Abstract

Warfarin is the most frequently used drug of a group of oral anticoagulants. I t is a racemic mixture of S- and R-warfarin, the S- warfarin has a 5 times higher efficiency. Warfarin, like other 4hydroxycumarin derivates used as oral anticoagulants, acts as an antagonist of vitamin K inhibits vitamin K dependent synthesis of biologically active forms of calcium-dependent coagulation factors. The target enzyme for warfarin is vitamin K epoxide reduktase complex 1 VKORC1.

Xenobiotics are metabolized by hepatic biotransformation enzymes of cytochrome P450. Drug-drug interactions, where one substance increases the activity of biotransformation enzymes involved in the metabolism of other drug and accelerate its elimination, often occure in xenobiotics metabolism. The pregnane X receptor is a ligand-activated nuclear receptor, which plays central role in induction of numerous genes involved in the phase I. and II. of biotransformation including the most important hepatic enzyme CYP3A4.

Effective warfarin therapy is complicated by inter-individual variability in metabolism. Recent studies have demonstrated that CYP3A isoforms libely contribute to clinical outcomes and patient responses. Despote a significant focus on CYP3A4, little is known about CYP3A5 and CYP3A7.