Research No.	3

Effect of mefloquine on biological and biochemical aspects of *Lymnaea natalensis* snails infected with *Fasciola gigantica*

Published date: 9/1/2019

Abstract:

Background : The effect of the mefloquine drug on the survival rate, egg production, and infection of snails with *Fasciola gigantica* was studied. Also, the present study was designed to investigate the response of the snail *Lymnaea natalensis* for physiological and molecular aspects of the snail after exposure to mefloquine for 2 weeks. Results:

It was found that the exposure of *Lymnaea natalensis snails* to mefloquine drug led to a significant reduction in the survival rate and egg production. The results obtained also showed that infectivity of *Lymnaea natalensis* with *Fasciola gigantica* miracidia was greatly reduced by exposure to LC25 of mefloquine drug. The data showed that in treating snails, glucose concentration (GL) in the haemolymph as well as lactate (LT) in soft tissues of treated snails increased, while glycogen (GN), pyruvate (PV), total protein (TP), and nucleic acids (DNA and RNA) levels in snail's tissues decreased. In addition, the activity level of some enzymes representing glycolytic enzymes as hexokinase (HK), pyruvate kinase (PK), phosphofructokinase (PFK), lactate dehydrogenase(LDH), and glucose phosphate isomerase (GPI) was also significantly reduced in response to treatment. Conclusion: DNA changes were studied by comet assay and the overall results revealed that mefloquine drug has genotoxic effect.

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