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Prescription audit with special emphasis on drug-drug interactions study in a tertiary care teaching hospital

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Drug-Drug Interactions (DDIs) may be defined as when two or more drugs interacting in such a manner that the effectiveness or toxicity of one or more drugs is altered. DDI in patients receiving multidrug therapy is a major concern. Although drug-drug interaction constitute only small portion of adverse drug reactions, they are often predictable and therefore avoidable or manageable. The aim of the present study was to assess the incidence and severity of DDIs in patients admitted in a tertiary care teaching hospital. A prospective, observational study was carried out for a period of 6 months (Jan-June 2013). During the study period, a total of 300 prescriptions were analyzed and was found that 242 prescriptions had DDI. The average number of drugs in each prescription was 8. Regarding the severity of clinical results, the interaction was classified as minor (114), moderate (447), major (40) from the 242 prescriptions. The 40 major DDI are reported from 32 prescriptions which lead to increased hospitalization and health care cost of the patients. Drug-drug interaction was identified by using micromedex, Stockley's drug interaction book and other reputed journals. Many physicians were unaware of various drug-drug interactions. Hence education, computerized prescribing system and drug information along with collaborative drug selection and pharmaceutical care are strongly encouraged for physicians and pharmacists to avoid such incidences.

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Bioactive chemical compositions and *in vitro* assessments of antioxidant and antidiabetic potentials of ethanol extract fractions from *Ehretia cymosa*_Thonn

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Ehretia cymosa Thonn is a popular medicinal plant used in different parts of West Africa for the treatment of various ailments Eincluding diabetes mellitus. The current study investigates bioactive constituents and *in vitro* antioxidants and antidiabetics potentials of ethanol extract fractions from *E. cymosa*. Phytochemical investigation and antioxidant assays were carried out using standard procedures, antidiabetic potential was assessed by evaluating the inhibitory effects of the extract fractions on the activities of α -amylase and α -glucosidase while bioactive constituent's identification was carried using GC-MS analysis. The phytochemistry tests of the extract fractions revealed the presence of tannins, phenols, flavonoids, steroids, terpene, alkaloid and cardiac glycosides. Methanol fraction showed higher phenolic (27.44 mg gallic acid g-1) and flavonoid (235.31 mg quercetin g-1) contents while ethylacetate fraction revealed higher proanthocyanidins (28.31 mg catechin g-1). Methanol fraction displayed higher (p<0.05) DPPH (0.47 mg/mL), ABTS (0.49 mg/mL) and hydroxyl radical (0.55 mg/mL) scavenging activities while ethylacetate exhibited strong metal chelating (0.61 mg/mL) and superoxide anion (1.68 mg/mL) scavenging activity. Methanol and ethylacetate fractions displayed higher inhibition (p<0.05) against α -glucosidase (0.60 mg/mL) and α -amylase (2.11 mg/mL), respectively. Methanol fraction also inhibited α -amylase and α -glucosidase in competitive and non-competitive modes, respectively. The GC-MS chromatogram of the methanol fraction revealed 24 compounds which include phytol (1.78%), stearic acid (1.02%) and 2-hexadecyloxirane (34.18%) which are known antidiabetic and antioxidant agents. The results indicate *E. cymosa* leaves as source of active phytochemicals with therapeutic potentials in the management of diabetes.

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