When terminally ill patients are given continuous deep sedation without hydration, should we call it a form of palliative care, or is it in fact slow euthanasia?

Ethical issues around continuous deep sedation without hydration

**In this article...**

- Why stopping hydration in terminally ill patients under continuous deep sedation is contentious
- Fluid retention as a reason for ceasing hydration
- Evidence on using or withholding artificial hydration

**5 key points**

1. Patients dying of cancer may require continuous deep sedation to alleviate symptoms at the end of life.
2. Such patients, being unable to drink, could be artificially hydrated to lengthen survival and limit thirst.
3. The issue of artificial hydration for such patients arouses highly divergent opinions.
4. Failing to hydrate sedated patients can be likened to “slow euthanasia”, but there are arguments for such practice.
5. Artificially hydrating these patients might improve or worsen symptoms - but a lack of reliable evidence makes it impossible to know.

IV fluids may cause discomfort

Patients nearing death from advanced cancer often experience distressing symptoms such as dyspnoea, pain and anxiety (Rietjens et al, 2008). Many develop a form of agitated cognitive impairment or delirium, which is often part of the dying process (Campbell and Partridge, 2007).

One of the most important goals of palliative care is to alleviate such symptoms. If treatment with analgesics or anxiolytics is ineffective, sedatives can be used to decrease consciousness and remove the patient’s perception of their symptoms. Sedation can be used intermittently or continuously until death, and the depth of sedation can vary from lowered consciousness to unconsciousness. Rendering patients unconscious until death remains controversial, however (Roy and MacDonald, 2001).

While there is wide consensus that invasive forms of nutrition are not essential for patients who can no longer eat and drink at the end of life (Cherny, 2008), no consensus exists regarding the withholding of hydration from patients dying naturally (Warnock and Macdonald, 2008). This debate has been intensified by the suggestion that continuous deep sedation (CDS) without hydration may actually amount to “slow euthanasia”, or euthanasia in disguise.

It is common practice in palliative care not to rehydrate dying patients on the basis that the absence of fluids causes no discernible symptoms, except possibly a dry mouth (Baines and Sykes, 2000).

Even so, relatives are likely to express concern when a patient does not drink during the terminal phase, or if fluids are withheld while deep sedation is required for symptom control (Ashby, 1998). Such practice can be a potent cause of distress to families (Baines and Sykes, 2000), who may regard hydration as a non-burdensome, humane, supportive intervention that reduces suffering (Cherny, 2008). Relatives may even suffer post-traumatic stress from having seen a loved one treated this way (Craig, 2005). If fluids are a
prerequisite for life, without which a person will die, how is it morally correct not to hydrate a dying patient who cannot take even sips of fluid? Relatives may find it difficult to understand how the withdrawal of hydration, unless death is imminent, might be beneficial.

**Shortening lives?**

When a patient's life expectancy is already short, it has been argued that CDS without hydration has little or no effect on life shortening (Rietjens et al, 2008). It is therefore not comparable with euthanasia – the cause of death being the underlying disease, rather than the withholding of food and fluids.

Bridge et al (2008) observed that the effects of catabolism are often overlooked. They said the human body adapts to fasting by metabolising fat, slowing down the metabolic rate and deriving water from the catabolism of body tissues, and to fluid restriction by reducing renal output of water. They suggested that this combination of low urine output and water production from fat oxidation greatly reduces fluid requirements, and observed that terminally ill patients who voluntarily refuse all fluid and food may survive for up to 20 days.

CDS started on average only 2-2.5 days before death in Claessens et al’s (2001) study of patients who, at the start of sedation, were already in the end stage of their illness and needing total care. In Rietjens et al’s (2008) study, 94% of all patients who received CDS did so within a week of death, and, in 47% of all cases, this was within 24 hours of death.

Although comfort has often been taken from the consistent brevity of such reported intervals, which suggest that sedation was not the cause of premature death, the potentially self-fulfilling nature of terminal sedation cannot be ignored.

