

Treatment and level of treatment of nursing home residents infected with COVID-19

– a guide for general practitioners

Nursing home patients often suffer from multi-morbidities and different levels of cognitive decline. According to the most recent Danish survey, the COVID-19 mortality rate among persons aged 80+ is 35% (1), and it is expected that we will see many serious cases at nursing homes. We also know that patients may need long-term ventilator treatment and will subsequently suffer from both respiratory impairment and enfeeblement. Many patients will benefit from remaining in their usual place of residence.

This guide is for general practitioners responsible for nursing home patients with COVID-19.

Main principles for the treatment of nursing home patients with COVID-19

1. Symptoms of COVID-19 in elderly multiple-disease patients
2. Level of treatment, including decision-making, consultation, assessment, and documentation
3. Tools for identifying palliative needs
4. General principles for the treatment of COVID-19 at nursing homes
5. Treatment options for mild to moderate symptoms of COVID-19
6. Care options for terminal COVID-19 patients
7. Contact information in case of insufficient relief of symptoms

1. Symptoms of COVID-19 in elderly multiple-disease patients

As opposed to elderly patients with 'common diseases', which allow time for preparation, the condition of multiple-disease patients with COVID-19 will change quickly and can result in organ failure. Elderly, vulnerable patients may have vague, diffuse, and atypical symptoms of infection with the novel coronavirus, such as diarrhoea and nausea, headache, or fatigue, which makes it difficult to diagnose the patients. Quick functional decline with a reduction in the ability to perform activities of daily living (ADL), confusion (delirium), falls and incontinence may also be symptoms of COVID-19 (2). If COVID-19 is suspected, it is possible in Denmark to contact the regional outreach team to test the patient at his or her assisted living facility.

2. Level of treatment

The COVID-19 crisis has increased the need for wise decisions on the level of treatment depending on the patient's underlying health condition, the seriousness of the infection and the patient's desires and vulnerability. The guidelines for opting out of treatment are in accordance with the recommendations of the Danish Patient Safety Authority (*Styrelsen for Patientsikkerhed*). Link: [Recommendations of the Danish Patient Safety Authority](#).

In Denmark, we have no specific directions limiting the scope of treatment of COVID-19. Age alone is not a desired criteria, and the question of hospitalisation will always depend on an individual assessment. We need a recognised patient vulnerability assessment tool, but it is possible to look to the British [Clinical Frailty Scale](#) (CFS) prepared by the NHS Specialised Clinical Frailty Network (3). It is the assessment of the National Institute for Health and Care Excellence ([NICE](#)) that it is doubtful whether persons with a CFS score

equal to or greater than five will benefit from intensive care (4). Many patients at assisted living facilities will benefit from remaining in their usual place of residence.

Generally, nursing staff should talk to patients and/or their relatives at an early point about their expectations of treatment in case of a novel coronavirus infection or cardiac arrest.

Patients and/or relatives having a special desire for treatment are suggested to contact the doctor. The actual decision on the level of treatment is made during the period of disease, either when the patient tests positive for COVID-19 or earlier if the patient's condition has already deteriorated.

A COVID-19 patient who can understand the consequences of his or her decision has the right to opt out of treatment and refuse hospitalisation/intensive care. The assessment of whether a patient making such a decision is of sound mind must be made by a doctor.

If a patient and/or his or her relatives have a strong desire for active treatment, the doctor can consult a physician at the hospital or in that situation admit the patient to hospital or direct the patient to a COVID-19 assessment centre.

If the doctor makes the judgement that hospital treatment would be futile, the doctor could have the following dialogue with the patient and/or his or her relatives:

'I do hope that we can help your mother/father/wife/husband through the coronavirus infection, but if xx's condition deteriorates, we will not hospitalise him/her, and we will not resuscitate him/her in case of cardiac arrest. The reason is that the treatment offered in connection with hospitalisation and resuscitation will not have the desired effect when the body is so weakened by the serious illness (cancer, severe cardiac disorder, lung disease, renal disease, neurological disorder).'

Give information about the course of a COVID-19 infection in weak multiple-disease patients and the trajectory of cognitive decline.

'I want to be sure that you know that we will continue the treatment as long as it remains effective and we will relieve pain. We will also find a way for you to be with your dear one during his/her last days.'

When it is the doctor's judgement that hospital treatment would be futile, the doctor must also consider the need for palliative care, see paragraph 2). When the final decision has been made to opt out of treatment, the doctor must always confirm this in writing:

- a) *The patient is of sound mind and does not want to be hospitalised/receive ventilator treatment for the current novel coronavirus infection.*
- b) *Due to the patient's overall health condition (including dementia), the patient is NOT to be hospitalised, but must be treated and given symptom relief at the nursing home, unless there is a clear purpose of admitting the patient to hospital that cannot be achieved at the local nursing home. Do-not-resuscitate order.'*

3) Tools for identifying palliative needs

Consultation with patient and relatives, preferably supported by a questionnaire like [EORTC – QLQ-C15 PAL](#) (link to Danish version. EORTC is also translated to many other languages).

