For Use in:	A clinical guideline recommended for use in Emergency department and all medical wards
By:	Clinicians
For:	Adults with exacerbation of breathlessness in Emphysema/COPD
Division responsible for document:	Medical Division (Including Emergency)
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Name of document author:	Dr P Sankaran
Job title of document author:	Consultant Respiratory Physician
Name of document author's Line Manager:	Dr A.V. Kamath
Job title of author's Line Manager:	Consultant Respiratory Physician and Respiratory Service Director
Supported by:	Dr D. Musa, Consultant in Acute Medicine
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Compliance links: *(is there any NICE related to guidance)*	NICE Quality Standards Chronic Obstructive Pulmonary Disease in Adults (QS10)
If Yes - does the strategy/policy deviate from the recommendations of NICE? **If so why?**	No deviation

Trust Guideline for the Management of: Exacerbation of Breathlessness in Emphysema/Chronic Obstructive Pulmonary Disease (COPD)

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Version and Document Control:

Version Number	Date of Update	Change Description	Author
4	22/12/2020	Reviewed by authors and Consultants in the department	Dr P Sankaran

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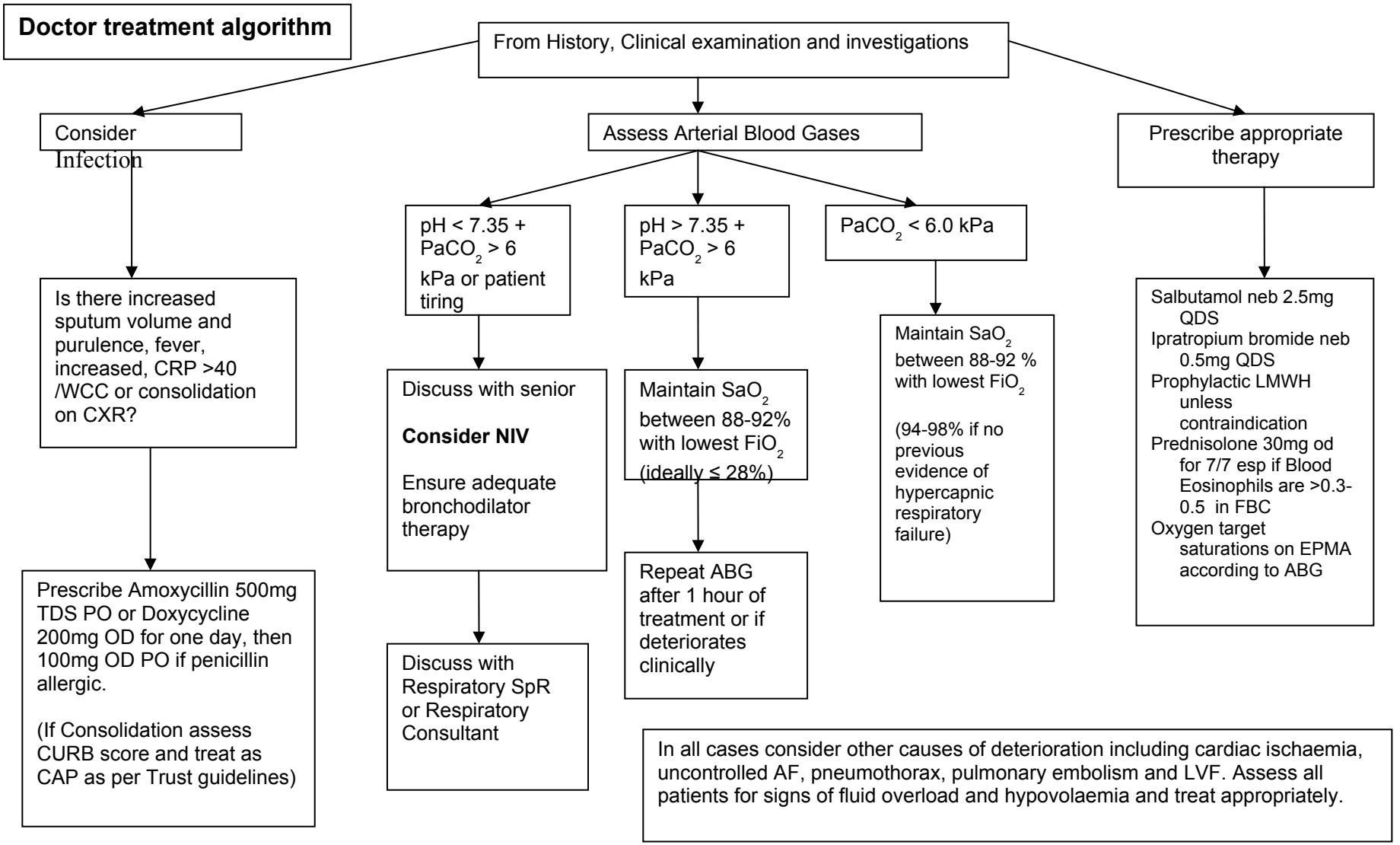