Glick and Jotkowitz (2008) caution that the fact that most of the patients discussed by Rietjens et al (2008) died within a week of commencing sedation does not mean that CDS was used only in moribund patients, but may indicate that human survival without fluids is short.

Cherny (2008) reported that some authors, including Glick and Jotkowitz (2008), argue that, although sedation in the relief of uncontrolled symptoms may be justifiable, the concurrent discontinuation of hydration, even in the imminently dying, does not assist patient comfort and almost certainly hastens death by dehydration. Many dying patients, therefore, automatically receive intravenous (IV) fluids when they can no longer drink, sometimes in a subtherapeutic dose (Kolb, 2009), and even without evidence of clinical improvement (Roberts, 1997). The main reason for this is the belief that dehydration in a person close to death is distressing, and doctors fear being perceived as abandoning these patients (Kolb, 2009).

Ashby (1998) concluded that terminally ill patients in acute care usually receive artificial hydration, while those admitted to hospices or remaining at home do not.

**Fluid retention**

For sedated patients with only days to live, the benefits of parenteral hydration are often uncertain. Their bodies are often incapable of taking up the fluids administered (Campbell and Partridge, 2007), so parenteral hydration is unlikely to influence their survival, and can even be associated with morbidity (Cherny, 2008).

As death approaches, the body's systems operate less effectively. Both gastric and pulmonary secretions abate and patients lose the desire to drink (Smyth, 2005). Baines and Sykes (2000) suggested that dying patients become tired and drowsy days or weeks before they stop drinking, not as a result of it; those starting palliative sedation in Claessens et al’s (2011) study already drank only small amounts of fluid and had no meals at all.

Before death, renal shutdown occurs; because additional fluids can no longer be excreted, these fluids shift from the intravascular to the interstitial spaces, leading to peripheral and pulmonary oedema. This was attributed by Morita et al (2002) to decreased plasma colloid osmotic pressure and increased membrane permeability. While IV infusions may appear to be in a patient’s best interest, they may cause unnecessary discomfort and suctioning of the lungs.

Bridge et al (2008) suggested that artificial hydration may not alleviate intravascular volume depletion; Roberts (1997) reported patients remained dehydrated regardless of whether they received IV fluids; and Morita et al (2002) found that both IV volume depletion and fluid retention symptoms were observed in terminally ill cancer patients both receiving and not receiving IV hydration. Most patients receiving IV fluids in Morita et al’s (2002) study experienced symptomatic fluid retention in the respiratory system when close to death, although a minority did not. The question of whether the possibility of worsening fluid retention symptoms outweighs any potential benefits from parenteral hydration to patients' overall wellbeing remains unanswered.

Viola et al (1997) found a study in which respiratory secretions – manifested as noisy, rattling breathing in about 50% of patients near the end of life (Twycross and Wilcock, 2007) – were not significantly related to fluid status in the dying. They found little relationship between the volume of IV fluids patients received and the prevalence of oedema or ascites.

Janssens et al (2005) argued that the crucial question to be addressed is whether hydration of a terminally sedated patient is beneficial. Ellershaw and Garrard (2000) identified respiratory secretions, along with pain and agitation, as being among the most common symptoms in the dying
phase, and some clinicians (including Ashby, 1998), argue that dehydration may be beneficial since a reduction in tumour oedema may diminish pain.

Giving additional fluids bypasses the natural mechanisms that control homeostasis (Allmark and Tod, 2009) and may produce or aggravate troublesome symptoms, including bronchial and salivary secretions, resulting in increased dyspnoea, coughing, sensations of choking and drowning and need for suctioning (Ellershaw and Garrard, 2000). It may also lead to increased gastrointestinal secretions resulting in increased risk of nausea and vomiting in obstructed patients, and increased pulmonary and peripheral oedema – which Warnock and Macdonald (2008) observed commonly coexists with central dehydration in the dying – ascites and pleural effusions (Campbell and Partridge, 2007).

