Herbal Medicine - Sets the Heart Racing!

Abstract
The potential for pharmaceuticals to produce side effects and drug interactions is well known to medical practitioners and the lay public alike. However, the potential for alternative medicines to produce such effects is less widely known. We describe a potentially dangerous interaction between a herbal medicine and concomitant selective serotonin re-uptake inhibitor (SSRI) ingestion.

Case Report
A twenty six year old Chinese female presented to the emergency department with a one hour history of palpitations and light headedness. Clinical examination demonstrated a regular tachycardia, however vital signs were otherwise normal. Her electrocardiograph confirmed that she had a super ventricular tachycardia (SVT) with a rate of 150 beats per minute. She had previously been well and her only medication was escitalopram 10mg OD for mild reactive depression. There was no history of illicit drug use. She had been studying for examinations and three days previously had commenced Rhodiola, a herbal medication, to aid with concentration. Investigations included normal full blood count, urea and electrolytes, liver function tests. C-reactive protein, thyroid function tests, and chest x-ray were normal. Her D-dimer was normal and there was no hypoxia on blood gas analysis. Her troponin I on presentation was significantly raised at 0.39 mg/l (normal <0.06 mg/l). She was treated with adenosine 6mg intravenously and reverted to normal sinus rhythm. There were no further runs of SVT seen on telemetry. Troponin returned to normal after two days. Further investigations included an echocardiogram and MRI heart to rule out myocarditis. Both were normal.

Discussion
We report the case of a young previously healthy woman who had a significant tachyarrhythmia whilst taking a combination of escitalopram and the over the counter herbal medicine Rhodiola. Escitalopram, a SSRI, increases serotonin levels in the brain by selectively inhibiting re-uptake of serotonin. 1 It is metabolised by the cytochrome P450 (CYP) isoenzymes CYP2C19, CYP2D6 and CYP3A4. 2 Rhodiola also increases serotonin levels by inhibiting monoamine oxidase. It is a potent inhibitor of CYP3A4 and P-Glycoprotein. 3 Consequently both agents taken by a patient can augment serotonin levels. Furthermore, co-administration of inhibitors or inducers of the CYP isoenzymes involved in metabolism of the various antipsychotic compounds may alter their plasma concentrations, possibly leading to clinically significant effects. 4 Serotonin, a monoamine neurotransmitter can produce a serotonin syndrome when present in excess. This syndrome is characterised by autonomic and somatic over activity, and cognitive function can also be impaired.

Our patient did not demonstrate these features with the possible exception of SVT. This clinical case highlights a potential harmful interaction between a prescription and non prescription agents such as herbal medication. Investigation of unexplained clinical presentations should always include enquiry about over the counter and alternative medicines. Regulation of dispensing of these potentially harmful medications should be considered and the further education of the public about the potential harm of taking such medication with prescription drugs may be required.

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