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Cytoprotective effect of *Hypericum triquetrifolium turra*. On cyclophosphamide-induced cardiotoxicity in rat

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Cardiotoxicity is one of the limiting side effects of this commonly used anticancer agent and cardiotoxic effects of CP were found to be dose-related cardiac damage, morphologically defined necrosis, bleeding. *Hypericum triquetrifolium Turra* (HT) is a phenolic component with antioxidative and anticarcinogenic properties. This study aimed to investigate the possible protective effect of HT on CP-induced cardiotoxicity. Serum aspartate transaminase (AST), alanine transaminase (ALT), lactate dehydrogenase (LDH), malondialdehyde (MDA), creatine kinase-MB (CK-MB), total oxidant state (TOS), total antioxidant state (TAS), oxidative stress index (OSI) was examined. Furthermore, the cardiac tissues were analysed histologically. Albino rats (Wistar, 3-4 months old, male, weight 220 ± 20 g healthy) were randomly divided in 9 groups, each including seven animals: Group 1 (control) treated with 0.5ml saline; groups 2 treated with 150 mg/kg CP, respectively; group 3, 4 and 5 treated with 25, 50 and 100 mg/kg HT; groups 6, 7 and 8 treated with 25, 50 or 100 mg/kg HT+CP, group 9 treated with 0.5ml - 2% DMSO. The results were analyzed by One Way Analysis of Variance and Kruskal-Wallis One Way Analysis of Variance on Ranks Test. Levels of AST, ALT, LDH, MDA, CK-MB, TOS, OSI were found high only in the CP groups. GSH and TAS levels were found low in the only CP groups. There was a dose-dependent on the CP-induced cardiotoxicity. Hemorrhage, inflammatory cell infiltration and the separation of the muscle fibers in the heart tissue supported the biochemical data. With 25, 50, 100 mg/kg HT, there was an important decrease in the CP toxicity and reduced inflammation and lipid peroxidation in the heart tissue and increase of serum glutathione (GSH) and total antioxidant capacity (TAS) levels were found when HT was applied. Based on these findings, it could be proposed that HT was a strong candidate in preventing the CP-induced cardiotoxicity but further clinical studies should be done in order to verify its application on humans.

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Healthcare providers' knowledge and their counseling practice about warfarin in the university teaching tertiary care hospital, addis ababa, ethiopia

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Objective: The main objective was to assess healthcare providers' knowledge about warfarin and their counseling practice on warfarin at Tikur Anbessa Specialized Hospital (TASH).

Material and Methods: Cross sectional study design which included 164 pharmacists and physicians was conducted at TASH, Addis Ababa Ethiopia. The assessment was through questionnaire which consisted of 15 multiple choice questions on warfarin knowledge and 4 questions on counseling practice about warfarin (multiple choice and open ended questions). The data was analyzed with SPSS and the differences between groups were compared using one-way ANOVA followed by turkey's post-hoc test.

Results: Out of 15 questions the mean total score was 9.98 (SD=1.67). Among study participants, there was no one who gave correct answers to all questions. The total score of the overall test were (9.45 + 1.63) by pharmacists, (10.06 + 1.49) by interns and (10.35 + 1.77) by residents. In their counseling practice, among the total study participants, 61.6% and 29.3% of them responded as they provide counseling services for all and only for new patients who are on warfarin respectively. Among the factors which have influence on their counseling practice insufficient time and poor counseling environment predominantly affect 54.3% and 32.9% of study participants respectively.

Conclusion: Based on this study finding it can be concluded that the knowledge of healthcare providers regarding oral anticoagulation was inadequate. Residents had better knowledge than pharmacists and interns on questions related to warfarin. The study participants had different experience on providing counseling for patients on warfarin.

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