Prognosis and Palliative Care in COVID-19

IHA Grand Rounds
2 Apr 2020
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Vicki Kennedy, CNS, Interior Health Palliative & End of Life Care
Overview

1. Prognosis in Covid-19
2. Discussing Goals of Care
3. Health Care Rationing
4. Non-ICU Supportive Management Orders
Prognosis in COVID-19
Prognosis in COVID-19 - Caveats

• Still early – detailed natural history and prognostic data at each phase of illness are lacking
• Most reports so far represent raw case-fatality rates
Prognosis in COVID-19

• Varies widely by country
• 6,320 cases including 66 deaths have been reported in Canada (PHAC, as of 1100hrs 30Mar2020)
• 935,957 cases including 47,245 deaths have been reported worldwide (www.worldometers.info/coronavirus)

1.0% Case-fatality rate Canada
5.0% Case-fatality rate Worldwide
## Prognosis in COVID-19 – By Age

<table>
<thead>
<tr>
<th>AGE</th>
<th>ITALY case-fatality rate (%)</th>
<th>CHINA case-fatality rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80+ years old</td>
<td>20.2</td>
<td>14.8</td>
</tr>
<tr>
<td>70-79 years old</td>
<td>12.8</td>
<td>8.0</td>
</tr>
<tr>
<td>60-69 years old</td>
<td>3.5</td>
<td>3.6</td>
</tr>
<tr>
<td>50-59 years old</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td>40-49 years old</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>30-39 years old</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>20-29 years old</td>
<td>0</td>
<td>0.2</td>
</tr>
<tr>
<td>10-19 years old</td>
<td>0</td>
<td>0.2</td>
</tr>
<tr>
<td>0-9 years old</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>7.2</strong></td>
<td><strong>2.3</strong></td>
</tr>
</tbody>
</table>

Case-fatality rates by Age-group in Italy and China

*(Onder et al., JAMA, 23Mar2020)*

- Includes all confirmed cases
- Includes inpatients and outpatients
Prognosis in COVID-19 – By Age

- Data from 150 inpatients in Wuhan, China

Age distribution of patients with confirmed COVID-19 (Ruan et al. Intensive Care Med, 2020)
Prognosis in COVID-19 – ICU Survival

Interval from onset of symptoms to death (Ruan et al. Intensive Care Med, 2020)

- Data from 68/150 inpatients who died in Wuhan, China

2 peaks: 14 days and 22 days
Median 16 days from symptoms to death
Prognosis in COVID-19 – Cause of Death

CAUSE OF DEATH

- Respiratory Failure: 53%
- Respiratory Failure and Myocardial Injury: 32%
- Myocardial Injury: 8%
- Unknown: 7%

Data from 68/150 inpatients who died in Wuhan, China

Cause of death (Ruan et al. Intensive Care Med, 2020)
Prognosis in the ICU

• Data from 52 critically ill patients in Wuhan, China

Baseline Characteristics of Survivors and Non-Survivors (Yang et al., Lancet Respir Med, 2020)
### Prognosis in the ICU – By Age

<table>
<thead>
<tr>
<th>Age, years</th>
<th>Survivors (n=20)</th>
<th>Non-survivors (n=32)</th>
<th>All patients (n=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30–39</td>
<td>6 (30%)</td>
<td>0</td>
<td>6 (11.5%)</td>
</tr>
<tr>
<td>40–49</td>
<td>3 (15%)</td>
<td>3 (9%)</td>
<td>6 (11.5%)</td>
</tr>
<tr>
<td>50–59</td>
<td>4 (20%)</td>
<td>9 (28%)</td>
<td>13 (25%)</td>
</tr>
<tr>
<td>60–69</td>
<td>6 (30%)</td>
<td>11 (34%)</td>
<td>17 (33%)</td>
</tr>
<tr>
<td>70–79</td>
<td>1 (5%)</td>
<td>7 (22%)</td>
<td>8 (15%)</td>
</tr>
<tr>
<td>≥80</td>
<td>0</td>
<td>2 (6%)</td>
<td>2 (4%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diabetes</th>
<th>Survivors (n=20)</th>
<th>Non-survivors (n=32)</th>
<th>All patients (n=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 (10%)</td>
<td>7 (22%)</td>
<td>9 (17%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Malignancy</th>
<th>Survivors (n=20)</th>
<th>Non-survivors (n=32)</th>
<th>All patients (n=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (5%)</td>
<td>1 (3%)</td>
<td>2 (4%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dementia</th>
<th>Survivors (n=20)</th>
<th>Non-survivors (n=32)</th>
<th>All patients (n=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1 (3%)</td>
<td>1 (2%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Malnutrition</th>
<th>Survivors (n=20)</th>
<th>Non-survivors (n=32)</th>
<th>All patients (n=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1 (3%)</td>
<td>1 (2%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Smoking</th>
<th>Survivors (n=20)</th>
<th>Non-survivors (n=32)</th>
<th>All patients (n=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 (10%)</td>
<td>0</td>
<td>2 (4%)</td>
<td></td>
</tr>
</tbody>
</table>

