Molecular diagnosis of *Eimeria stiedae* in hepatic tissue of experimentally infected rabbits

*Khaled. M. Hassan, **Waleed M. Arafia, ***Waheed.M.Mousa, ,*Khaled.A.M Shokier, Salama A. Shany**** and **Shawky M. Aboelhadid


The corresponding author:

Shawky Mohamed Aboelhadid

Parasitology department, Faculty of Veterinary Medicine, Beni-Suef University,

Beni-Suef 62511, Egypt

E. mail: drshawky2001@yahoo.com

TelFax: +2 082 2327982

Mobile: +2 01013694081

Abstract

The early detection of *Eimeria stiedae* in hepatic tissue of experimentally infected rabbits by molecular assay was studied. The experiment was conducted on 40 male New Zealand rabbits of 6 weeks age. The rabbits were divided into infected group (A) of 30 rabbits and control uninfected group (B) of ten. Group A was infected with $2.5 \times 10^4$ sporulated oocysts of *E. stiedae* per rabbit at zero day. Three animals of group A and one of group B were sacrificed at 0, 3, 6, 9, 12, 15, 18, 21, 24 and 27 days post infection (PI). PM findings and light microscopy were estimated. In addition, PCR was applied to detect *E. stiedae* in blood, liver tissues
and feaces. Macroscopically, liver showed the specific lesions of irregular yellowish white nodules beginning from the 15\textsuperscript{th} days PI then is more prominent gradually. Hepatomegaly and ascites were obvious from the 21\textsuperscript{st} to the 24\textsuperscript{th} days PI. Histopathologically, presence of different schizonts and gametocytes of \textit{E. stiedae} in the biliary epithelium appeared clearly at the 15\textsuperscript{th} day PI. Molecular PCR on blood in the first 9 days PI showed no results. While it revealed the specific amplicon of \textit{E. stiedae}, 976 bp on liver tissues starting from the 12\textsuperscript{th} day PI. Moreover, PCR assay on fecal samples showed positive results from the beginning of oocysts shedding (18\textsuperscript{th} day PI). In conclusion, the conventional PCR could detect \textit{E. stiedae} schizonts starting from the 12\textsuperscript{th} day PI earlier to specific PM lesions and before shedding of the oocysts in feaces, also before the clinical signs progressed.