Trust Guideline for the Management of: Exacerbation of Breathlessness in Emphysema/Chronic Obstructive Pulmonary Disease (COPD)

Objective/s

To improve the management of exacerbation of breathlessness in patients with Emphysema/COPD throughout the trust.

Rationale

Appropriate implementation of national guidelines.

Clinical guidelines

Initial Nursing assessment

Patient admitted to AMU with acute worsening of respiratory symptoms should have a full set of observations (temperature, pulse, blood pressure, conscious level with AVPU scale and oxygen saturations).

Ensure target oxygen saturation is prescribed on EPMA. If oxygen saturations are above 88% on air prior to target range prescription supplementary oxygen not required. If oxygen saturations are below 88% on air give supplementary oxygen via controlled delivery device (start at FiO_2 of 24 or 28% Venturi) and adjust to maintain saturations between 88-92%. Target saturation range must be prescribed on medical review according to ABG. Please refer to the Prescription and Administration of Oxygen in Adults

Investigations

All patients require FBC, U+E, LFT, CRP, CXR and 12 lead ECG.
All hypoxemic patients will require ABG. If patients have had VBGs, they should have an ABG if there is Raised C02 in a VBG or Acidosis in a VBG

Sputum specimen should be sent for culture if cough is productive and blood cultures should be sent if febrile.

Medical Assessment

History should focus on

Current symptoms: cough, sputum colour and volume, breathlessness and chest pain.
Usual exercise tolerance and exercise tolerance now.

Smoking history: current, ex-smoker (>3 months) or never smoker.
When started/stopped smoking, quantity per day and what (tobacco, cannabis, other)
Pack years = number per day/20 x number of years smoking.

Previous treatment:

- Home oxygen – hours per day, flow rate, equipment
- Previously ventilated – invasive, non-invasive, domiciliary NIV (please note: specify CPAP or NIV as a home pressure support therapy)

- Evidence of chronic hypercapnic respiratory failure (Oxygen alert card/alert on PAS, e-template letters)

Social history: abilities to perform activities of daily living, assistance required.

History and examination should look for signs of chest x-ray consolidation. Other causes of breathlessness in someone with COPD should be sought, including cardiac ischaemia or failure, pulmonary embolism, pneumothorax and uncontrolled AF. Signs of fluid overload and hypovolaemia should be looked for and treated.

Management

All patients with an exacerbation of breathlessness in Emphysema/COPD should receive:

- Sabutamol nebulisers 2.5mg qds
- Ipratropium bromide nebulisers 0.5mg qds
- Prednisolone 30mg od for 5 days unless contraindication. Look for elevated peripheral blood eosinophilia (>0.3-0.5 in the FBC, look for trend in eosinophils)
- Controlled oxygen therapy to maintain target prescribed saturation range.
- The thromboprophylaxis risk assessment should be completed on the drug chart and prophylactic LMWH prescribed unless contraindication.