Data are n (%) or mean (SD), unless otherwise specified. SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. * Patients who have confirmed SARS-CoV-2 infection or are highly suspected of being infected.

Table 1: Demographics and baseline characteristics of patients with severe SARS-CoV-2 pneumonia

- 75% Mortality in ICU patients 60+ yo
- 90% Mortality in ICU patients 70+ yo
Prognosis in the ICU - Comorbidities

- 100% mortality (0/7) in ICU patients with cerebrovascular disease
- 78% Mortality (2/9) in ICU patients with diabetes

<table>
<thead>
<tr>
<th>Chronic medical illness</th>
<th>Survivors (n=20)</th>
<th>Non-survivors (n=32)</th>
<th>All patients (n=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic cardiac disease</td>
<td>5 (25%)</td>
<td>3 (9%)</td>
<td>10 (20%)</td>
</tr>
<tr>
<td>Chronic pulmonary disease</td>
<td>2 (10%)</td>
<td>2 (6%)</td>
<td>7 (13.5%)</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>0</td>
<td>7 (22%)</td>
<td>7 (13.5%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>2 (10%)</td>
<td>7 (22%)</td>
<td>9 (17%)</td>
</tr>
<tr>
<td>Malignancy</td>
<td>1 (5%)</td>
<td>1 (3%)</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>Dementia</td>
<td>0</td>
<td>1 (3%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Malnutrition</td>
<td>0</td>
<td>1 (3%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Smoking</td>
<td>2 (10%)</td>
<td>0</td>
<td>2 (4%)</td>
</tr>
</tbody>
</table>

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Table 1: Demographics and baseline characteristics of patients with severe SARS-CoV-2 pneumonia
Prognosis in the ICU – Outcomes

Outcome of ICU Admission *(Arentz et al. JAMA, 2020)*

- Data from 21 critically ill patients in Seattle

- **Death**: 52%
- **Transfer out of ICU**: 10%
- **Remain Critically Ill**: 38%
Prognosis in COVID-19 - Summary

• Case fatality rates are a moving target, likely somewhere between 1-5%
• Prognosis for hospitalised patients worse with age
• Prognosis for elderly and those with comorbidities is very poor, even with aggressive interventions
Discussing Goals of Care
# MOST Indicators – Our Current State

<table>
<thead>
<tr>
<th>Age Group</th>
<th>C2</th>
<th>C1</th>
<th>C0</th>
<th>M3</th>
<th>M2</th>
<th>M1</th>
<th>No MOST</th>
<th>Population</th>
<th>% MOST/P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Ages</strong></td>
<td>46,350</td>
<td>2,322</td>
<td>7,714</td>
<td>11,011</td>
<td>3,773</td>
<td>1,613</td>
<td>695,698</td>
<td>768,481</td>
<td>9.5</td>
</tr>
<tr>
<td><strong>65+</strong></td>
<td>25,069</td>
<td>2,106</td>
<td>7,183</td>
<td>10,517</td>
<td>3,633</td>
<td>1,526</td>
<td><strong>139,251</strong></td>
<td>189,285</td>
<td>26.4</td>
</tr>
<tr>
<td><strong>85+</strong></td>
<td>2,423</td>
<td>514</td>
<td>2,482</td>
<td>5,446</td>
<td>2,197</td>
<td>862</td>
<td><strong>10,229</strong></td>
<td>24,153</td>
<td>57.7</td>
</tr>
</tbody>
</table>

Discussing Goals of Care in Serious Illness

• Current Time
• Necessary
• Earlier the better
• Palliative Care is a ‘Team Sport’
• Purpose is not to establish a new MOST status, but if the discussion naturally flows in this direction, explore this in your recommendations.
Principles of Goals of Care discussions

- Person-centered and purpose-oriented
- You will not harm your patient by talking about their illness and the importance of planning
- Anxiety is normal for both patients and clinicians - acknowledge and validate the emotion(s)
- People want and need the truth about their prognosis to make informed decisions
Identifying those at high risk

- Surprise Question
- Clinical Frailty Scale
- SPICT
- Others....

