

Case study – possible interaction of herbal sleep remedy containing Lavender essential oil and anxiolytic drugs

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This was a story related to me in August 2018, by an aromatherapist friend and her partner who have been using essential oils for many years for many different purposes. The man is in his 60s, and generally a fit and strong man, an ex-Vietnam veteran, who has been taking anxiolytic medication to help him manage his Post Traumatic Stress Disorder.

They decided to trial a herbal sleep remedy with Lavender oil in it that was supposed to help promote restful sleep, and added a couple of capsules to his medication one evening, as he was not sleeping well.

The morning after taking the herbal sleep capsules this is how the man described his experience:

After waking up following voiding of my bowels in bed:

(1) I tried to get out of bed as I felt unclean.

(2) I could not stand up properly and crashed to the floor. I lay on the floor for several minutes, until I could gather my strength and stand up. By this time my partner helped me up and gave me directions to the shower.

(3) When I was wobbly before I crashed to the floor, I vaguely remember vision problems as I could not orientate myself between the bed and the side dresser and I was quite dizzy. I had to confirm where I was by touch. I took a few wobbly steps and crashed to the floor at the end of the bed. I lost all strength to my knees and collapsed. [This is all very embarrassing to me as I consider myself a Rock and a strong man].

I cannot recall my state the next morning, as from memory, I felt quite crook and stayed in bed until early pm that day.

His usual medication regime, most of which are S4 prescription medications, with extensive warnings, is as follows:

Drug	Dose	Side-effects pertinent to the event
Escitalopram (Lexapro) (SSRI antidepressant)	(20mg) one tablet in the morning	Possible dizziness due to low blood pressure
Seroquel (quetiapine) (Antipsychotic)	(25mg) 2-4 tablets at night - PRN	Possible drug interactions with Lorazepam; falling, feeling dizzy or faint when standing
Imovane (zopiclone) (Sedative-hypnotic)	7.5mg one tablet at night	Possible drug interaction with benzodiazepines; can cause nausea/vomiting/diarrhoea
APO-RISPERIDONE Antipsychotic	(0.5mg) half a tablet at night	Possible drug interaction with SSRIs and other sleeping medications; dizziness due to fall in blood pressure when standing.

(MIMS/myDoctor, 2017)

The capsules contained the following: Lavender essential oil and L-Theanine along with lemon balm, passionflower, and chamomile (dosage not given; preparation not stated for the last three ingredients, whether herbal powder or essential oil).

The list of reference papers given by the capsule company supporting the use of these ingredients was as follows, and I've found out what the dosage was in each of the papers, so the dosage in the capsules was probably something similar.

Reference	Ingredient	Dosage recommended
(Bradley, Brown, Chu, & Lea, 2009)	Lavender oil in capsules taken orally. Acute dosage.	200 microlitres/ once
(Fißler & Quante, 2014)	Lavendula angustifolia oil in capsules taken orally. Dosage over 8 weeks	80 -160 mg per day
(Nobre, Rao, & Owen, 2008)	L-theanine in capsules	50 mg single dose
(Kimura, Ozeki, Juneja, & Ohira, 2007)	L-theanine	200 mg in 100 ml of water
(Kakuda, 2011)	L-theanine. Slight effect on reducing cognitive decline.	47.5 mg per day for 12 months
(Higashiyama, Htay, Ozeki, Juneja, & Kapoor, 2011)	L-theanine effective for highly anxious people	200 mg in 100 ml of water
(Juneja, Chu, Okubo, Nagato, & Yokogoshi, 1999)	L-Theanine	50-200 mg
(Ngan & Conduit, 2011)	Passiflora incarnata tea	1 cup for 7 days
(Kennedy, Scholey, Tildesley, Perry, & Wesnes, 2002)	Ethanollic extract of Melissa officinalis	300, 600, 900 mg acute dose
(Chang & Chen, 2016)	Chamomile tea (2 g Chamomile herb in 300 ml hot water steeped for 10-15 mins). Tea was sourced from Germany, so presumably Chamomila recutita?	Drink 1 cup of tea a day for two weeks
(Scholey et al., 2014)	Melissa officinalis extract	Put into beverages and yoghurt.

The suggested dose for the herbal sleep capsules was 2 capsules a night, which would “deliver the recommended dose” of Lavender essential oil, presumably either 80 mg or 160 mg. This dosage was found to be equivalent to Lorazepam in reducing anxiety if taken over 8 weeks (Woelk & Schläfke, 2010). Linalool, the main constituent in Lavender oil (about 42%) has been shown to potentiate GABA_A receptors, producing a similar effect to benzodiazepines *in vitro* (Milanos, Elsharif, Janzen, Buettner, & Villmann, 2017).

These two papers were what alerted me to the possibility that perhaps the Lavender oil in the capsules may have interacted with the mixture of drugs already in the man's system, to exacerbate the dizziness side-effects. I don't know what would have caused the nocturnal voiding of the bowels while he was asleep, however.

I think the event was a drug interaction between the components of the herbal sleeping capsules and the man's existing medication, and that people taking S4 drugs should take care when taking

oral dosages of Lavender essential oil, as there may well be unexpected drug interactions such as the ones reported here.

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