COPD EXACERBATION

Bronchodilators · steroids · NIV early

NIV
early

TARGET SpO_2 88-92%: controlled oxygen (Venturi 24-28%) - high-flow O_2 risks CO_2 retention. Get an early ABG; watch for respiratory acidosis.

CORE TREATMENT

the evidence-based bundle

BRONCHODILATORS

Salbutamol 2.5-5 mg + ipratropium 500 mcg nebulised, repeat / back-to-back. Air-driven neb if CO_2 retainer.

STEROIDS

Prednisolone 30-40 mg PO (or hydrocortisone IV) for 5 days. Shortens recovery and cuts relapse.

ANTIBIOTICS

If increased sputum purulence + volume or dyspnoea, or ventilated. 5 days (amoxiclav / doxycycline / macrolide).

NIV · BiPAP

the game-changer

- **Indication -** respiratory acidosis: pH < 7.35 with $PaCO_2$ > 6 kPa despite therapy
- **Start early -** IPAP ~12-15 / EPAP ~4-5, titrate up; reassess ABG at 1 h
- **Reduces -** intubation, mortality and length of stay in COPD
- **Failing NIV -** worsening pH / GCS after 1-2 h - escalate to intubation

EXCLUDE / ESCALATE

- Rule out: pneumothorax, pneumonia, PE, pulmonary oedema, arrhythmia
- CXR and ECG in everyone; consider CTPA if PE suspected
- Intubate for: failing NIV, exhaustion, ↓ GCS, arrest
- Ventilate with LOW rate, long expiratory time - watch for auto-PEEP

INVESTIGATE & EXCLUDE

ABG (key)

Look for respiratory acidosis (pH ↓, $PaCO_2$ ↑) - it decides NIV. Repeat after 1 h.

CXR + ECG

Exclude pneumonia, pneumothorax, pulmonary oedema and arrhythmia.

CONSIDER PE

Unexplained hypoxia or deterioration - CTPA; COPD raises PE risk.

PREVENT THE NEXT ONE: optimise inhalers + check technique · smoking cessation · flu + pneumococcal vaccines · pulmonary rehabilitation · self-management / rescue pack · assess for long-term oxygen only when stable · early follow-up.

PEARLS & PITFALLS

- Target SpO_2 88-92% - uncontrolled oxygen causes CO_2 narcosis and respiratory arrest in retainers.
- Steroids and bronchodilators for all; antibiotics only for purulent sputum or ventilation.
- Start NIV early for respiratory acidosis; it cuts intubation and death - do not wait for exhaustion.
- Always exclude a mimic (pneumothorax, PE, oedema, pneumonia) before blaming COPD alone.

References: GOLD COPD 2024 · NICE COPD (NG115) · BTS/ICS NIV 2016 · standard critical-care references.

Educational aid; verify doses against local protocol and patient factors.