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Potentiality of curcumin on ISHAK scoring system and the expressions of BAX, IL-17A, and EGF in the treatment of *Schistosoma mansoni* infection using Swiss albino mice

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ABSTRACT :

The present study evaluated the antiparasitic effect of curcumin extract on *Schistosoma mansoni* in Swiss albino mice. The experimental design included four groups of *S. mansoni* infected mice; without treatment (controls), curcumin-treated, Praziquantel (PZQ)-treated, and PZQ +curcumin treated mice. The results showed that curcumin improved ISHAK confluent necrosis score up to zero. PZQ +curcumin showed a significant reduction in portal inflammation. Both activity and fibrosis demonstrated lower scores in all treated groups, however, PZQ revealed a marked increase in confluent necrosis and interface hepatitis. Besides, the lobular inflammation revealed worsening in the overall ISHAK score in all treated groups compared with the control. Few periocular granulomas were recovered by PZQ +curcumin treatment at day 35 post-treatment (6 ± 1.2), P -value < 0.05 . Curcumin revealed a mild reduction (60 ± 7.376). Curcumin-treated groups, with and without PZQ, resulted in higher significant Immunoreactivity score (IRS) for Bcl-2-associated X (BAX) and lower Interleukine- 17A (IL-17A), and Human epidermal growth factor (EGF), compared to the control. However, PZQ revealed a lower mean IRS value in BAX, higher IL-17A and EGF in the periovulatory granuloma. It was concluded that PZQ +curcumin treatment had a potent synergistic outcome through lessening the number of granulomas, the inflammatory events, and the expression of EGF, and amelioration of apoptosis in the periovulatory granulomas if compared with either PZQ or curcumin alone.

Keywords: BAX; EGF; IL-17A; Curcumin; ISHAK score.