**PP-167** Anti-leishmanial effects of paromomycin in both cutaneous and visceral forms of *Leishmania major* infection in Balb/c mice

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**Background:** Leishmaniasis is a zoonotic disease caused by leishmania parasites. Cutaneous Leishmaniasis (CL) is still one of the health problems in tropical areas and Iran. In this study, paromomycin was applied for the treatment of CL in vivo in Balb/c mice infected with *Leishmania major* in order to study its anti-leishmanial effects, inhibition of visceralization, reduction of lesion size and proliferation of amastigotes.

**Methods:** Experimental CL was initiated by injection of promastigotes into the Balb/c mice followed by a small nodule which converted to a lesion. The progress of lesion size was measured weekly. After Paromomycin injection, patho-physiological manifestations and side effects were assessed frequently. Finally, all mice were killed by terminal anesthesia and target tissues were removed, weighted, their impression smears prepared and stained for detection of amastigotes. The proliferation of amastigotes was evaluated by counting them inside five random macrophages and mean percentages were calculated as degree of proliferation. Pathological changes in treated mice, presence of amastigotes in target organs and their proliferation were also evaluated.

**Results:** Although, lesion size in control group had an increase trend, it has reduced in test groups, particularly high concentrations of amastigotes in target organs and their proliferation were also decreased in spleen after L-Arginine-Indomethacin. A significant decline was observed in lesion size by Indomethacin. L-Arginine-Indomethacin had significant inhibitory effects on leishmanias visceralisation. L-Arginine alone decreased proliferation of promastigotes in macrophages. Pathophysiological signs including hepatop/splenomegaly, survival rate and body weight all were affected in this experiment.

**Conclusion:** NO and PG modulation are able to alter the pathophysiological signs in leishmania infected mice and data revealed an association between NO induction and PG inhibition which may indicate a possible role for L-Arginine-Indomethacin as novel therapy in leishmaniasis.

**PP-168** Immunotherapy of cutaneous leishmaniasis by inhibition of prostaglandin and induction of nitric oxide in susceptible Balb/c infected with *Leishmania major*

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**Background:** Leishmaniasis is a zoonotic infection caused by protozoa of the genus *Leishmania*, which is a major health problem in developing countries. Clinical forms of disease are classified as Visceral (VL), Cutaneous (CL) and mucocutaneous leishmaniasis (MCL). CL is still one of health problems in Iran and region. Nitric oxide (NO) eliminates parasite by its anti-leishmanial activity and prostaglandin (PG) inhibits actions of infected macrophages.

**Methods:** In this study, NO is induced by L-Arginine and PG is inhibited by Indomethacin in *L. major* infected Balb/c mice, in order to evaluate the NO/PG effects on proliferation of amastigotes, lesion size and its formation. Target organs were studied to detect amastigotes and to investigate NO induction by Griess microassay and to determine PG by ELISA.

**Results:** NO was inhibited by *Leishmania* itself and by a combination of L-Arginine-Indomethacin as well in infected host. Although NO was decreased in liver by L-Arginine, it increased in spleen after L-Arginine-Indomethacin. A significant decline was observed in lesion size by Indomethacin. L-Arginine-Indomethacin had significant inhibitory effects on leishmanias visceralisation. L-Arginine alone decreased proliferation of promastigotes in macrophages. Pathophysiological signs including hepatop/splenomegaly, survival rate and body weight all were affected in this experiment.

**Conclusion:** NO and PG modulation are able to alter the pathophysiological signs in leishmania infected mice and data revealed an association between NO induction and PG inhibition which may indicate a possible role for L-Arginine-Indomethacin as novel therapy in leishmaniasis.

**PP-169** Anti-malarial effects of Iranian flora *Artemisia khorassanica* on experimental Plasmodium berghei infection and analysis of its pharmacocchemistry

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**Background:** Malaria is a major problem in many countries and Iran. Controlling malaria is now becoming difficult because of the developing resistance of *P. falciparum* to commonly used antimalarial drugs. Artemisia is one of major genus of the family Asteraceae, which is a potent antimalarial drug and could be a source of treatment. Artemisia is represented by wild species growing in different parts of Iran and some species are endemic.

**Methods:** The Iranian flora *A. khorasanica* was collected at flowering stage from Ghouchan Mountains in Khorassan province north-eastern Iran and aerial parts were air-dried in shade. Its chemical components were identified by GCMS, extracted in methanol and subsequently fractionated by bromohexane. Extraction was applied by air-dry procedure and the residue separated by column chromatography. Elution column was done by extract analysis using Thin-layer chromatography. Toxicity was assessed by inoculation of herbal extract into naive mice and in vivo anti-malarial effects of *A. khorasanica* extract was evaluated against *Plasmodium berghei* infection.

**Results:** This study demonstrated *A. khorasanica* possess anti-malarial activity and results were supported by Spectrometry of products and identification of chemical non-polar components by GCMS.

**Conclusion:** The antimalarial action of *A. khorasanica* was observed against *P. berghei* and can be attributed to the presence of its compounds as an antiplasmodial drug. This study revealed that *A. khorasanica* had high amounts of sesquiterpene lactones, but it needs more studies to be clarified. This is the first application of this herbal extract and its composition against murine malaria infection.

**PP-170** Echinococcosis/hydatidosis in Iran

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**Objectives:** Cystic echinococcosis caused by *Echinococcus* spp. is considered hyper endemic in Iran. To clarify the present status of hydatidosis in Iran the present review article is presented.

**Methods:** Authentic databases and search engines from 1996 onwards were utilized to enquire the situation of the disease in Iran.

**Results:** Human hydatidosis is responsible for approximately 1% of admission to surgical wards and the rate of human infection is 0.6-1.2/100000. The usual order of involvement, i.e. liver, lung, and other organs, respectively is documented here as well. Risk factors include contact with dog, eating vegetable, geophagy...