

Figure 1 – Management of the deteriorating patient

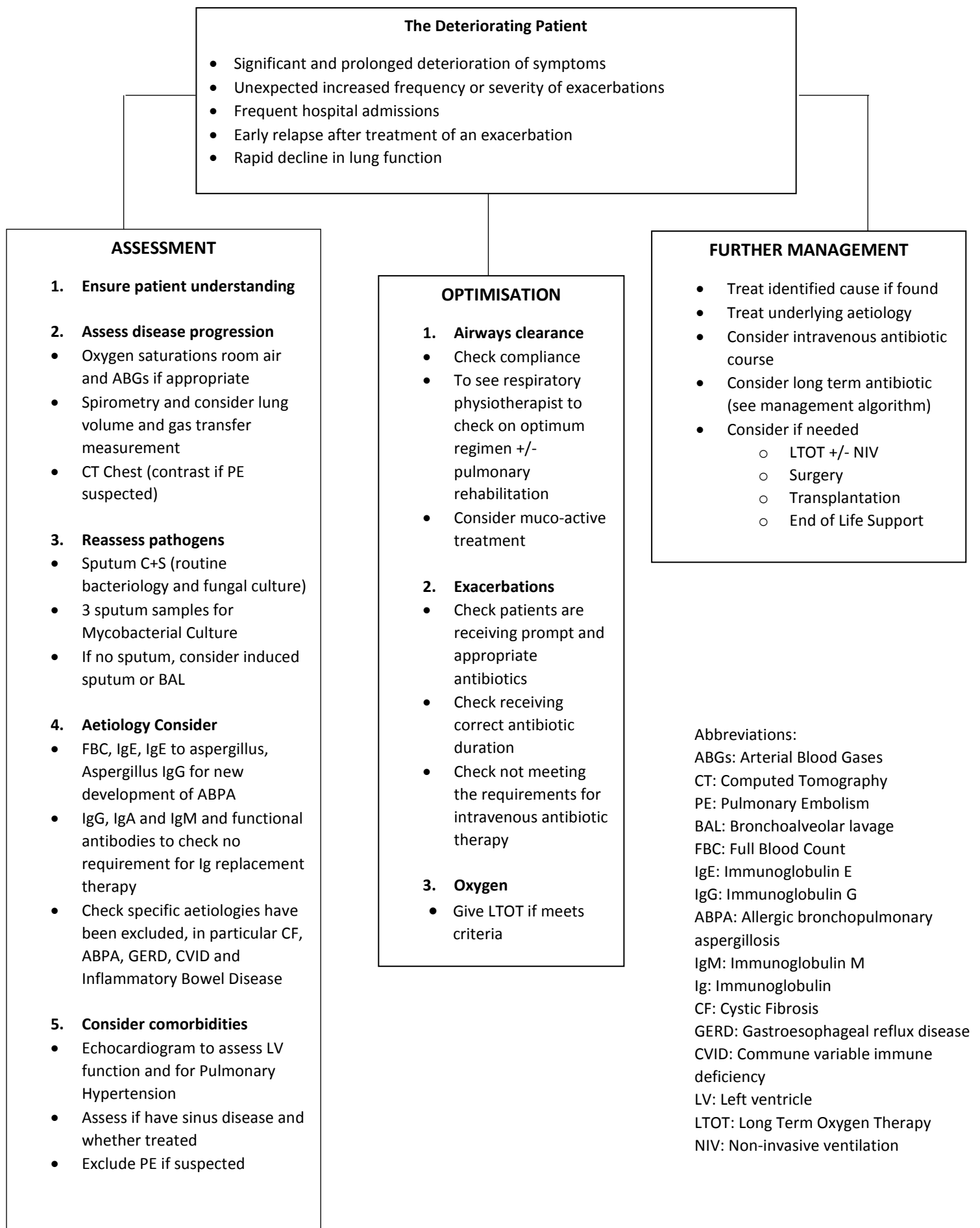


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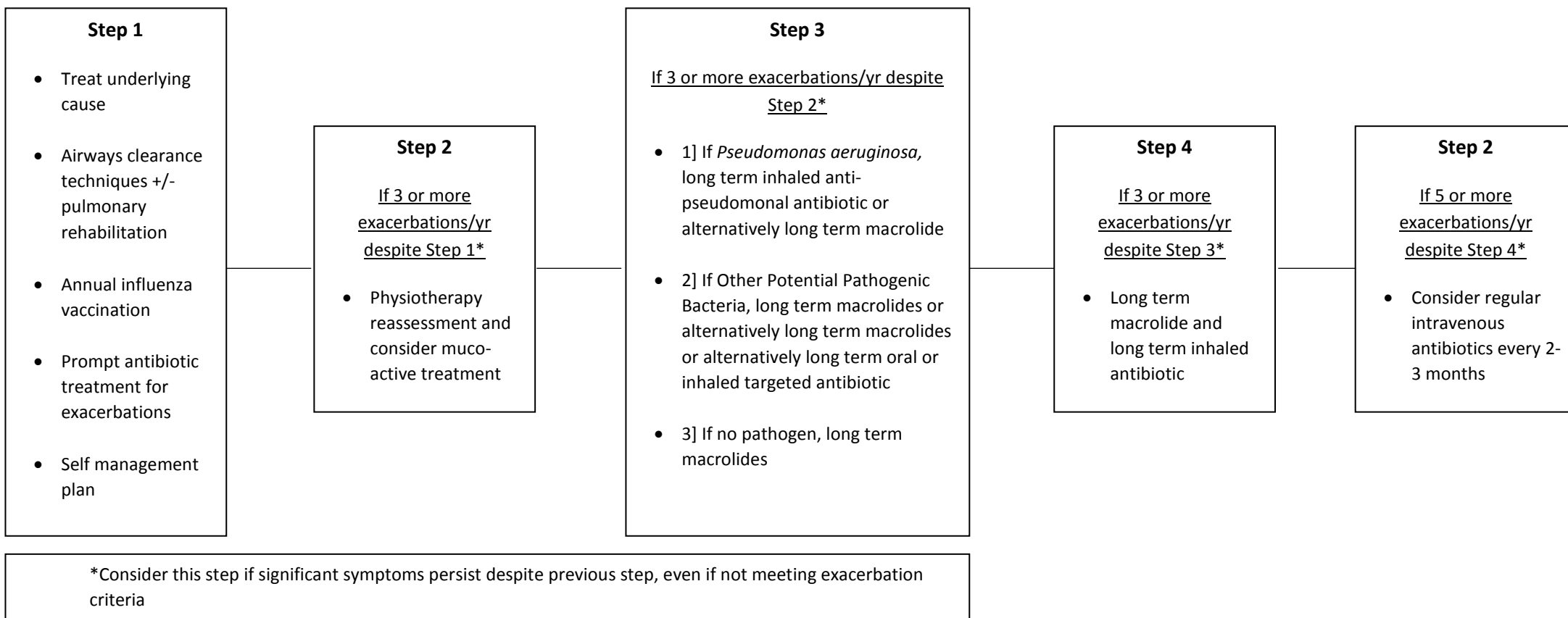


Figure 2 Stepwise management

Antibiotics are used to treat exacerbations that present with an acute deterioration (usually over several days) with worsening local symptoms (cough, increased sputum volume or change of viscosity, increased sputum purulence with or without increasing wheeze, breathlessness, haemoptysis) and/or systemic upset. The flow diagram refers to three or more annual exacerbations.

**STEP
1**

Offer active cycle of breathing techniques (ACBT) to individuals with bronchiectasis.

Consider gravity assisted positioning (where not contraindicated) to enhance the effectiveness of an airway clearance technique. If contraindicated then modified postural drainage should be used.

Patients should be reviewed within 3 months.

This should include evaluation of patient reported effectiveness (ease of clearance/patient adherence).

The inclusion of gravity assisted positioning should be for its additional effectiveness.

**STEP
2**

If ACBT is not effective or the patients demonstrates poor adherence, oscillating Positive Expiratory Pressures + Forced Expiration Technique should be considered.

**STEP
3**

If airway clearance is not effective then nebulised Isotonic or Hypertonic Saline should be evaluated for its effectiveness pre-airway clearance (especially in patients with viscous secretions or there is evidence of sputum plugging)

Individuals should be advised to complete Airway Clearance in the following order, if prescribed:

- Bronchodilator
- Mucolytic
- Airway Clearance
- Nebulised antibiotic and/or inhaled steroids (if applicable)

Figure 3 Stepwise airway clearance

ACBT: Active cycle breathing techniques

STEP

1

Increase airway clearance frequency.
E.g.: from twice daily to three/four
times daily.

STEP

2

Commence the use of mPD or PD if
tolerated.

For individuals with radiological
changes, PD or mPD should be targeted
appropriately.

