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Dandelion (*Taraxacum officinale*) Improves the Therapeutic Efficiency of Praziquantel in Experimental Schistosomiasis

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Abstract:

Although praziquantel (PZQ) has a wide use as an anti-schistosome agent, many of its imperfections and side effects have been reported in many studies. The current study aims to evaluate the curative effect of a natural dandelion extract (*Taraxacum officinale*) on schistosomiasis either alone or in combination with PZQ based on parasitological, immunological, histopathological and molecular investigations. Methods:

Mice were experimentally infected with *Schistosoma mansoni* cercariae and then divided into four groups, *Schistosoma* spp.-infected untreated group (IC group), *Schistosoma* spp.-infected group of mice treated with dandelion (I-Dn group), *Schistosoma* spp.-infected group of mice treated with PZQ (I-PZQ group), and *Schistosoma* spp.-infected group of mice treated with both PZQ and dandelion (I- PZQ + Dn group). Treatment started 45 days' post-infection. Besides, non-infected, non-treated mice served as the negative healthy control group (HC group). Results:

The present results indicated that dandelion administration significantly reduced the worm burden, ova number, and the number and diameter of hepatic granulomas as compared to the untreated infected group. The results also showed that the levels of IL -6

and TNF- α were significantly decreased in the combined treatment group (I-PZQ + Dn) as compared to the I-PZQ group. Administration of dandelion-only remarkably reduced AST and ALT activities associated with schistosomiasis. Moreover, hepatic DNA damage assessed by comet assay was significantly inhibited in the combined treated group compared to the infected untreated and PZQ treated groups. Conclusion :

The results concluded that combined treatment of PZQ and dandelion extract improved immune response, decreased the number and diameter of granulomas, and inhibited DNA damage, indicating a reduction in liver fibrosis associated with schistosomiasis .The present study focused on the potential effect of dandelion as an adjunct medication for therapeutic properties of PZQ.

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