostic efficacy of monoclonal antibody based sandwich ELISA for detection of Fasciola gigantica excretory/secretory antigens in both serum and stool

A. EL-Bassioouny1, T. Diab4, I. Aly2, S. Mohamed1, M. Zoheiry1, W. Mansour1, W. Safwat3, Z. Demerdash1.

1Theodor Bilharz Research Institute, Immunology Dep., 2Theodor Bilharz Research Institute, Parasitology Dep., 3Theodor Bilharz Research Institute, Gastroenterology and Hepatology Dep, Egypt

This research was carried out to develop a reliable monoclonal antibody (MoAb)-based sandwich ELISA for the diagnosis of active Fasciola gigantica infection in both serum and stool for comparative purposes. From a panel of MoAbs raised against F. gigantica excretory/secretory antigens (Es Ags), a pair (12B/11D/3F and 10A/9D/10G) was chosen due to its high reactivity and strict specificity to Fasciola antigen by indirect ELISA. The 2 MoAbs were of the IgG2 and IgG3 subclasses, respectively. Using SDS-PAGE and EITB, the selected MoAbs recognized 83, 64, 45 and 26 kDa bands of ES Ags. The lower detection limit of ELISA assay was 3 ng/ml. In stool, the sensitivity, specificity and diagnostic efficacy of ELISA was 96%, 98.2 and 97.1% while in serum they were 94%, 94.6% and 94.3%, respectively. Moreover, a positive correlation was found between ova count in stool of Fasciola infected patients and the OD readings of ELISA in both stool and serum samples ($r = 0.730$, $p < 0.01$ and $r = 0.608$, $p < 0.01$, respectively). These data showed that the use of MoAb-based sandwich ELISA for the detection of Fasciola coproantigens in stool specimens was more superior than in serum samples; it provides a highly efficient, non-invasive technique for the diagnosis of active Fasciola infection.

**OL-023** Comparison of the effects of Peganum harmala extracts (aqueous and ethanol) on cutaneous leishmaniasis in Balb/c mice

F. Khoshzaban1,2,*, M. Naseri1,2, F. Gaffari Far3, H.R. Jamshidi Kohsari1, N. Esmaiili4, 1Shahed University, 2Medicinal Plants Center, 3Tarbiat Modares University, 4Tehran University, Iran

Background: Leishmaniasis is one of the six most common parasitic infections in tropical regions. There are different therapeutic modalities. However therapeutic resistance is developed and resulted in numerous problems. So evaluation of other therapeutic modalities is performed extensively. We compared the therapeutic response of cutaneous leishmaniasis with Glucantime and Peganum harmala extracts (aqueous and ethanol) in animal model.

Methods: This experimental study was conducted in Shahed University during 2008–2009. The therapeutic response of cutaneous leishmaniasis to Glucantime and Peganum harmala extracts (aqueous and ethanol) in animal model was studied in BALB/c mice. These mice were divided in four groups according to receiving either one of these three agents or no treatment (control). The therapeutic response was evaluated according to parasitic load before and after treatment and also with measuring the size of the lesions.

Results: The results showed that ethanol extract of Peganum harmala had good therapeutic efficacy in treatment of lesions in mice ($P < 0.05$) that this efficacy was significant in eighth week after the treatment. There was also a statistically significant difference between the groups regarding the parasitic load ($P < 0.05$).

Conclusion: According to the results, it may be concluded that ethanol extract of Peganum harmala would have a good efficacy in treatment of cutaneous leishmaniasis that is comparable with glucantime.

**OL-024** Gene cloning, expression and serological evaluation of 12-kDa antigen-B subunit from Echinococcus granulosus

J. Abd1, B. Kazemi2, M. Mohabari1, M. Bandepour1, M.T. Rahimi1, M.B. Rokni1,* 1Tehran University of Medical Sciences, 2Shahid Beheshti University (Medical Campus), Iran

Background: We aimed to clone, express, and evaluate a subunit of antigen B called EghAgB12 kDa (rAgB) from Echinococcus granulosus, and to use ELISA to compare it with native AgB (nAgB) and hydatid cyst fluid.

Methods: Total RNA was extracted and AgB cDNA was synthesized and amplified by PCR. The gene was cloned into the pQE30 expression vector. The recombinant plasmid was transformed in E. coli and induced by isopropyl-b-D-thiogalactopyranoside. Bacterial samples were collected and lysed, then analyzed by SDS-PAGE and western blot. Recombinant protein was purified by affinity chromatography and all antigens were examined by ELISA.

Results: The gene was amplified, cloned, and expressed effectively. The sensitivity, specificity; positive and negative predictive values were 96%, 97%, 97.2% and 95.5% for both recombinant AgB and hydatid cyst fluid Ag, and were 98.6%, 100%, 100% and 98.5% for nAgB.

Conclusion: Although nAgB demonstrated more strength in discriminating positive and negative hydatid infections, the
Investigation of the wide spectra of biologic activities of immunomodulators with a new complex model in vivo

T. Karatzuba1 *, L. Bondarenko1, V. Kovalenko1. 1SI “Institute of Pharmacology & Toxicology” National Academy of Medical Sciences of Ukraine, Kyiv, Ukraine

Objectives: Optimization of drugs use could be achieved only at full understanding of their specific pharmacological effects in human organism. Our aim was to investigate wide spectra of biologic activities of immunomodulators Epobiorcin (Epoetin alfa, Biopharma, Ukraine) and Neupogen (Filgrastim, Roche, Switzerland) with new complex model of neutropenia and anemia in vivo.