4) General principles for the treatment of COVID-19 at nursing homes

Adjust what can be adjusted, such as fluids at signs of severe dehydration. NOTE: Do not overhydrate but administer ½-1 litre of NaCl solution per day by subcutaneous injection.

Non-pharmacological treatment, such as focus on good respiration using a positive expiratory pressure device, ventilation, physical distancing and as few visitors as possible in compliance with the recommendations of the Danish Health Authority (*Sundhedsstyrelsen*).

Pharmacological treatment: Conduct a thorough medication review and keep only vital drugs and medications for symptom relief as metabolism of medicines is very slow due to serious infection and renal function decreases (5,6). Reduce dosage frequency, that is, switch to slow-releasing pharmaceuticals, if possible. Prescribe drugs to be administered simultaneously to the extent possible (7).

5) Treatment options for mild to moderate symptoms of COVID-19

Supportive treatment:

Oxygen therapy No clear guidelines at nursing homes, but if it is determined that oxygen can help alleviate the patient's symptoms, oxygen can be administered in consultation with a nearby pulmonary ward.

Fluid Can be administered by subcutaneous injection; mild dehydration is recommended at serious COVID-19 infection due to renal failure (8,9).

Antibiotics Bacterial infection is found in some COVID-19 patients. If the condition is reversible and it is deemed relevant, the patient can be given amoxicillin+ clavulanic acid. 500mg 3 times a day for 10 days (if penicillin allergy clarithromycin 500mg twice a day for 10 days (if GFR<30: 250mg twice a day)). Patients with asthma or similar conditions and patients with chronic obstructive pulmonary disease (COPD) are treated according to the usual guidelines (10).

Prophylaxis of thromboembolism

The treatment cannot prevent higher COVID-19 mortality at nursing homes, but it might be possible to avoid thromboembolic complications (deep vein thrombosis (DVT) and pulmonary embolism (PE)).

Patients **not** already on anticoagulant therapy:

- Prophylaxis for venous thromboembolism (VTE) should normally not be prescribed for COVID-19 patients in the primary healthcare sector.
- Patients confined to a bed for more than 3 days should be urged to do vein exercises several times a day.
- Prophylaxis of thromboembolism might be considered at an early stage for patients who have previously suffered from DVT or PE. Low-molecular-weight heparins (LMWHs) are the only drugs recommended. Tinzaparin sodium is the preferred LMWH as its renal elimination is lower than dalteparin sodium and enoxaparin sodium. Give tinzaparin sodium 4,500 anti-Xa IU SC once a day. Tinzaparin sodium is an anti-inflammatory drug and can be administered fairly independently of other drugs (interactions are rare). Tinzaparin sodium is a subsidised prescription drug.

Patients already on anticoagulant therapy:

Atrial flutter (AFL) patients on warfarin sodium:

- Mild and moderate COVID-19: Switch to apixaban due to the risk of unstable INR values.
- Severe COVID-19 with signs of pneumonia or acute respiratory distress syndrome (ARDS): Switch to tinzaparin sodium 175 anti-Xa IU/kg SC once a day.

AFL patients on non-vitamin K oral anticoagulants (NOAC):

- Mild COVID-19: Consider switching to apixaban. Severe COVID-19 with signs of pneumonia or ARDS: Switch to tinzaparin sodium 175 anti-Xa IU/kg SC once a day (11,12).

Corticosteroids: Not recommended for the treatment of COVID-19 patients, but administered if relevant for another disease, such as COPD.

Relief of symptoms: The most frequent symptoms of COVID-19 are: breathing difficulties, anxiety, a cough and delirium (13,14).

Breathing difficulties:

Non-pharmacological treatment:

Calm down the patient and explain that it is possible to relieve the breathing difficulties.

Adjustment of bed, maybe an open window.

Nasal O₂ if it gives symptom alleviation, in consultation with a local pulmonary consultant.

Pharmacological treatment: Morphine is the drug of choice. Morphine also reduces anxiety and oxygen consumption. Dosage:

Patients NOT already on morphine:

- Morphine 2.5/5mg 4-6 times a day. If effective, switch to slow-release morphine twice a day.

- Oral drops of morphine sulphate 20mg/ml: 3-5 oral drops as required.

Patients ALREADY on morphine:

- Morphine 50% of usual 'as required' dose = 1/12 of total 24-hour dose.

- Oral drops of morphine sulphate 20mg/ml: 5-10 oral drops (1 oral drop = 1.25mg of morphine).

Remember laxatives, if required.

Breathing difficulties are often accompanied by anxiety (see treatment below).

Anxiety

Non-pharmacological treatment: Identify and treat any underlying cause.

Supportive consultation on anxiety/existential factors (if possible).

Distraction (massage, music etc.).

Pharmacological treatment: Lorazepam 0.5mg tablets as required (can be chewed to make the tablets work faster).

Cough

Non-pharmacological treatment: Chest physiotherapy.

Adjustment of bed.

Stop smoking.

Positive expiratory pressure device.

Pharmacological treatment: Immediate-release morphine – 2.5mg as required or regularly 4 times a day.

