FIGURE 4B. END-OF-LIFE SYMPTOM MANAGEMENT OF IRREVERSIBLE RESPIRATORY FAILURE IN COVID-19 PATIENTS

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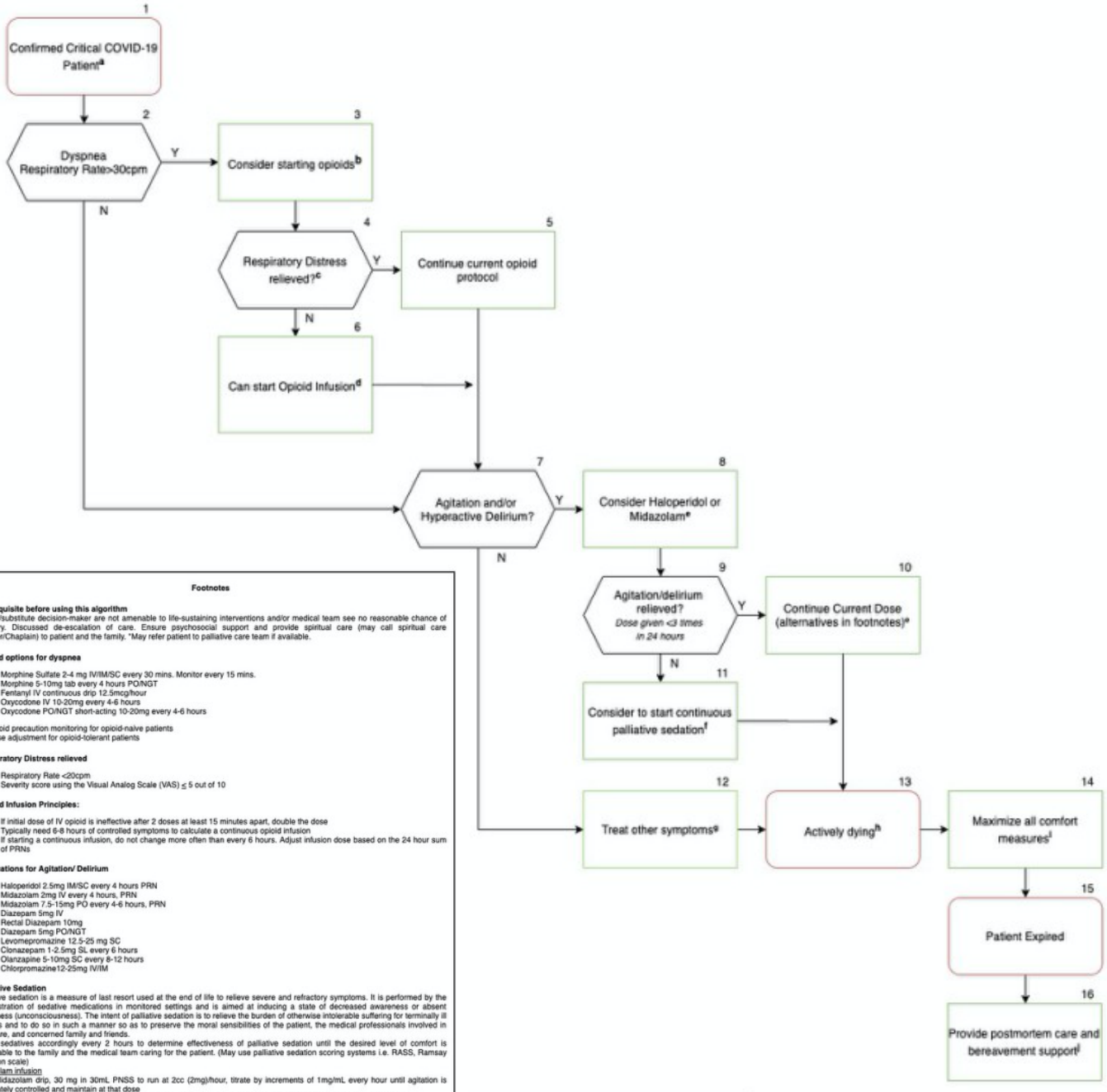

Footnotes

[a]Prerequisite before using this algorithm
Patient/substitute decision-maker are not amenable to life-sustaining interventions and/or medical team see no reasonable chance of recovery. Discussed de-escalation of care. Ensure psychosocial support and provide spiritual care (may call spiritual care provider/Chaplain) to patient and the family. *May refer patient to palliative care team if available.

