Protocolized Withdrawal of Life Support

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Disclosure

- No financial or non-financial conflicts of interest to declare
Objectives

• Appreciate the need for guidelines or protocols for WDLS
• Understand the medical, legal and ethical considerations of WDLS
• Be familiar with the (limited) data that might inform WDLS
A Case…

- 28M – TBI
  - Day #14 in ICU
  - Grave neurological prognosis, decision to WDLS

- “So... what’s the procedure?”
  - Strongly opposed to extubation, so order given to wean to T-piece, provide comfort measures

- Family assembles for WDLS
  - RT – “This is torture and we won’t do it.”
  - RN – “This is unethical.”

- Family upset, demands continuing life support until death 2 weeks later
Background - WDLS

- 36% of ICU deaths in USA
- ~53% of ICU deaths in Canada

Cook et al. NEJM 2003;349:1123-32.
Background - WDLS

- 35.7% of ICU deaths in Europe
  - Variability by country 5-69%
    - Northern Europe - 47%
    - Central Europe - 34%
    - Southern Europe – 18%
Factors associated with WDLS

- **Patient Factors**
  - Age
  - Comorbidity
  - Functional Status
  - Race/ethnicity
  - Nationality

- **Physician Factors**
  - Experience
  - ICU vs. Non-ICU MD
  - Race/ethnicity
  - Nationality

Obligations during WDLS

- **Medical**
  - Keep patient comfortable
  - Support needs of family (and staff)

- **Ethical**
  - Avoid prolonging dying process
  - Do not prioritize competing interests
    - Bed availability, organ donation...

- **Legal**
  - Avoid shortening dying process**
Concerns during WDLS

Implementation of ICU Palliative Care Guidelines and Procedures*

A Quality Improvement Initiative Following an Investigation of Alleged Euthanasia

Ware G. Kuschner, MD, FCCP; David A. Gruenewald, MD; Nancy Clum, RN, MN; Alice Beal, MD, FCCP; and Stephen C. Ezeji-Okoye, MD

- VA investigation into allegations following 4 deaths after WDLS
  - “hastened through the use of high dosages of narcotics and too little oxygen”
  - “Patient flow in and out of the ICU was inappropriately influenced by upcoming major surgeries.”
Concerns during WDLS

• “Surgeon Accused of Speeding a Death to Get Organs.”
  • New York Times, February 27, 2008

• Variability in Satisfaction with WDLS among RNs in Canadian hospitals

• Discomfort with WDLS among RNs/RTs
  • Suggested clearer plans

Concerns during WDLS

- How often do MDs give clear WDLS orders?
  - Almost always – 25%
  - <50% of the time – 61%
- 73% favoured a standardized order set

In Flanders fields the poppies blow
Between the crosses, row on row,
That mark our place; and in the sky
The larks, still bravely singing, fly
Scarce heard amid the guns below.

We are the Dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved and were loved, and now we lie
In Flanders fields.

Take up our quarrel with the foe:
To you from failing hands we throw
The torch; be yours to hold it high.
If ye break faith with us who die
We shall not sleep, though poppies grow
In Flanders fields.

– Dr. John McCrae
Developing Guidelines/Protocol

• Before-After Evaluation of WDLS protocol
  • Interdisciplinary task force
  • Based on principles from textbook

• Results
  • High RN satisfaction (84%)
  • High MD satisfaction (95%)
  • No change in Nurse QODD scores
  • Increase in doses of opioids and benzos
  • No difference in time to death (37 vs. 39 min)

## Developing Guidelines/Protocol

<table>
<thead>
<tr>
<th></th>
<th>Physicians (n = 61)</th>
<th>Nurses (n = 73)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, were the orders helpful?</td>
<td>98 (95–100)</td>
<td>84 (76–92)</td>
</tr>
<tr>
<td>Which sections were helpful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparations</td>
<td>71 (60–82)</td>
<td>36 (25–47)</td>
</tr>
<tr>
<td>Sedation and analgesia</td>
<td>93 (87–99)</td>
<td>70 (59–81)</td>
</tr>
<tr>
<td>Termination of mechanical ventilation</td>
<td>79 (69–89)</td>
<td>44 (33–55)</td>
</tr>
<tr>
<td>Principles of withdrawing life support</td>
<td>46 (33–59)</td>
<td>6 (1–11)</td>
</tr>
</tbody>
</table>

