

Symptom management of thirst for seriously ill and dying patients in critical care

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Symptom management in critical care has long been a challenging area to research. In this issue, Flim et al [1] report on the evidence around managing thirst in critical care. Surprising to many is how much of a problem this symptom is to seriously ill patients, topping the list of symptoms above other symptoms like pain[2]. Puntillo et al's seminal work [2, 3] prompted widespread use of thirst bundles. However, it became challenging to practically deliver some aspects of those bundles (such as trying to source sterile ice chips easily on critical care).

Flim et al's scoping review [1] noted that *how* thirst was measured was highly variable within studies, compounding complexity of reviewing current evidence. Most studies have looked at symptom intensity over distress in relation to thirst[1]. Thirst and xerostomia are often used interchangeably, and with both symptoms often co-occurring. Thirst, being the need to drink, with xerostomia a distinct sensation of a dry mouth, often related to hyposalivation. Interventions may target either, or both; an important difference when reviewing the evidence. This distinction is important; being unable to freely drink, due to intubation or other reasons, is a significant factor in symptom management.

The review reports on eight interventional and 12 observational studies, using measures varying from self-reported (even with intubated, conscious patients who could not agree with rating) numerical or word scales for thirst intensity, to distress and xerostomia severity, alongside observational scales (looking at mucosal dryness)[1]. The conceptual distinction between distress and intensity in symptom management has been highlighted in broader literature[4], with symptom meaning holding particular importance. Predisposing emotional or psychological distress a person is experiencing might affect the value someone places on symptoms [5], like thirst distress.

Saltnes-Lillegard et al [6] reported on symptoms and how thirst and tiredness were prevalent across all symptom classes, which could conceivably also increase the prevalence of anxiety when these symptoms occurred. The intersection between symptoms and psychological issues, including anxiety, is understood to be a mediating factor in how symptoms are reported [5]; similar findings are noted in cancer research[7]. So, we may need to consider not only addressing the physical sensation of thirst or xerostomia, but also how to ameliorate a person's underlying distress, and consider if that could be having a compounding effect on their symptoms.

Outside of critical care, a recent meta-analysis has emphasised the dearth of quality evidence to support non-pharmacological interventions [8]. Interventions such as acupressure had little effect, but water mouthwashes influenced distress associated with thirst, suggesting small scale interventions can make a meaningful difference to patients. Nurses may need to focus on meeting patient needs, than ameliorating thirst. Flim and colleagues [1] highlighted how in one study thirst was viewed by patients as an existential need [9] that cannot be fulfilled (due to intubation), perhaps

even representing a primal need in survival, and therefore having significant importance for critical care nursing.

Factors associated with thirst

As the authors report, numerous issues compound prevalence of symptoms and their management. These include, predisposing physiological factors such as fluid intake and restriction, mouth-breathing, diuretics and opioids, and certain gastrointestinal diseases, which are linked to increased thirst, alongside physical restrictions of being able to drink (critical care-acquired weakness, ability to reach and lift drinks, intubation, consciousness, swallowing, and delirium) [1, 10].

Studies reported by Flim et al identified additional factors associated with thirst, including: high sodium, glucose, lower ionized calcium and medications such as analgesics and serotonin reuptake inhibitors, alongside anticholinergic drugs associated with a dry mouth [1]. As might be expected, ventilation and intubation was associated with higher thirst [1], and being nil by mouth, having sepsis, being male and having a longer critical care stay. Whereas, high flow nasal oxygen led to less thirst. Humidified venturi masks were associated with increased thirst, despite humidification – emphasising symptom complexity [1]. This is corroborated in a recent meta-analysis, where patient characteristics of marital status, simplified acute physiology score were associated with thirst occurrence, alongside respiratory rate, mask comfort, type of ventilation mode, serum sodium, breathing pattern, diuretics, and vasoactive drugs [11].

Barriers and treating thirst and xerostomia

Nurses' inability to adequately assess, identify and treat thirst and xerostomia is clearly a significant part of this important patient issue [1], affecting prevalence and treatment. One study identified that only 13% of nurses assessed for thirst [12] in critically ill patients. Oral care bundles are prioritised, despite variable evidence, but low-cost interventions addressing thirst, like cold water sprays, are not yet part of routine ICU nursing care, despite growing evidence.

Moreover, critical care nurses may lack to requisite knowledge to understand thirst physiology [13], and possible mitigating factors, like swallowing impairments. In that study, nurses mistakenly believed that fluid infusions, or NG feed, along with mouthcare would be enough to relieve thirst.

The range of tools, including thirst distress scales, visual analogue and numeric rating scales, rely on patient's ability to report or indicate on scales. More recently the newly-developed Assessment Form for the Severity of Thirst in Critically Ill Patients uses nurses' assessment for thirst with non-verbal indications such as lip-licking [14]. However, its clinical application is yet to be researched. We don't yet have sufficient ways of objectively identifying risk of thirst or xerostomia, nor accurately measuring it in the absence of patients being able to express thirst. Moreover, promising results from measures like plasma osmolality and arginine vasopressin (AVP)[15], have failed to be clinically applicable in this population, emphasising a need for more research.

Thirst and xerostomia are key nursing responsibilities; we should lead the way in this area of symptom management research. This review is important for highlighting to critical care nurses that thirst is as important as other care needs and is distinct from oral hygiene. However, while nurses should lead assessment, it is not solely a nursing responsibility. As outlined, there are a number of reasons for thirst[1]. As such, it requires a systemic, multi-disciplinary approaches, looking at how we provide ventilation, reviewing prescribed medication, serum electrolytes, and not just the physical act of providing mouthcare, which does not ameliorate thirst. These approaches also need a robust evidence base to underpin care.

Simple, low-risk interventions can make a huge difference to the management of this important symptom, like sterile cold-water sprays, and incorporating thirst assessment into overall oral care assessment will undoubtedly make a significant difference to patients' experience of an important and distressing symptom, which is often overlooked.

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