[b]Opioid options for dyspnea

1. Morphine Sulfate 2-4 mg IV/IM/SC every 30 mins. Monitor every 15 mins.
2. Morphine 5-10mg tab every 4 hours PO/NGT
3. Fentanyl IV continuous drip 12.5mcg/hour
4. Oxycodone IV 10-20mg every 4-6 hours
5. Oxycodone PO/NGT short-acting 10-20mg every 4-6 hours

*do opioid precaution monitoring for opioid-naive patients
*do dose adjustment for opioid-tolerant patients

[c]Respiratory Distress relieved

1. Respiratory Rate <20cpm
2. Severity score using the Visual Analog Scale (VAS) ≤ 5 out of 10

[d]Opioid Infusion Principles:

1. If initial dose of IV opioid is ineffective after 2 doses at least 15 minutes apart, double the dose
2. Typically need 6-8 hours of controlled symptoms to calculate a continuous opioid infusion
3. If starting a continuous infusion, do not change more often than every 6 hours. Adjust infusion dose based on the 24 hour sum of PRNs

[e]Medications for Agitation/ Delirium

1. Haloperidol 2.5mg IM/SC every 4 hours PRN
2. Midazolam 2mg IV every 4 hours, PRN
3. Midazolam 7.5-15mg PO every 4-6 hours, PRN
4. Diazepam 5mg IV
5. Rectal Diazepam 10mg
6. Diazepam 5mg PO/NGT
7. Levomepromazine 12.5-25 mg SC
8. Clonazepam 1-2.5mg SL every 6 hours
9. Olanzapine 5-10mg SC every 8-12 hours
10. Chlorpromazine12-25mg IV/IM

[f]Palliative Sedation
Palliative sedation is a measure of last resort used at the end of life to relieve severe and refractory symptoms. It is performed by the administration of sedative medications in monitored settings and is aimed at inducing a state of decreased awareness or absent awareness (unconsciousness). The intent of palliative sedation is to relieve the burden of otherwise intolerable suffering for terminally ill patients and to do so in such a manner so as to preserve the moral sensibilities of the patient, the medical professionals involved in their care, and concerned family and friends.
Titrate sedatives accordingly every 2 hours to determine effectiveness of palliative sedation until the desired level of comfort is acceptable to the family and the medical team caring for the patient. (May use palliative sedation scoring systems i.e. RASS, Ramsay Sedation scale)
Midazolam infusion
Start Midazolam drip, 30 mg in 30mL PNSS to run at 2cc (2mg)/hour, titrate by increments of 1mg/mL every hour until agitation is adequately controlled and maintain at that dose
Alternative to Midazolam for palliative sedation: Rectal Diazepam 10mg every hourly or Clonazepam 1-2mg sublingual q6 hourly.

[g]Other Symptoms

1. Anxiety: Diazepam 2mg IV/IM/SC, Diazepam 5mg PO/NGT every 8 hours; Midazolam 2mg IV q4 or Midazolam 7.5-15mg PO q4-6 hours
2. Cough: Butamirate citrate 50 mg PO/NGT q8-12hours / Levodropropizine 30mg PO/NGT q8hourly / Morphine 2.5mg IV/SC, PRN / Morphine Controlled Release 10-20 mg q12 hours / Oxycodone 5-10 mg q12 hours
3. Increased Oral Secretions: Hyoscine-N-Butylbromide 20mg IV q6-8 hours / Hyoscine-N-Butylbromide 10-20mg PO/NGT q6-8hours

[h]Actively Dying
The hours or days preceding imminent death during which time the patient's physiologic functions wane.

The patient may exhibit signs and symptoms of near-death.

1. Long pauses in breathing; patient's breathing patterns may also be very irregular
2. Blood pressure drops significantly (continuous steady decline of ≥20mmHg)
3. Patient's skin changes color (mottling) and their extremities may feel cold to the touch
4. Patient is in a coma, or semi-coma, or cannot be awoken
5. Urinary and bowel incontinence and/or decrease in urine; urine may also be discolored
6. Hallucinations, delirium, and agitation
7. Build-up of fluid in the lungs, which may cause unusual gurgling sounds

[i]Comfort Measures
Refers to medical treatment of a dying person where the natural dying process is permitted to occur while ensuring maximum comfort. It includes attention to the psychological and spiritual needs of the patient and support for both the dying patient and the patient's family. Comfort Measures is commonly referred to as "comfort care" by the general public.

[j]Bereavement Support - After the patient's death, a member of the health care team should contact the family caregiver(s) to offer condolences and answer questions of the family.