

## Herb-drug interactions: An overview of the clinical evidence

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Herbal medicines are mixtures of more than one active ingredient. The multitude of pharmacologically active compounds obviously increases the likelihood of interactions taking place. Hence, the likelihood of herb-drug interactions is theoretically higher than drug-drug interactions, if only because synthetic drugs usually contain single chemical entities. Case reports and clinical studies have highlighted the existence of a number of clinically important interactions, although cause-and-effect relationships have not always been established. Herbs and drugs may interact either pharmacokinetically or pharmacodynamically. Through induction of cytochrome P-450 enzymes and/or P-glycoprotein, some herbal products (e.g. St. John's wort) have been shown to lower the plasma concentration (and/or the pharmacological effect) of a number of conventional drugs, including cyclosporine, indinavir, irinotecan, nevirapine, oral contraceptives and digoxin. The majority of such interactions involve medicines that require regular monitoring of blood levels. To date, there is less evidence relating to the pharmacodynamic interaction. However, for many of the interactions discussed here, the understanding of the mechanisms involved is incomplete. Taking herbal agents may represent a potential risk to patients under conventional pharmacotherapy. Due to the growing use of herbals and other dietary supplements healthcare providers and consumers need to know whether problems might arise from using these preparations in combination with conventional drugs. The use of herbal products has dramatically increased over the past decade, driving physicians to become educated in regards to potential herbal complications and drug interactions. From 1990 to 1997, the herbal product market increased by 48%, with 42% of the population using alternative treatments and spending an estimated \$27 billion on them. Herbal products are widely available, relatively inexpensive, and often make alluring but unsubstantiated claims. Herbal medicine appeals to consumers who believe that natural herbal products are preferable to synthetic pharmaceuticals.

## Oral toxicity studies of hydroethanol root extract of *Annona stenophylla* in rats

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The resurgence of interest in traditional, complementary and alternative medicines TM/CAM has resulted from the preference of many consumers for products of natural origin. There is however need to share national experiences and information on a global platform so as to expedite development of common standards and guidelines. The lack of these standards is a concern with regards to TM/CAM safety, efficacy and quality control and that leaves the public and authorities with questions regarding use of traditional medicines and products available on the market. Amongst the commonly used plants by traditional medical practitioners (TMPs) in Zimbabwe is *Annona stenophylla* (Annonaceae) commonly known as dwarf custard apple (English). Its traditional uses include treatment of gonorrhoea, syphilis, abdominal pains, diabetes, sprains and boils. The rationale of continued use of herbal medicines based on long term clinical experience alone is not enough to justify blind therapy.

This study therefore sought to establish any toxicity effects of *Annona stenophylla* by determining changes in biochemical parameters and determining any histological changes of internal organs of rats, orally administered with the crude hydroethanolic root extract. A 28 day oral toxicity test was done using doses 250, 500 and 1000 mg/kg b.w extract. Animals were fed daily at the same time and observed for any physical signs of toxicity or abnormal behaviour. Using cardiac puncture, blood was drawn and serum analysed for creatinine, total bilirubin, alanine transaminase aspartate transaminase, alanine phosphatase and gamma glutamyl transferase, and histopathological examination was done on the liver and pancreas stained using haematoxylin and eosin stains and some photographs were taken.

Results for the biochemical tests and histological photographs are as attached. Results still being analysed and a final abstract will be drafted.