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CHEMICAL PROFILE AND *IN VITRO* EVALUATION OF *Tamarindus indica* L. (FABACEAE) ON *Helicobacter pylori* AND ITS IMPLICATIONS IN INFECTION

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The current scenario indicates high rates of *Helicobacter pylori* resistance to established treatments, highlighting the need for new therapeutic alternatives, and a valuable tool is ethnopharmacological research. For *H. pylori*, a bacterium with high global prevalence (43.9%) and associated with the main cause of peptic ulcers and gastric cancer, this screening can be performed using plants that exhibit gastroprotective and antiulcer properties, a potential observed in traditional medicine in *Tamarindus indica* L. (Fabaceae). In this scenario, this study aimed to evaluate the chemical profile of *T. indica* seeds and fruit peels and their anti-*H. pylori* activity and evaluate *in vitro* the implications of the infection, such as oxidative stress, peptic ulcers and gastric cancer, through antioxidant, wound healing, and cytotoxic assays for gastric adenocarcinoma cells (AGS). The chemical profile was evaluated through preliminary phytochemistry tests and liquid chromatography combined with mass spectrometry (LC-MS). The anti-*H. pylori* property was evaluated through the broth microdilution technique with ATCC and clinical strains. The antioxidant potential was evaluated through assays with DPPH, ABTS and superoxide radicals. The cytotoxic activity was assessed using the MTT method in AGS tumor and non-tumor fibroblast cell lines (L-929) for selectivity analysis. Lastly, the healing effect was assessed using the *scratch* assay. In the preliminary phytochemistry, the methanolic extracts of the fruit peel (EBC) and seed (EBS) demonstrated the presence of phenolic compounds such as flavonoids and tannins, however, only EBS indicated the presence of saponins. LC-MS analysis suggested the presence of trans-cinnamic acid and epiandrosterone in EBS, associated with the observed antioxidant effects, with EC_{50} values close to the standard, anti-*H. pylori* with a minimum inhibitory and bactericidal concentration of 512 µg/mL, and a selective cytotoxic effect against AGS. While EBC showed relevant dose-dependent wound healing activity, this action may be related to the annotated flavonoid pinocembrin. Therefore, the fruit peel and seed of *T. indica* L. have been shown to have a synergistic effect in the treatment of *H. pylori* and its implications for infection, although further studies are needed to understand the mechanisms of action of the isolated compounds.

Keywords: *Helicobacter pylori; Tamarindus indica; Ethnopharmacology; Seeds; Fruits.*