Delirium

Non-pharmacological treatment: Identify the condition (delirium) and treat any underlying cause.

Shield the patient. Notify relatives and staff.

Familiar surroundings/persons – avoid moving the patient.

Maintain usual structure.

Natural daylight and views.

Pharmacological treatment: Haloperidol tablets. Start with 1.25mg 1 or 2 times a day. Increase by 1.25mg 1 or 2 times a day until the drug starts working well (average effective dose: 2.5mg/day – maximum dose: 6mg/day).

In case of adverse reactions/lack of effect:

Olanzapine] 2.5mg at bedtime.

Can be supplemented with benzodiazepines – lorazepam 0.5mg tablets as required (can be chewed to make it work faster).

6) Care options for terminal COVID-19 patients

Respiratory failure is reported to be the most frequent cause of death at nursing homes (15). Parenteral administration of fluid is not recommended due to the risk of fluid overload. That is, fluid must be administered orally. In case of renal failure, diuretics are not indicated (no effect), and fluid restriction is the treatment even for pulmonary oedema. Diuretics are indicated only for pulmonary oedema caused by cardiac insufficiency (8,9). Remember to insert a catheter.

When the patient can no longer swallow, insert a subcutaneous (SC) needle.

Nausea Haloperidol 0.5/1mg SC regularly 2-4 times a day or as required.

Delirium Start with haloperidol 0.5mg twice a day. Increase by 0.5mg twice a day until the drug starts working well (average effective dose: 2.5mg/day – maximum dose: 6mg/day).
Olanzapine 2.5/5mg SC.
Can be supplemented with midazolam 1/2.5/5mg SC.

Breathing difficulties Patients NOT already on morphine:
- Morphine 2.5/5mg in each dose. Preferably 4-6 regular doses each 24-hour period

Patients ALREADY on morphine:
- Morphine 50% of usual 'as required' dose = 1/12 of total 24-hour dose – remember that the SC dose is 50% of the oral dose.

Anxiety Can be supplemented with midazolam 1/2.5/5mg SC.

Severe terminal respiratory secretions

Glycopyrronium bromide 0.2mg SC 3-6 times a day (NOTE: causes dry mouth and increased viscosity of secretions in the airways of wake patients, insert a catheter due to the risk of urinary retention).

7. Contact information in case of insufficient relief of symptoms

The regional palliative care helpline.

The *Palliation* (Palliative Care) guidance and the *Palliation i praksis* (Palliative Care in Practice) app of the Danish College of General Practitioners (*Dansk Selskab for Almen Medicin*) (14,16).

References:

1. <https://www.ssi.dk/sygdomme-beredskab-og-forskning/sygdomsovervaagning/c/covid19-overvaagning>
2. [Eriksen S.](#) Behandling, omsorg og pleie for døende sykehjemspasienter med covid-19. Tidsskr Nor Legeforen. 23042020. DOI: 10.4045/journal 20.0306
3. <https://static1.squarespace.com/static/5b5f1d4e9d5abb9699cb8a75/t/5dad90bb11ecf3bce47f27e/1571670285023/Rockwood+CFS.jpg>
4. <https://www.nice.org.uk/guidance/ng159/resources/critical-care-admission-algorithm-pdf-8708948893>
5. www.coronamedicinipraksis.dk
6. <https://www.sundhed.dk/sundhedsfaglig/information-til-praksis/hovedstaden/almen-praksis/konsulenthaelp-til-praksis/medicinfunktionen/covid19ogmedicin/>
7. Optimizing Medication Management during Covid-19 Pandemic. Implementation Guide for Post-Acute and Long-Term Care. University of Maryland 10 April 2020
<https://www.pharmacy.umaryland.edu/PALTC-COVID19-MedOpt>
8. Respiratorisk svikt hos patient med Covid-19 som vårdas utanför IVA. Stockholm 2020.
<https://www.stockholmssjukhem.se/media/1800/palliativ-varld-vid-covid-19-2020-04-02.pdf>
9. Inge Eidemak, Consultant at the Section of Palliative Medicine at Rigshospitalet: Personal message
10. <https://www.dsth.dk/pdf/COVID-19-retningslinje-web.pdf>
11. Jørn Dalsgaard Nielsen, Consultant at the Department of Cardiology of Bispebjerg Hospital. Personal message
12. Stine Norup Clemmensen, Sara Louise Dahl. Guide til symptomlindring af palliative patienter med COVID-19
13. NHS: Clinical guide for the management of palliative care in hospital during the coronavirus pandemic
Publications approval reference: 001559. 27 March 2020 <https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/C0081-Speciality-guide-Palliative-care-and-coronavirus-FINAL-02.04.20.pdf>
14. Dansk Selskab for Almen Medicin: App: Palliation i praksis – 2017
15. Kittang BR et al. Utbrudd av covid-19 ved tre sykehjem i Bergen. Tidsskr Nor Legeforen. DOI: 10.4045/journal 20.0405
16. Dansk Selskab for Almen Medicin: Palliation – vejledning 2014