

Changes in Liver Cell Apoptosis after Vaccination by Schistosomulae Antigen and/or Artesunate Treatment in Murine *Schistosoma Mansoni*

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ABSTRACT

Background and Study aim: The target for a schistosoma vaccine or treatment is the reduction in morbidity. The hope for vaccine or treatment is to decrease worm burden and egg pathology to the least percentage, this work aimed to compare between schistosomulae lung stage antigen (SLAP) with and without adjuvant (IL12) and artesunate (ART) treatment regarding their effect especially on liver cell apoptosis.

Materials & Methods: Schistosomulae were extracted from the lungs 18 days post infection with *Schistosoma mansoni*. Eight groups of Swiss albino mice (8 mice each group) were classified as follows: Group A was served as healthy control group, group B was infected with ± 100 cercariae and served as infected control group, group C infected then treated by artesunate monotherapy (400 mg/kg) single oral dose 6 weeks post infection. Group D was immunized with 50 ug of SLAP then infected, group E infected then treated by artesunate monotherapy (400 mg/kg) single oral dose 3 weeks post infection, group F was immunized with 50ug of SLAP and 100ug of IL12, group G was immunized with 50ug of SLAP and 100 ug of IL12 then infected then treated by artesunate monotherapy (400 mg/kg) single oral dose 6 weeks post infection, group H was immunized with 50 ug of SLAP and 100ug of IL12 infected then treated by artesunate monotherapy (400 mg/kg) single oral dose 3 weeks post infection. All groups vaccinated with SLAP vaccine were given booster doses after 2 weeks of the first doses. Seven weeks post infection mice were sacrificed for parasitological parameters measurements (worm burden, tissue egg load and oogram pattern), histopathological and immunohistochemical studies using P53 and Bcl-2 markers for determination of liver cells apoptosis.

Results & Conclusion: Apoptosis detected by immunohistochemical studies is a good evaluation method. IL12 potentiated the protective effect of SLAP vaccine, ART 3 weeks post infection is better than 6-week post infection in reduction of liver pathology and apoptosis. The combination of both (SLAP+IL12+ART 3-week post infection) is the best regarding the reduction of tissue egg count, worm burden, hepatic immunopathology and apoptosis.

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