

Beware of serotonin syndrome

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Serotonin syndrome is a medical emergency. It usually occurs when several serotonergic agents are used simultaneously or concurrently and is due to excess serotonin in the central nervous system.

Serotonin syndrome is a clinical diagnosis and a high index of suspicion is required:

[Clinical features of serotonin syndrome \(1\)](#)

Cognitive

- confusion
- agitation
- hypomania
- hyperactivity
- restlessness

Autonomic

- hyperthermia
- sweating
- tachycardia
- hypertension
- mydriasis
- flushing
- shivering

Neuromuscular

- clonus
- hyperreflexia
- hypertonia
- ataxia
- tremor

Medications which are serotonergic include:

- [selective serotonin reuptake inhibitors](#) (SSRIs)
- [tricyclic antidepressants](#) (TCAs)
- monoamine oxidase inhibitors ([MAOI](#) and [RIMA](#))
- [pethidine](#)
- [fentanyl](#)
- [tramadol](#)
- [LSD](#)
- [amphetamines](#) (including [MDMA](#), aka Ecstasy)
- [St John's wort](#)

- [lithium](#)
- [triptans](#) (e.g., [sumatriptan](#))
- [dextromethorphan](#)
- [linezolid](#)
- [sibutramine](#)

Serotonin syndrome is not uncommon, especially in the post-operative patient. A not uncommon scenario is that the patient is on an SSRI with a uncommon trade name. They may have already increased their risk by taking St John's wort as a "natural" supplement for their depression and using amphetamines recreationally. Pethidine is used intra-operatively for analgesia and post-operatively, a fentanyl infusion is used in the recovery bay.

Once back on the ward, the surgical team, not recognising the trade name of the SSRI happily places the patient on the new favourite, tramadol. The early symptoms of serotonin syndrome are assumed to be part of a post-operative delirium.

Although most people now recognise that tramadol doesn't mix with SSRIs, recognition of some of the other serotonergic drugs commonly used in the community and in hospital is often lacking.

Beware! Serotonin syndrome is more common than you think.

Research articles

(1) Hall M., Buckley N. Serotonin Syndrome. *Aust Prescr* 2003;26:62-3 [download [PDF](#) :: 46 Kb]

Updated by: Michael Tam (19 June 2006)