### Opioid orders

<table>
<thead>
<tr>
<th></th>
<th>Pre-protocol</th>
<th>Post-Protocol</th>
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</thead>
<tbody>
<tr>
<td>Pre-Extubation</td>
<td>3.3</td>
<td>7.6</td>
</tr>
<tr>
<td>Post-Extubation</td>
<td>5.2</td>
<td>12.3</td>
</tr>
</tbody>
</table>
Developing Guidelines/Protocol

• Literature Review
  • MEDLINE, EMBASE, EMB Reviews
  • Keywords passive euthanasia, withdrawal, termination, life support, life sustaining, ventilation, artificial respiration, resuscitation
    – 1983 articles
  • Screen of titles/abstracts
    – 54 related to “practical aspects of WDLS”
• References
  – 40 articles added
Literature Review

- 1 Randomized Controlled Trial
- 3 Non-randomized interventions
- 25 Observational studies
- 12 Qualitative Studies
- 23 Topic Reviews
- 10 Guidelines
- 20 Opinionated Editorials
Preparation

- Private room/area, liberalize visitation
- MD at bedside
- Educate family
  - Signs of distress, avoid jargon ("agonal")
  - Purpose of medication
  - Possibility of survival
- Discontinue non-comfort medications, lines, tubes
- Music and normal death rituals

Delaney et al. Unpublished
Monitoring

- Subjective vs. Objective
  - Behavioral Pain Scale, Critical Care Pain Observation Scale, Bizek Agitation Scale
  - Signs of pain
  - Bispectral EEG
  - Tachypnea (30/min? 50% above baseline?)
  - Tachycardia
  - Family input??
Pharmaceutical Management

• Opioids
  • Wide ranges of doses (0-25mg/h MED)
    – Typical median ~5-10 mg/h pre-extubation
    – Max 340mg/h!
  • Often double post-extubation
  • Little/no opioids in neurological injury

• Benzodiazepines
  • Wide range of doses
    – Typical median ~0.5-1 mg/h lorazepam
Pharmaceutical Management

- **Pre-extubation**
  - Scopolamine, dexamethasone

- **Controversies**
  - NO paralytics
  - Upper limits of opioids
  - Anticipate symptoms vs. Respond to symptoms
  - Fentanyl and “chest rigidity”
  - Antibiotics

Delaney et al. *Unpublished*
Pharmaceutical Management

- **Suggested opioid orders**
  - Morphine bolus 2-10mg
  - Morphine infusion at current rate or 50% of bolus dose or 10mg/h

- **Suggested benzodiazepine orders**
  - Midazolam 0.02-0.2 mg/kg bolus PRN
  - Midazolam at current rate or 1-5mg/h
  - Lorazepam 1-3mg bolus PRN and infusion at 50% of bolus dose
Nonpharmaceutical Management

• Terminal extubation vs. Terminal weaning
  • Very controversial
  • 1 study showed longer survival in extubated pts
  • No difference in comfort levels/meds given
  • 1 study showing greater family satisfaction in extubated pts

Delaney et al. Unpublished
Nonpharmaceutical Management

- Greater satisfaction with “stuttering withdrawal”
- Many therapies continue until death even in WDLS
- Pacemakers?
- IV hydration, tube feeds?

Order of withdrawal
- Blood products
- Hemodialysis
- Vasopressors
- Mechanical ventilation
- Total parenteral nutrition
- Antibiotics
- IV fluids
- Tube feedings

Delaney et al. Unpublished
Nonpharmaceutical Management

• **Suggested weaning orders**
  - Decrease FiO2 to 0.21
  - Decrease PEEP to 0-5 cmH2O
  - Pressure Support 5 cmH2O or PC with rate 4/min
    - Incremental
Allied Health and Staff

- Spiritual Care, Social Work
- Role of nurses in support/education
  - LTACHs
- Need for routine debriefing and discussion of morale, moral distress and satisfaction?
Bereavement

- Education about normal/abnormal grief
- Routine post-death meeting with team?
- Letter of condolence
- Routine follow-up call?
Ethics

- WHLS = WDLS
- Doctrine of Double Effect
  - Multiple studies showing no link between opioid doses and duration of survival
  - One study showing longer survival with higher benzo dose
- “Soft Landings”
  - Infusions, no extubation, anticipate symptoms
Ethics

- Clear documentation of medication given and rationale
- Pediatric survey showing support for “hastening death” not associated with higher medication use
- European cases of “shortening dying process”
  - 90% used medications/doses consistent with comfort care

Delaney et al. Unpublished
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Acknowledgments

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