The dehydrated dying patient may experience lethargy, lassitude, drowsiness, fatigue and confusion, but this may decrease awareness of suffering (Smyth, 2005). This would indicate that dehydration is beneficial, although it is not known to what extent dehydration may cause such symptoms, and it is unclear whether those symptoms would be corrected by correcting biochemical dehydration (Campbell and Partridge, 2007).

Kolb (2009) and Roberts (1997) reported that ketone accumulation – resulting from caloric deprivation – and dehydration may cause a loss of sensation and stimulate production of natural analgesics in the form of endorphins and dynorphins. However, Roberts (1997) also suggested that dehydration may actually cause gastrointestinal pain and discomfort, and that arguments in favour of dehydration for the dying have a poor evidence base.

Ellershaw and Ward (2005) suggested that continuing artificial fluids in dying patients is of limited benefit and should in most cases be discontinued, but conceded that evidence to support this view is limited. Morita et al (2002) observed that studies have yielded inconsistent findings on the effects of fluid status on patient wellbeing, because different outcome measures and small samples were used (Good et al, 2009).

Although Janssens et al (2005) regarded the positive effect of fluid therapy on increased cognitive functions as being irrelevant to these patients, Morita et al (2002) identified that there is some evidence to support the view that fluid administration might improve agitated delirium. Are patients thirsty?

Warnock and Macdonald (2008) reported that thirst is not complained of by most patients who stop taking food and fluids, and Cherny (2008) found no evidence that rehydration generally makes patients more comfortable.

Janssens et al (2005) said that most conscious patients at this stage of their illness no longer experience thirst. Morita et al (2001) reported that sensations of thirst or dry mouth are observed in up to 64% of cancer patients receiving palliative care – up to 87% in the final week – though neither were solely related to dehydration (Roberts, 1997).

Other authors advised that fluids can be given by subcutaneous infusion if there is doubt about thirst. Examples include:

- If the patient is conscious or semi-conscious, is unable to take adequate fluids and complains of thirst (Allmark and Tod, 2009);
- If relatives are distressed by the patient’s inability to drink and want to see “everything done” (Cambridge and Huntingdon Palliative Care Group, 2008);
- If relatives have religious or cultural reservations regarding the discontinuation of nutritional support (Cherny, 2008).

Bridge et al (2008) reported an emerging consensus (despite a lack of good evidence on which to base such recommendations) that, if artificial fluids are given, the subcutaneous route is preferred and one litre per day is sufficient.

However, whether patients without distressed relatives or lacking those with religious or cultural reservations are any less deserving of fluids is not addressed.

Furthermore, even a trial of fluids may be harmful if, as the Cambridge and Huntingdon Palliative Care Group (2008) suggested, subsequently deployed anti-cholinergic drugs will only help to reduce new secretions forming and are not able to clear those already accumulated. Suctioning – which will not help remove secretions from the lower airway – can be distressing for patients and families.

Therefore, if fluids are given, relatives must be prepared for the trial’s eventual discontinuation if there is evidence that the intervention is causing harm; even if the family insist on rehydration, the practitioner’s first responsibility is the patient (Janssens et al, 2005). Nevertheless, relatives can be taught how to assist with oral hygiene (Ellershaw and Ward, 2005) and are usually happy to be helpful.

Bridge et al (2008) asserted that thirst or discomfort from a dry mouth can be relieved by good oral care, while Roberts (1997) observed that attempts to suppress thirst by moistening the mouth may give only transient or inadequate relief. Morita et al (2001) found that the evidence to suggest that dry mouth can be well palliated by nursing care without artificial hydration is weak. Craig (2005) observed that much has been made of the fact that hunger and thirst may be reduced in some patients who are dying of cancer, but considered it unsafe to assume that dehydrated terminally ill patients do not experience thirst; thirst is unlikely to be absent unless the hypothalamic thirst centre has been destroyed by disease – an assertion that seems to have gone unchallenged elsewhere in the literature.