Infection as evidenced by increased sputum volume and purulence, or fever or increased CRP >40 and WCC should be treated with Amoxycillin 500mg TDS for 7 days unless penicillin allergic, when Doxycycline 200mg OD for one day then 100mg OD for 6 days should be prescribed. If the CXR shows consolidation, then prescribe drugs as above but treat with antibiotics as described in the community acquired pneumonia guideline

Table 1 Factors to consider when deciding where to treat the person with COPD

Factor	Treat at home	Treat in hospital
Able to cope at home	Yes	No
Breathlessness	Mild	Severe
General condition	Good	Poor/deteriorating
Level of activity	Good	Poor/confined to bed
Cyanosis	No	Yes
Worsening peripheral oedema	No	Yes
Level of consciousness	Normal	Impaired
Already receiving long-term oxygen therapy	No	Yes
Social circumstances	Good	Living alone/not coping
Acute confusion	No	Yes
Rapid rate of onset	No	Yes
Significant comorbidity (particularly cardiac disease and insulin-dependent diabetes)	No	Yes
SaO_2 < 90%	No	Yes
Changes on chest radiograph	No	Present
Arterial pH level	≥ 7.35	< 7.35
Arterial PaO_2	≥ 7 kPa	< 7 kPa

Treatment of respiratory failure

Patients with emphysema may be at risk of hypercapnic respiratory failure and acidaemia during acute illness, particularly if there is evidence of previous hypercapnic respiratory failure.

- Monitor for signs of worsening CO_2 retention (increased drowsiness, reduced cognitive function, headache).
- Repeat ABG (on current FiO_2) after 1 hour of therapy or if deterioration clinically.

If $PaCO_2$ < 6 kPa consider prescribing target saturation range of 88-92% and maintain with the lowest possible FiO_2 via a controlled device (start at 24-28%).

If pH >7.35 and $PaCO_2$ > 6kPa prescribe target saturation range of 88-92% and maintain with the lowest possible FiO_2 via a controlled device (start at 24-28%).

If pH < 7.35 and PaCO2 > 6kPa discuss patient with a Registrar or Consultant on AMU.

1. Ensure adequate bronchodilator therapy.
2. Exclude and treat other causes of deterioration including LVF, cardiac ischaemia, uncontrolled atrial fibrillation, pneumothorax, pulmonary embolism and hypovolaemia.
3. Discuss the patient with the respiratory SpR or consultant with a view to non-invasive ventilation.

Clinical audit standards

- All patients to have oxygen prescribed by appropriate target saturation range.
- All patients to receive oxygen via controlled delivery device.
- All patients to have arterial blood gas on admission.
- All patients to have chest x-ray within 4 hours of admission.
- All patients with type 2 respiratory failure who do not respond to medical management within an hour should be referred to on call Respiratory Physicians.

Reviewed and updated 2020 by Dr P.Sankaran, Dr A Kamath & S Olive. Circulated for comment to Respiratory Physicians and Dr D. Musa.

This version has been endorsed by the Clinical Guidelines Assessment Panel.

Distribution list/ dissemination method

A copy of this guideline is on the trust intranet.

References/ source documents

NICE Guidance (NG115). Chronic Obstructive Pulmonary Disease in over 16s: diagnosis and management 2018 (updated July 2019)
https://www.nice.org.uk/guidance/ng115

NICE Guidance (NG 114) Chronic Obstructive Pulmonary Disease (acute exacerbation): antimicrobial prescribing 2018
https://www.nice.org.uk/guidance/ng114

British Thoracic Society Guideline for Oxygen Use in Adults in Healthcare and Emergency Settings
https://www.brit-thoracic.org.uk/document-library/clinical-information/oxygen/2017-emergency-oxygen-guideline/bts-guideline-for-oxygen-use-in-adults-in-healthcare-and-emergency-settings/

NICE Quality Standards Chronic Obstructive Pulmonary Disease in Adults (QS10) (updated 2016)
https://www.nice.org.uk/guidance/qs10

NICE Quality Standards Pneumonia in Adults (QS110)
https://www.nice.org.uk/guidance/qs110

Management of COPD exacerbations: a European Respiratory Society/American Thoracic Society guideline

European Respiratory Journal 2017 49: 1600791; DOI: 10.1183/13993003.00791-2016