Chronic Obstructive Pulmonary Disease (COPD): Diagnosis and Long-term Management

Key Facts:

- COPD is a disease of smokers/those frequently in smoky/polluted air.
- It is the third leading cause of death in the world (WHO, 2019)
- It is easily missed: people present with infections but see different health workers each time and the pattern of frequent infections is missed.
- Smoking cessation is the most important treatment for COPD and reduces mortality.

Clinical presentation:

Think 'Could this be COPD?' if over 35 years and smoker/ex-smoker OR exposed to smoky or polluted atmospheres who present with:

- Chronic cough
- Regular sputum production
- Breathlessness and/or wheeze, especially with activity
- Repeated chest infections (needing treatment)

NB: Exclude Asthma and other differential diagnoses (see table attached at the end)

Investigations:

- Spirometry is the gold standard to confirm the diagnosis, but not available in Kijabe.
- If no access to spirometry, make a clinical diagnosis based on features above.
- Chest X-ray essential to exclude TB and other causes.

Management:

***Transfer patient to Casualty if features of COPD exacerbation: unstable vitals, patient can't complete sentences, difficulty in breathing with use of accessory muscles.**

Stable COPD Management:

Non-pharmacologic management

- Smoking cessation and stop exposure to biomass fuels,
- Physical activity: patients should be encouraged to increase their level of physical activity
- Vaccination: Influenza vaccination is recommended for all patients with COPD; pneumococcal vaccination is recommended for patients >65yrs, and in younger patients with comorbid conditions including chronic lung or heart disease
- Long-term Oxygen Therapy for severe resting hypoxemia: room air oxygen saturation ≤ 88%, or ≤ 89% with cor pulmonale or signs of tissue hypoxia
- Early referral for Palliative and end of life care.

Pharmacological management:

	Symptoms	Suggested treatment
Step 1	Mild symptoms: breathless with strenuous exercise	Short-acting bronchodilator (SABA preferred) as needed.
Step 2	More symptomatic: breathless with moderate exercise	Add LABA or LAMA if available. If not, use ICS+LABA Salbutamol reliever as needed
***Step 3**	More symptomatic: breathless with mild exercise	Combination LABA + LAMA. If still symptomatic, try LABA+ICS+LAMA

***Seek OPD consultant advice before escalating to step 3.**

***A spacer device should always be used with an aerosol/MDI inhaler**

***Check inhaler/spacer technique before escalating to the next step (see separate protocol on 'Inhaler technique in asthma and COPD').**

Bronchodilators available in Kijabe Pharmacy:

Class	Drug	Dose
SABA (Short acting beta agonist)	Salbutamol 100mcg	200mcg as needed
SAMA (Short acting muscarinic antagonist)	Ipratropium 20mcg	40mcg as needed
ICS (Inhaled corticosteroids)	Beclomethasone 100mcg	200-400mcg twice daily
ICS+LABA	Budesonide+Formoterol 200+6 or 400+6 Inhaler Budesonide+Formoterol 160/4.5mcg Turbuhaler	1-2 puffs twice daily

References:

2019 Primary Care International COPD Clinical Guide

Chronic Obstructive Pulmonary Disease: Diagnosis and Management (AFP 2017)

2017 Global Initiative for Chronic Obstructive Lung Disease pocket guide

UpToDate 2021: Chronic obstructive pulmonary disease (Definition, clinical manifestations, diagnosis, and staging)

DIFFERENTIAL DIAGNOSIS OF COPD

DIAGNOSIS	SUGGESTIVE FEATURES
COPD	Onset in mid-life. Symptoms slowly progressive. History of tobacco smoking or exposure to other types of smoke.
Asthma	Onset early in life (often childhood). Symptoms vary widely from day to day. Symptoms worse at night/early morning. Allergy, rhinitis, and/or eczema also present. Family history of asthma. Obesity coexistence.
Congestive Heart Failure	Chest X-ray shows dilated heart, pulmonary edema. Pulmonary function tests indicate volume restriction, not airflow limitation.
Bronchiectasis	Large volumes of purulent sputum. Commonly associated with bacterial infection. Chest X-ray/CT shows bronchial dilation, bronchial wall thickening.
Tuberculosis	Onset all ages. Chest X-ray shows lung infiltrate. Microbiological confirmation. High local prevalence of tuberculosis.
Obliterative Bronchiolitis	Onset at younger age, nonsmokers. May have history of rheumatoid arthritis or acute fume exposure. Seen after lung or bone marrow transplantation. CT on expiration shows hypodense areas.
Diffuse Panbronchiolitis	Predominantly seen in patients of Asian descent. Most patients are male and nonsmokers. Almost all have chronic sinusitis. Chest X-ray & HRCT show diffuse small centrilobular nodular opacities & hyperinflation.

These features tend to be characteristic of the respective diseases, but are not mandatory. For example, a person who has never smoked may develop COPD (especially in the developing world where other risk factors may be more important than cigarette smoking); asthma may develop in adult and even in elderly patients.

Source: 2020 Global Initiative for Chronic Obstructive Lung Disease