Australian & New Zealand Society of Palliative Medicine & Australasian Chapter of Palliative Medicine

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President, AChPM
1. Do not delay discussion of and referral to palliative care for a patient with serious illness just because they are pursuing disease-directed treatment.
Early access to palliative care has been shown to reduce aggressive therapies at the end of life, prolong life in certain patient populations, and significantly reduce hospital costs.
2. Do not delay conversations around prognosis, wishes, values and end of life planning (including advance care planning) in patients with advanced disease
Evidence shows that advance care planning conversations improve patient and family satisfaction with care and concordance between patients’ and families’ wishes, reduce the likelihood of unnecessary hospital care and increase the likelihood of receiving hospice care.
3. Do not use oxygen therapy to treat non-hypoxic dyspnoea in the absence of anxiety or routinely use oxygen therapy at the end of life
Supplemental oxygen does not benefit patients who are breathless but not hypoxic. Supplemental flow of air is equally as effective as oxygen under these circumstances. The use of a fan for facial air streaming can also be effective.
4. Do not use percutaneous feeding tubes in patients with advanced dementia; instead use oral assisted feeding
Strong evidence exists that artificial nutrition does not prolong life or improve quality of life in patients with advanced dementia.
Contrary to what many people think, **tube feeding** does not ensure the patient’s comfort or reduce suffering; it may cause fluid overload, diarrhoea, abdominal pain, local complications, less human interaction and may increase the risk of aspiration.

Assistance with **oral feeding** is an evidence-based approach to provide nutrition for patients with advanced dementia and feeding problems.
Feeding is more than calories
5. To avoid adverse medication interactions in cases of polypharmacy, do not prescribe medication without conducting a drug regimen review.
Evidence shows that polypharmacy increases the risk of adverse drug reactions and hospital admissions.
4. Do not use percutaneous feeding tubes in patients with advanced dementia; instead use oral assisted feeding.
Evidence

Teno JM. Feeding tubes and the prevention or healing of pressure ulcers. Arch Intern Med 2012; 172(9): 697-701


• What about patients who are not demented?
• What is the role of artificial nutrition and hydration at the end of life?
• Why do we eat and drink?
Back to basic physiology
• Lessons from tree growth
• The physiology of fasting
• Hospice patients who fast to death
• A randomised trial of IV hydration
• The result of too much fluid
• Prolonging death
Tree growth 1990 to 2013
Now weighs 2 tonnes.
Where did the wood come from?
Making wood from air and rain

$$\text{CO}_2 + \text{H}_2\text{O}$$

Cellulose
• Lessons from tree growth
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A 70 kg person has how many kg fat?

Percentage water?

Where is the water?
Composition of the body

- 70kg total body mass
- 60kg lean mass
- 45kg water
- 10kg fat

- 30 L intracellular
- 15 L extracellular
- 12 L interstitial
- 3 L intravascular
Biochemical mechanisms

- Hepatic glycogen is depleted within 24 hours. Over the next few days fat catabolism produces both fatty acids and ketone bodies.
- In prolonged fasting (more than one week), the brain switches from glucose to ketones.
- Basal metabolic rate ↓ by 30%.
Q: How much do you pee?
A: 500-1000ml daily minimum.

Q: Why do you pee?
A: To excrete urea, to get rid of nitrogen

After five weeks of fasting, urea excretion falls to about 5% of normal, so obligatory water excretion falls to around 200 ml per day.
Methionine: an amino acid
Urea: structure

\[ \text{H}_2\text{N-CONH}_2 \]

47% nitrogen
Catabolism of fat

Example: Octadecanoic acid (stearic acid)

18 carbon atoms
36 hydrogen atoms
2 oxygen atoms

No nitrogen!
Stearic acid
Stearic acid catabolism: just add oxygen

\[ \text{C}_17\text{H}_{34} \text{O} + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 2\text{H}_2\text{O} \]
Pierre Renoir
Blonde bather 1881

She is beautiful, but is she healthy?
Pierre Renoir
Blonde bather 1881

Renoir: 1891
baigneuse debout

Spot the difference
74kg -14kg \rightarrow 60kg

+ 

15 litres of water of catabolism
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Suicide or fasting?

Which would give the more peaceful, less distressing death?

• Physician assisted suicide? (swallowing an overdose of sleeping pills)
  or

• Refusing to eat or drink?
Hospice Patients who refuse food and fluids to hasten death


• The State of Oregon in USA has legal physician assisted suicide
• Questionnaire sent to all hospice nurses in Oregon
• One-third of nurses had cared for a patient who had refused food and fluids to hasten death
Hospice Patients who refuse food and fluids to hasten death

<table>
<thead>
<tr>
<th></th>
<th>Stopped food and fluids N=102</th>
<th>Physician-assisted suicide N=55</th>
<th>P value</th>
</tr>
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<tbody>
<tr>
<td>Suffering</td>
<td>less</td>
<td></td>
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</tr>
<tr>
<td>Pain</td>
<td>less</td>
<td></td>
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<tr>
<td>Peacefulness</td>
<td>more</td>
<td></td>
<td>0.14</td>
</tr>
<tr>
<td>Overall</td>
<td>better</td>
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<td>0.95</td>
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</tbody>
</table>
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“Parenteral hydration in patients with advanced cancer: a multicentre, double-blind, placebo controlled randomized trial”

J Clin Oncol 2013
Dr Eduardo Bruera et al
The patients: 102 hospice patients in Texas, with mild to moderate (but not severe) dehydration

Intervention: daily normal saline infused subcutaneously over 4 hours
1000ml (study arm), or
100ml (control arm)

Measurement instruments: baseline, day 4 and day 7 fatigue, drowsiness, hallucination, myoclonus

Results: Significant improvement seen in both arms
No significant difference between arms
Bruera observes: "frequent visits and assessments by research nurses may result in significant improvement in the perception of overall benefit, to the extent that it may even overshadow the biomedical effect of hydration."
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Case History: Mrs B

Widow, 7 children
Demented, no speech for 10 years
In a coma for 2 years
Sustained by nasogastric feeding
Ventilated via endotracheal tube
Age: 107
Food is for pleasure, not postponing death

Jacob Jordaens, 1665: the bean king