Reemerging of Mediterranean visceral haemophagocytic syndrome (HPS) in North of Iran: molecular and serological evidences

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Background: Over the last decade, the incidence of Mediterranean visceral leishmaniasis (MVL) has increased in many districts of the province of Mazandaran, in northern Iran, where the first human case of MVL was reported in 1949. This study aimed to determine prevalence of human and canine visceral leishmaniasis for the first time in the province.

Methods: Between 2009 and 2010, blood samples were collected from 401 apparently healthy subjects from communities and forty-nine domestic dogs, in the central zone of Mazandaran Province (including Semeskandeh and Kiakola districts), where new human VL case had emerged. Each of these samples was tested for anti-Leishmania antibodies, in direct agglutination tests (DAT), and for L. infantum kinetoplast DNA on whole blood, in PCR-based assays.

Results: Of the 401 human samples from studied area, eight (2%) were found seropositive at 1:1600 titer and none was found PCR-positive. Of the 49 dog samples, 17 (34.7%) showed anti-Leishmania antibodies with titers 1:80 and 2 (4.1%) were PCR-positive. All PCR-positive dogs were not seropositive. In addition, all PCR-positive dogs had clinical signs while all human cases were asymptomatic subjects.

Conclusion: Our preliminary study showed that asymptomatic human carriers of L. infantum are quite common in the study areas. Moreover; the results correspond to reemerging of MVL in this non-endemic area in which the first human case of visceral leishmaniasis had been reported in Iran. Thus, further investigations regarding sandflies fauna and animal reservoirs are required in this province.

Mosquitocidal and antifecundity effects of coumarin and betulinic acid isolated from Cassia siamea (Fabaceae) stem bark chloroform extract on female Anopheles stephensi (Diptera: Culicidae)

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Prevalence of malaria mortality and morbidity caused by Plasmodium and Anopheles needs the development of new tools to fight malaria. In order to develop new tools to fight against malaria, the bark of Cassia siamea was subjected to phytochemical investigation, which led to the isolation of coumarin and betulinic acid. We conducted a chronic administration in the form of food from the chloroform extract of the coumarin and betulinic acid at the concentrations of 2000, 800 and 1600 ppm respectively, once every two days, for 21 days corresponding to the sporogonic cycle. The results have shown an efficiency of 100% mortality in the group of mosquitoes treated by coumarin on day 15, an efficiency of 90% mortality in the group of mosquitoes treated with betulinic acid at day 20, finally efficiency 71% mortality in the group of mosquitoes treated with the chloroform extract. The sporogonic cycle duration, was evaluated at 21 days. Coumarin and betulinic acid have reduced the fecundity of females’ mosquitoes half. Coumarin and betulinic acid are mosquitocidal and antifecondity properties.

Haemophagocytic syndrome (HPS) associated with Mediterranean visceral leishmaniasis (MVL)

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We report a case of haemophagocytic syndrome (HPS) associated with acute Mediterranean visceral leishmaniasis (MVL) from Fars Province, in southern Iran, where MVL is endemic. The patient, a 4-month-old girl, was referred to hospital with abdominal pain high-grade fever and splenomegaly. Hematological findings revealed severe anemia, and pancytopenia. A trephine biopsy revealed a hypercellular marrow with few amastigotes as well as many macrophages contains lymphocytes, RBC and amastigotes. Anti-Leishmania antibodies was shown to be present at titers 1:64 and 1:1600 by IFA and DAT respectively. Moreover, by specific polymerase chain reaction (PCR) on peripheral blood and urine, a 145bp band corresponding to kDNA from the genus Leishmania was detected and the species was identified as L. infantum using nested-PCR. This is first report of MVL/HPS from Iran which the species was characterized by PCR. The patient was treated successfully with two courses of liposomal amphotericin B plus corticosteroid.

Intentional present situation of scientific productions of Iranian’s researchers in parasitology domain

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Background: In the present decade, the term 'scientific production' was considered as one of the important topic. The aim of this study was to investigate international present situation of scientific productions of Iran’s researchers in parasitology field.

Methods: This scientometric study was conducted using bibliographic records from the ISI databases restricted to