

Pharma Middle East

November 02-04, 2015 Dubai, UAE

Pharmacokinetic interactions between *Hypericum perforatum* L. and conventional drugs

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Introduction: *Hypericum perforatum*, more commonly known as St. John's wort, is a recognized medicinal plant with recognized antidepressant properties. It affects the pharmacokinetics of many drugs by inducing cytochrome P450 (CYP) isozymes and the P-glycoprotein (P-gp) transporter. This review focuses on drugs that their pharmacokinetics affected by this medicinal plant.

Method: All electronic databases such as PubMed, Scopus, Google Scholar and Cochrane library were searched to identify *in vitro*, *in vivo* or human studies about the effects of *Hypericum perforatum* on the metabolism of drugs. Data collected were published between 1966 and January 2012.

Results: There are a number of drugs whose metabolism affected by *Hypericum perforatum* including amitriptyllin, docetaxol, digoxin, bupropion, oral contraceptives, fexofenadin, verapamil, immune-suppressants and warfarin. The metabolic interactions between *Hypericum perforatum* and drugs are not always unfavorable and sometimes have benefits (e.g., reduction of irinotecan toxicity and increase in clopidogrel responsiveness). The pharmacokinetics of some drugs does not affect by *Hypericum perforatum*, although they are metabolized by *Hypericum perforatum*-targetted cytochromes. Carbamazepine, ibuprofen and theophylline are examples of these drugs.

Conclusion: The use of *Hypericum perforatum* preparations is not recommended in patients who are taking immune-suppressants or cardiovascular drugs. With other medications, it is recommended that practitioners should only use preparations with low hyperforin content and under careful monitoring. Because of the reduction in the bioavailability of oral contraceptives, women who use *Hypericum perforatum* preparations should use additional preventive methods to avoid unintended pregnancy.

Biography

Roja Rahimi has completed her PhD in the year 2012 from Tehran University of Medical Sciences and she is now an Assistant Professor at School of Traditional Pharmacy of Tehran University of Medical Sciences. She has published more than 70 papers in reputed journals and has been serving as an Editorial Board Member of 6 international journals. Her H-index is 26. Her research interests are discovery of pharmacological mechanisms and pathways of natural products, evaluation of efficacy and safety of natural products, and formulation and standardization of natural medicines.

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