

# PALLIATIVE PEARLS

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## Shark in The Water: Assessing Serotonin Toxicity Risk In Hospice & Palliative Care March 2023

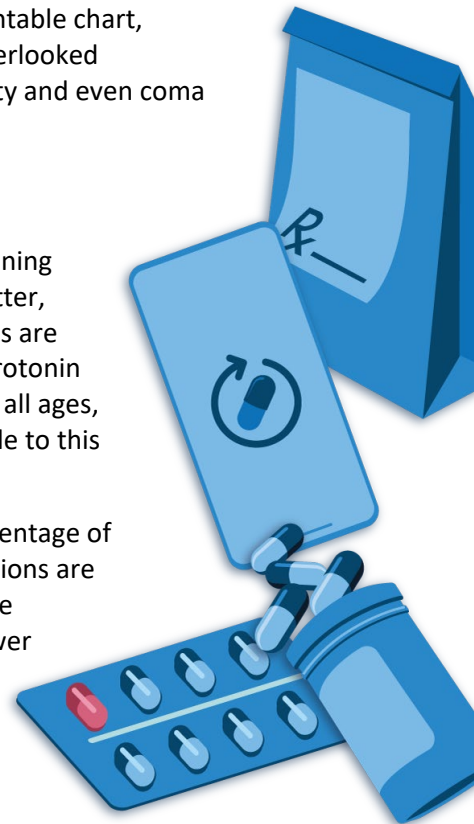
Have you or someone in your household ever yelled, “shark in the water” to let others know there is a sharp knife in the soapy dishwater in the kitchen sink? We do this to warn others that there is something that may hurt you if you are not paying attention. The same is true for an adverse medication event called serotonin toxicity. Enclara Pharmacia has prepared a printable chart, [Medications Impacting Serotonin](#), to accompany this introduction to an often-overlooked contributor to mental status changes, neuromuscular and autonomic hyperactivity and even coma or death.

### Why is Serotonin Toxicity a Risk in Older Adults?

Serotonin toxicity, also known as serotonin syndrome, is a potentially life-threatening condition that can occur when there is an excessive amount of the neurotransmitter, serotonin, in the body. This can happen when certain medications or supplements are taken that increase serotonin levels, or when multiple medications that affect serotonin levels are taken at the same time. While serotonin toxicity can occur in people of all ages, elderly individuals, and those on hospice at the end of life may be more vulnerable to this condition due to changes in their body and metabolism.

As people age, their body composition changes, and they may have a higher percentage of body fat and a lower percentage of muscle mass. This can affect the way medications are absorbed and distributed in the body, leading to higher levels of medication in the bloodstream. Additionally, elderly individuals and those in hospice may have slower liver and kidney function, which can impact the metabolism and elimination of medications from the body. The drugs we use don't change, but the way our bodies process medications does change. These changes can make it easier for medications to accumulate and lead to toxicity and adverse effects, especially when new medications are added or doses of current serotonergic agents are increased. Symptoms are most likely to emerge in the first 24 hours of new additions or dose changes.

Certain medications that are commonly seen and used in hospice such as selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs), can increase serotonin levels in the body. These medications are often used to treat depression, anxiety, and other mood disorders. However, when these medications are taken in combination with other drugs that affect serotonin levels, such as some opioid pain medications, migraine medications, and antipsychotic medications, the risk of serotonin toxicity increases.



## Serotonin Toxicity is Often Underdiagnosed in Hospice

Symptoms of serotonin toxicity involve a spectrum of mental status changes, neuromuscular and autonomic hyperactivity. The symptoms can range from mild to severe and can present as agitation, confusion, sweating, fever, rapid heart rate, muscle stiffness, tremors, and seizures. In severe cases, serotonin toxicity can lead to coma or even death. Can caregivers recognize these signs as potentially dangerous? Or perhaps these symptoms may be dismissed as other conditions such as delirium, sepsis, or opioid-induced neurotoxicity or mistaken as a worsening or decline in the person's overall health condition? Even mild cases of serotonin toxicity may exacerbate pre-existing symptoms caused by the underlying disease, with potential worsening of quality of life.

Preventing serotonin toxicity requires careful medication management and vigilance. The prevalence of serotonin toxicity in seriously ill patients is not known and it may not present with all the classic, "textbook" symptoms. In the context of the hospice and palliative care setting, the risks of serotonin toxicity may not outweigh the benefit the serotonergic medications bring. Collaboration with pharmacists and careful medication reconciliation and review are also recommended when using multiple serotonin-affecting medications.

If serotonin toxicity is suspected, treatment may involve tapering the serotonergic medications to lower doses or even discontinuation. Mild cases may improve or resolve within 24 hours of stopping the targeted medications. In severe cases, hospitalization may be warranted if aligned with the patient's goals of care.

How confident are you and your team in monitoring for signs and symptoms of serotonin toxicity? Are you familiar with and able to recognize common medications used in hospice that affect serotonin? Do you use any reference tools during your Interdisciplinary Group/Team Meetings (IDG/IDT) to assess the serotonin burden in patients in your care to identify those at risk?

## More Resources on Serotonin Toxicity

- Enclara has prepared a printable chart, [Medications Impacting Serotonin](#), specifically for the hospice and palliative care community
- Enclara's open access Palliative Pearls features include a [Serotonin Syndrome Case Study](#) and [Drug Interactions in Hospice: Important Considerations](#).
- Palliative Care Fast Facts #403, [Serotonin Syndrome in Palliative Care](#), includes additional guidelines and references.