**Clinical Frailty Scale**

1. **Very Fit** – People who are robust, active, energetic and motivated. They are among the fittest for their age.

2. **Well** – People who have no active disease symptoms but are less fit than category 1. Often, they are very active occasionally, e.g., seasonally.

3. **Managing Well** – People whose medical problems are well controlled, but are not regularly active beyond routine walking.

4. **Vulnerable** – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed up", and/or being tired during the day.

5. **Mildly Frail** – These people often have more evident slowing, and need help in high order ADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6. **Moderately Frail** – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.

7. **Severely Frail** – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8. **Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9. **Terminally Ill** – Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common symptoms in mild dementia include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/stories and social withdrawal.

In moderate dementia, recent memory is very impaired, even though they seemingly can remember past life events well. They can do personal care with prompting.

In severe dementia, they cannot do personal care without help.
Elements of a Serious Illness Conversation

- Set up the conversation – asking permission
- Assess understanding & information preferences
- Share prognosis – “Wish/Worry”, “Hope/Worry”
- Explore key topics – goals, fears, sources of strength, family
- Close the conversation – Recommendation “I’ve heard you say...”
- Communicate and Document with key health care team members
Adapting to different clinical situations

• If the patient is an ICU candidate
  – Function
  – Trade-offs

• Patient/Family insists on ICU despite it not being an option
  – Consult
  – Re-iterate focus
  – Wish/Worry, Hope/Worry framework
  – Offer ongoing support
Ethical Framework

**Ethical decision-making algorithm**
(Latimer E. CMAJ. 1998;158(13):1741-7)

- **Consider the patient’s experience of the illness**
  - Symptoms
  - Suffering

- **Consider the illness**
  - Nature and status
  - Likely course
  - Medical options
  - Nearness of death

- **Consider the patient as a person**
  - Wishes & Values
  - Plans & Goals
  - Hopes & expectations

**Perspectives & input of Patient, family, others**
**Formulate Goals of Care**
- General
- Specific

**Perspectives & input of Health care team**
**Consider possible treatments**
- Burdens and benefits?
- Consistent with patient’s wishes?
- Consistent with goals?
Goals of Care - Billing

• Multiple codes now allowed by Telehealth
• 14063 (Palliative Care Planning Fee)
  • For patients in community or assisted living
  • Must qualify for palliative care benefits program
  • Not for patients in residential/long term care
  • 30min minimum
  • $100
Goals of Care - Billing

• Multiple codes now allowed by Telehealth
• 14033 (Complex Care Management Fee)
  • Payable once per year for patients with 2 or more comorbidities in community or assisted living
  • Must develop complex care plan incorporating patients values and goals
  • $315
Goals of Care - Billing

• Multiple codes now allowed by Telehealth
• 14077 (Facility Patient Conference Fee)
  • To discuss goals of care with specialists or the interprofessional care team
  • $40/15min increment
Goals of Care - Billing

• Multiple codes now allowed by Telehealth
• 00114 (Long Term Care Facility Visit)
  – Typically payable once every 2 weeks
  – $35.86
• 00127 (Terminal Care Facility Visit)
  – Payable in last 6mo of life
  – May use for virtual visit with patient, or with RN/LPN if patient unable to use phone
  – $53.20
Health Care Rationing
Health Care Rationing

• Rationing and allocation of resources are very different from discussing and providing goal-concordant palliative care

• Dangerous to conflate these two processes
Health Care Rationing - Principles

• Many existing frameworks
  – Maryland (Daugherty Biddison et al. Chest 2019)
  – New York Ventilator Allocation Guidelines (Zucker et al., 2015)

• “Soft utilitarianism”

• Emphasize prioritization of short term survival (eg SOFA score) over long term prognosis
Health Care Rationing - Application

• Rationing decisions are not made by the treating clinician due to the stress and moral injury it imparts

• Separate “Triage Committees” decide on allocations by applying a framework or score
Symptom Management outside the ICU
Hospital Transfer

Clinical Decision Pathway COVID-19 in LTC Residents

This algorithm assumes Public Health Authorities are involved and are coordinating outbreak in facility, and is meant to aid clinicians to manage care of residents with COVID-19 LTC.