Craig (2005) insisted that thirst is best addressed by fluid replacement and by keeping any drugs that dry the mouth and suppress secretions to a minimum. Attempts have been made, Craig reported, to study thirst and dehydration in the dying, but interpretation of the data is complicated. Biochemical markers of dehydration, such as an elevated blood urea or serum creatinine, or a raised plasma osmolality, can be manipulated by accepting results that are outside the normal range. Results may also be influenced by the inclusion of patients dying of carcinoma of the lung associated with inappropriate secretion of antidiuretic hormone.

Nevertheless, Bridge et al (2008) and others reported that, although the evidence is limited, it suggests that thirst and dry mouth are not related to hydration in these patients, who may maintain what has traditionally been regarded as a normal biochemical profile despite their poor fluid intake. This suggested to Scott (2010) that physiological mechanisms compensate for reduced hydration; therefore, laboratory tests are unable to predict whether a patient will experience dry mouth or thirst.

Morita et al (2001), however, found that low plasma levels of atrial natriuretic peptide correlated with both dehydration and severe thirst; they concluded that the definition of dehydration used in previous reports was therefore inappropriate for this population.
Conclusion

According to Rietjens et al (2008), CDS represents an indispensable last resort option for patients suffering unbearably as they near death. It is increasingly used in palliative care, and yet many may see the differences between CDS and euthanasia as thin and logically un compelling (Roy and MacDonald, 2001).

Nevertheless, there is almost a consensus in the literature that sedation does not by itself shorten life, although there is no such consensus on the issue of whether to hydrate sedated patients at the end of life.

The issue of artificial hydration in palliative care patients causes highly divergent views, yet there are few good-quality studies to guide clinical practice. There is nothing that relates specifically to sedated, imminently dying patients, and very little original research (Bridge et al, 2008). Information with regard to fluid intake is inconsistent (Claessens et al, 2011). However, there are many articles reflecting their authors’ opinions.

Good et al’s (2009) Cochrane review on the effects of artificial hydration on the quality and length of life of palliative care patients looked at five relevant studies and found great variation in practice. They were only able to find a small number of studies looking at this issue in the international literature, and it was impossible for them to define the benefits and harms of this treatment.

Most studies are retrospective and descriptive, and, given that carrying out controlled, randomised studies is not feasible and would be unethical in this setting – and that the population being studied has such limited survival times – stronger evidence is difficult to obtain, and any absolute effect on prognosis from CDS in either direction, with or without hydration, is impossible to prove.

Morita et al (2002) suggested that poor understanding of the pathophysiology of hydration status in terminally ill cancer patients is one of the main origins of the divergences in attitude toward rehydration. It’s clear that we do not yet understand the complex relationship between dehydration, thirst and distress, and the role of hydration in easing or compounding symptoms in terminally ill individuals. As a result, it is not possible to define the benefits and harms of rehydration (Roberts, 1997). Hence there is great variation in practice, and the management of terminal dehydration remains complex, emotive, personal and subjective.

Palliative care experience suggests that most imminently dying patients die peacefully and comfortably without the provision of artificial hydration, but experience and reviewing the literature arouses the uncomfortable suspicion that some semi-conscious if not necessarily unconscious patients, when not hydrated, might be thirsty but be unable to express this or have it relieved.

Yet, as Morita et al (2001) concluded, it is not easy to determine the benefits of rehydration for dehydrated patients with fluid retention symptoms, even if they are experiencing severe thirst.

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For now, those of us working with families troubled by the use of sedation and the withholding of hydration from dying patients at the end of life should heed Scott’s advice (2010) that it is important to tell relatives that declining oral intake is a natural part of the dying process, and that reluctance to give artificial hydration is not abandonment. NT

References


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