Methods: Albino female mice were divided into four groups. Animals of groups I-III received vincristine sulfate intraperitoneally at a dose of 0.52 mg/kg b.w./day, twice, at 1 and 8 days of experiment (for neutropenia and anemia modelling). Among this, mice from group II received subcutaneously Epobiorcin – 3780 IU/kg b.w./day. 8 injections with 48 hour intervals, mice from group III received subcutaneously Neupogen – 0.126 mg/kg b.w./day 14 injections with 24 hour intervals. The positive control group (IV) was composed of intact animals. At 15 day of experiment animals were sacrificed and their blood and spleens were investigated. Hematological studies were carried out with hematological analyzer MYTHIC 22 (C2Diagnostics, France).

Results: As a result of our experiments was created new complex model of neutropenia and anemia with use of vincristine sulfate in dose of 1/10 LD50, which was inferior to none of previously used models in respect of pathologic changes rates and their statistic significance. Its positive advantages were lower quantity of preparation and possibility to regulate required levels of pathology manifestation. With our combined model of neutropenia and anemia Neupogen demonstrated ability to stimulate erythropoiesis (increase of erythrocytes number, hemoglobin level, spleen mass coefficient) and leukopoiesis (increase of neutrophils level) in comparison with group I.

Conclusion: Thus use of our model allowed to demonstrate that preparations are regulators both erythropoiesis and leukopoiesis which must be taken into account in medicine at immunocorrection treatment.

Expression of insulin-like growth factor-I receptor and its clinical pathological characteristics in human hepatocellular carcinoma

N.H. Yao1 *, D.F. Yao1, D.D. Yu1, W. Wu1. 1Research Center of Clinical Medicine, Affiliated Hospital of Nantong University, Nantong 226001, Jiangsu Province, China

Background: Insulin-like growth factor-I receptor (IGF-IR) which highly expression in the embryonic period in vivo and Maintain a low concentration levels in adulthood. As an important mediated factor IGF-IR take part in the regulation of cell growth, differentiation and proliferation. It also mediates mitogen signal, anti-apoptotic, induce vascular endothelial growth factor (VEGF) and necessity for cell type transformation. We investigated the expression and its clinical pathological alteration of IGF-IR in different parts of human hepatocellular carcinoma (HCC) and its paracancerous tissues.

Methods: Using the immunohistochemistry and nested-PCR assay, IGF-IR and IGF-1 gene expression was detected in 30 HCC and their non-cancerous tissues. The relationship between IGF-IR and IGF-II or their clinical pathological characteristics was investigated.

Results: The stronger expression of IGF-IR was found in either HCC or non-cancerous tissues. The positive rate of IGF-IR expression was 83.3% in HCC tissues, and 43.3% in non-cancerous tissues, respectively. A significant difference was present between them (χ2 = 8.53, P < 0.01). The positive expression of IGF-IR in HCC was correlated to tumor differentiation, but not to tumor number, size, HBsAg and AFP. The expressions of IGF-IR and IGF-II in HCC were of positive correlation. The level of IGF-IR expression was positively correlated with the corresponding degree of differentiation for which the incidence was 44.4% in the high differentiation group, 92.9% in the moderate differentiation, and 100% in the low differentiation group (Fisher’s exact test). The IGF-IR and IGF-II expressed of moderate and low differentiation of HCC are more than high differentiation ones significantly, and they also had positive correlation in different degree of differentiation (P < 0.05).

Conclusion: The overexpression of hepatic IGF-IR was associated with the occurrence and development of HCC.

Dickkopf-1 down-regulates transforming growth factor-β1 induced hepatic stellate cells activation

W.T. Li1 *, Z.H. Xiao2, C.L. Zhu1, Y. Li1, R.T. Gao1. 1Department of Infectious Disease, Anhui Provincial Hospital, Anhui Medical University, 2Department of Biochemistry, Tongji Medical College, The Huazhong University of Sciences and Technology, China

Background: It has been demonstrated that TGF-β1 played a key role in HSCs activation through interaction with β-catenin. This study was designed to elucidate the molecular mechanism involved in the effect of inhibition of β-catenin on TGF-β1 induced HSCs activation.

Methods: HSC-T6 cells were transfected with pEGFP-C1-Dickkopf-1 (DKK-1, experiment group) and pEGFP-C1-neo (control group), while the normal group received PBS instead of DKK-1. All cells without the normal group were incubated with 1 ng/ml TGF-β1 for 2 hours. At the end of the experiment, the mRNA and protein levels of smad3, β-catenin and α-SMA in cells were analyzed via RT-PCR and western-blot.

Results: Both mRNA and protein levels of β-catenin and α-SMA in HSCs were significantly increased by TGF-β1 in control group compared with normal group, whereas DKK-1 markedly reduced all the above parameters (p < 0.05, respectively). Moreover, DKK-1 significantly decreased the cell viability of HSC-T6 cells compared with control group.

Figure 1. Transfection of DKK-1.