STEP

3

Individuals with ongoing difficulty with airway clearance may benefit from the addition of other techniques. It is recommended that these should be commenced and evaluated in the following order (unless contraindicated)

1. Enhanced humidification / hydration of airways if secretions viscous (isotonic or hypertonic saline/humidification/ increased fluid intake)
2. Manual Techniques
3. Positive pressure devices including Intermittent Positive Pressure Breathing (IPPB) or Non Invasive Ventilation (NIV) to be used during Airway Clearance

PD=postural drainage; mPD= modified postural drainage

Figure 4 Airway clearance – exacerbations

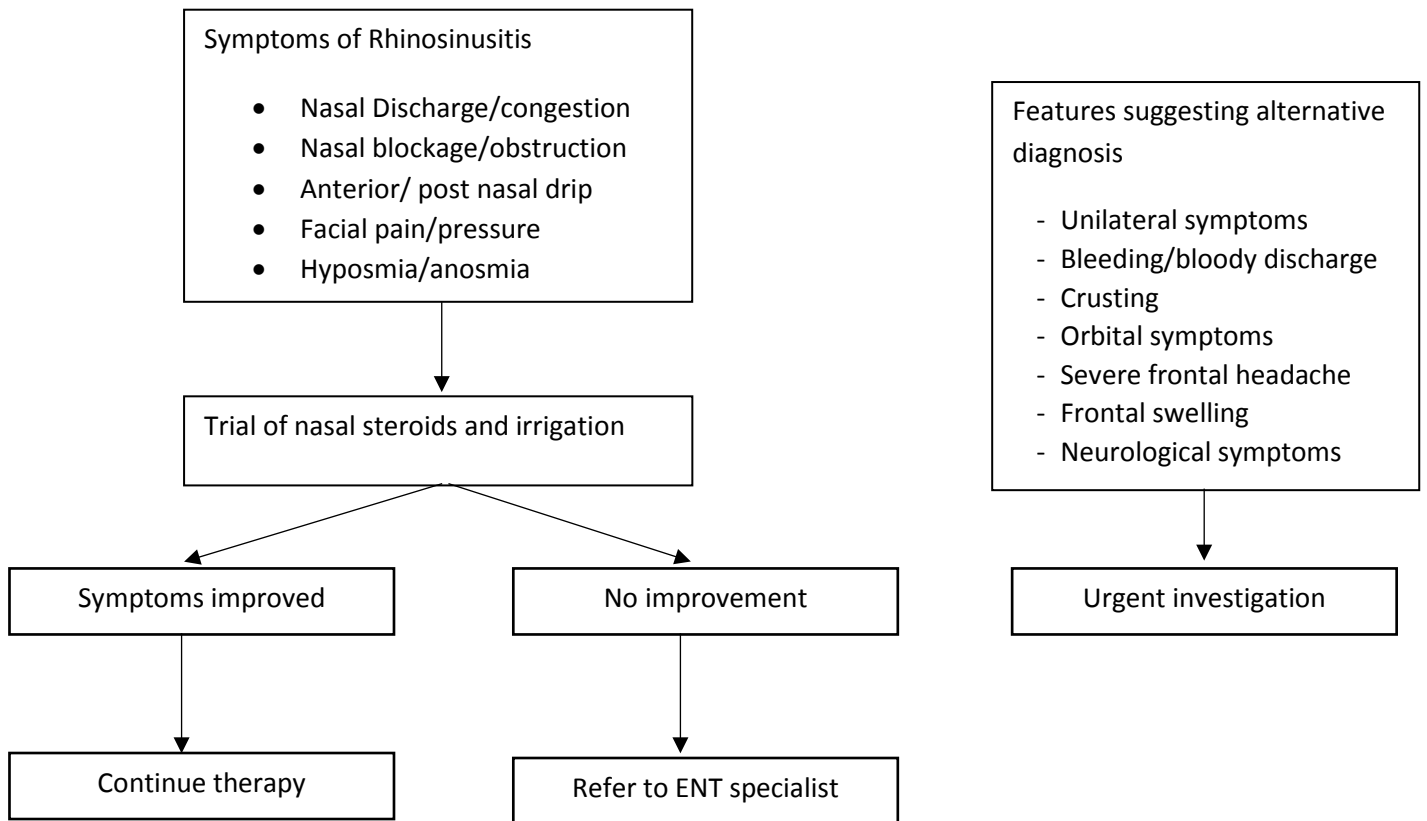


Figure 5 Algorithm for initial assessment and treatment - rhinosinusitis