Congenital transmission of *Schistosoma haematobium* (Biharz.1852) in mice embryo and its histological effects on first and second delivery infants born from experimental infected mothers

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ABSTRACT

The present study revealed that the infection rate in the laboratory *Bulins truncatus* exposed to (10-12) miracidia /snail was (71.57%) while snail exposure to (3-5) miracidia /snail give mild infection rate (22.3%). The percentage of infection intensity in experimental mice with ***Schistosoma haematobium*** was (57.90-90) worm per infected male,(58.33-85.217) worm per infected female with two different doses of (250)& (500) cercariae per mice respectively. This study divided the pregnancy period of mice as : Early- pregnancy (2-6) day, Mid-pregnancy (9-13) day and Late-pregnancy (16-20) day, the abortion occurs only at Late-pregnancy with a percentage (50%).

The present study represented the first record in Iraq of congenital transmission of ***Schistosoma haematobium*** in neonatal born to mothers infected within Late-pregnancy period (7.40%).

Our results indicate that the mortality percentages at the first delivery infants were (39.47%), (35.8%) and (33.3%) for Early- Pregnancy ,Mid-pregnancy and Late-pregnancy respectively , while the mortality percentage at Second delivery infants was (46.6%) in late pregnancy only. Some abnormal changes occurred in the behavior of second delivery infants, such as Hypo-activity, Motor weakness and Anorexia.

The detected histopathological study of aborted pregnant lungs after (2-3)days shows intra and extra alveolar haemorrhage . Whereas, the histological findings of congenital infection of four mice (born to infected mothers in late gestation) show histopathological changes resembled those of the non-congenitally infected first and second delivery infants.

In respect to congenital infections, histological changes in the liver tissue showed congestion, haemorrhage , infiltration, the adult parasites lodge in the tributaries of the portal vein with pronounced inflammatory reaction around worm and eggs, deposition of hemosiderin, granuloma formation , and liver cell necrosis. Moreover granulation tissue formation progressing to fibrosis and lead to a condition referred to pipe-stem fibrosis.

The pathological changes in lung tissue represented by congestion, haemorrhage of the alveoli, worms were seen in the lungs which cause obstruction of the alveoli, lymphoma formation, and inflammatory response.

On the other hand, spleen shows haemorrhage , increase the numbers of inflammatory cells and venous sinuses congestion . Moreover the study recorded congestion, haemorrhage , inflammatory response and cell division in the kidney tissue.

Regarding the experimental infection of mice with ***Shistosoma haematobium***, the mice died after the interval times (1-12, 20-48, 58-100,105-194) day Post infection with similar histopathological changes in their congenitally infected infants . In addition to other changes as liver cell division, inflammatory reaction around bile ducts, degeneration and hyperplasia of the bile duct. Portal hypertension arises from obstruction of the portal radicles by worm, granulomas around schistosoma eggs in the lungs. Moreover fibrous tissue formation around eggs in the spleen in addition to fibrosis and focal glomerulonephritis in the kidney tissue.

Other involving tissues are small and large intestine including inflammatory changes, eggs in the tissues induce a granulomatous reaction, and the adult worms presented in mesenteric veins.

The gross appearances include congestive splenomegaly, hepatomegaly and kidney Oedema.

The blood parameters of the mothers infected in Early- Pregnancy , Mid-pregnancy and Late-pregnancy after (2) day from cercarial exposure, Where schistomula had caused severe patho-physiological effects in Late-pregnancy in comparison to the other two periods.

These effects represented by sever drop in RBC count [resulting in haemorrhagic Anaemia (macrocytic –hypochromia anaemia)], Hb and PCV. Moreover leucocytosis in a three period of the gestation.