Avoid aerosol generating procedure, including:
- Nebulized medications
- CPAP
- BIPAP

Resident tests positive for COVID-19
- Notify:
  - Most Responsible Provider (MRP)
  - Family/SDM
  - LTC Medical Director
Symptom Management - Principles

1. Ensure all patients receive care
2. Avoid harm
3. Reduce suffering by providing appropriate symptom control (esp of dyspnea)
4. Protect health care staff
5. Support families
6. Conserve resources (eg PPE, medications)
Dyspnea

• Oxygen up to 6Lpm without generating aerosols (*Hendin et al., CJEM, 2020*)
• Avoid use of fans
• Avoid nebulizers, CPAP, BiPAP
• No evidence for bronchodilators/ICS unless patient has underlying asthma/COPD
Dyspnea

Opioids – Opioid Naive

- **Morphine** 2.5-5mg PO Q1H PRN
- **Morphine** 1-2mg IV/SC Q30min PRN

Or

- **HydroMORPHONE** 0.5-1mg PO Q1H PRN
- **HydroMORPHONE** 0.25-0.5mg IV/SC Q30min PRN

- Review often, start Q4H scheduled if using frequent PRNs
Dyspnea

Opioids – Opioid Tolerant

• Calculate total daily dose

<table>
<thead>
<tr>
<th>DRUG</th>
<th>SC/IV (mg)</th>
<th>PO (mg)</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>morphine</td>
<td>10</td>
<td>30^a</td>
<td>metabolized to morphine</td>
</tr>
<tr>
<td>codeine</td>
<td>120 (SC only)</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>fentanyl patch</td>
<td>see table below – useful when PO / PR routes not an option</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fentanyl</td>
<td>0.1 (100 mcg)</td>
<td>NA</td>
<td>usually dosed prn less than 1 hour effect</td>
</tr>
<tr>
<td>hydromorphone</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>oxycodone</td>
<td>not available in Canada</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>sufentanil</td>
<td>0.01 – 0.04 (10 – 40 mcg)</td>
<td>NA</td>
<td>usually dosed prn less than 1 hour effect</td>
</tr>
</tbody>
</table>

• Give breakthrough dose as 10% of the total daily dose, IV/SC Q30min PRN
Dyspnea

• Consider transition to **opioid continuous IV/SC infusion** if still taking frequent PRNs on top of regular dosing

• Minimizes risk to nursing staff from frequent dosing

• Talk to local nursing leads – easier than you think

• Consult palliative care for help
  – Provincial hotline 1-877-711-5757
Dyspnea

• Consider palliative sedation if refractory dyspnea with patient distress

• **Midazolam** 1-4mg/hr CSCI

• **Methotrimeprazine** 5-25mg Q8H and Q3H PRN

• Protocol and order set pending approval
Respiratory Congestion

• For copious airway secretions
• **Glycopyrrolate** 0.4mg IV/SC Q4H PRN
• **Atropine** 0.6mg SC Q6H PRN
• **Atropine** 1% (ophthalmic drops) 1-2 drops SL Q4H PRN
Other Symptoms

Pain

- **Morphine** 2.5-5mg IV/SC Q1H PRN
- **HydroMORPHONE** 0.5-1mg IV/SC Q1H PRN

Fever

- **Acetaminophen** 650mg PO/PR Q4H PRN

Agitation

- **Haloperidol** 0.5-1mg IV/SC Q3H PRN
- **Methotrimeprazine** 12.5-25mg SC Q4H PRN
- **Midazolam** 0.5-1mg IV/SC Q30min PRN
“All patients must be cared for”

https://palliativecare.med.ubc.ca/coronavirus/
Conclusion

• Establish goals of care early – ideally before any infection or decline, at their current place of care

• Many patients will not benefit from critical care measures

• Care for every patient, every time
Questions?

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