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Dominik Mark Alscher
Ulrich Klotz

Drug interaction of herbal tea containing St. John's wort with cyclosporine

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D. M. Alscher (✉)
Department of Internal Medicine,
Robert-Bosch Hospital,
Auerbachstrasse 110,
70376 Stuttgart, Germany
E-mail: dominik.alscher@rbk.de
Tel.: +49-711-81013496
Fax: +49-711-81013792

U. Klotz
Dr. Margarete Fischer-Bosch Institute
of Clinical Pharmacology, Stuttgart,
Germany

Dear Editors:

St. John's wort is a widely prescribed antidepressant in Germany, and its popularity is increasing in many countries, despite some discussion on its clinical benefit [4]. Little information exists regarding the safety of this kind of herbal agent, including potential drug interactions [3]. Several case reports have shown that St. John's wort *(Hypericum perforatum)* may induce several CYP450 isoenzymes (mainly CYP3A4), as well as P-glycoprotein transport/efflux, which may thus lead to a reduction in cyclosporine blood concentration and the risk of acute transplant rejection [1, 2, 5].

In a kidney transplant patient (57 years old, 70 kg, with serum creatinine levels of 1.1–1.3 mg/dl) with a long-term regular intake of cyclosporine (125–150 mg/day) and prednisolone (5 mg/day), routinely monitored blood levels of cyclosporine had varied between 100 and 130 μg/l (trough steady-state concentrations) over the past 2 years. At the beginning of this year, his blood levels suddenly dropped to around 70 μg/ml, despite the daily dose being raised to levels as high as 250 mg. Surprised by these low blood concentrations, we thoroughly checked the patient for any suspicious co-medication, and initially no putative agent could be verified. Later the patient briefly mentioned that he had started to drink regularly a herbal tea mixture (Greek remedy), which turned out to contain St. John's wort and which effectively controlled his seasonal depressive symptoms. He was requested to stop drinking this special herbal tea. Five days later, his cyclosporine blood levels rose from 70 to 170 μg/l (250 mg/day), and subsequently, the dosage was reduced to 175 mg/day, resulting in steady-state blood trough levels of around 130 μg/l.

This case once more illustrates that intake of (local) remedies containing St. John's wort might result in uncontrolled variations in cyclosporine blood concentrations, with potentially severe clinical implications for patients on cyclosporine. Consequently, all physicians should be aware that even herbal tea mixtures have the potential to affect the pharmacokinetics and pharmacodynamics of cyclosporine and possibly also other drugs that are subjected to CYP450 metabolism or P-glycoprotein transport. Therapeutic drug monitoring (TDM) may be helpful in identifying drug interactions.

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