STANDARD TREATMENT WORKFLOW (STW)

Asthma

Surinder Jindal[1], G.C. Khilnani[2], Ashutosh Aggarwal[3], Anant Mohan[4], Raj Kumar[5], Alok Nath[6], Dhruv Chaudhary[7], Uma Mohan[8], DJ Christopher[9], Deepak Talwar[10]

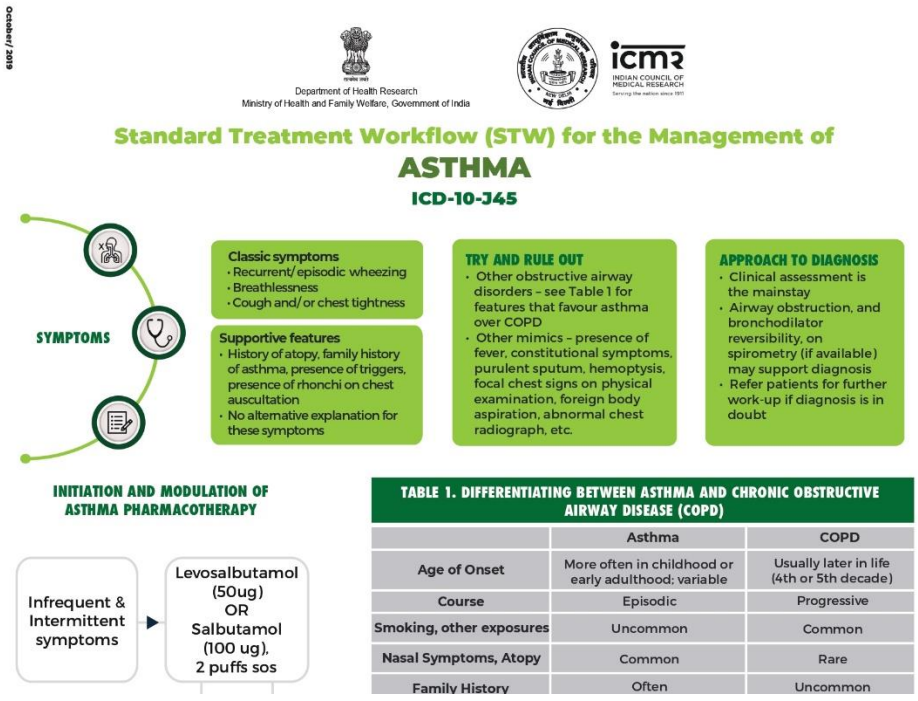
[1]Postgraduate Institute of Medical Education and Research, Chandigarh; [2]All India Institute of Medical Sciences. New Delhi; [3]Postgraduate Institute of Medical Education and Research, Chandigarh; [4]All India Institute of Medical Sciences. New Delhi; [5]Vallabhbhai Patel Chest Institute, New Delhi; [6]Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow; [7]Pandit Bhagwat Dayal Sharma Post Graduate Institute of Medical Sciences, Rohtak; [8]St John's Medical College, Bengalluru; [9]Christian Medical College Vellore; [10]Metro Hospital, Noida

CORRESPONDING AUTHOR

Dr Surinder Jindal, Postgraduate Institute of Medical Education and Research, Chandigarh
Email: dr.skjindal@gmail.com

CITATION

Jindal S, Khilnani GC, Aggarwal A, Mohan A, Kumar R, Nath A, Chaudhary D, Mohan U, Christopher DJ, Talwar D. Asthma. Journal of the Epidemiology Foundation of India. 2024;2(1Suppl):S169-S170. DOI: https://doi.org/10.56450/JEFI.2024.v2i1Suppl.085



october/ 2019

Department of Health Research
Ministry of Health and Family Welfare, Government of India

icmr INDIAN COUNCIL OF MEDICAL RESEARCH

Standard Treatment Workflow (STW) for the Management of ASTHMA

ICD-10-J45

SYMPTOMS

Classic symptoms
- Recurrent/episodic wheezing
- Breathlessness
- Cough and/or chest tightness

Supportive features
- History of atopy, family history of asthma, presence of triggers, presence of rhonchi on chest auscultation
- No alternative explanation for these symptoms

TRY AND RULE OUT
- Other obstructive airway disorders – see Table 1 for features that favour asthma over COPD
- Other mimics – presence of fever, constitutional symptoms, purulent sputum, hemoptysis, focal chest signs on physical examination, foreign body aspiration, abnormal chest radiograph, etc.

APPROACH TO DIAGNOSIS
- Clinical assessment is the mainstay
- Airway obstruction, and bronchodilator reversibility, on spirometry (if available) may support diagnosis
- Refer patients for further work-up if diagnosis is in doubt

INITIATION AND MODULATION OF ASTHMA PHARMACOTHERAPY

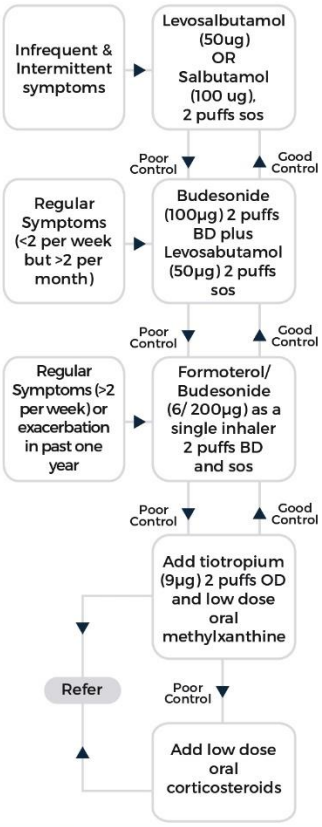


TABLE 1. DIFFERENTIATING BETWEEN ASTHMA AND CHRONIC OBSTRUCTIVE AIRWAY DISEASE (COPD)

	Asthma	COPD
Age of Onset	More often in childhood or early adulthood; variable	Usually later in life (4th or 5th decade)
Course	Episodic	Progressive
Smoking, other exposures	Uncommon	Common
Nasal Symptoms, Atopy	Common	Rare
Family History	Often	Uncommon
Triggers	Often Identified	None
Wheeze	Prominent and almost universal	May or may not be present

TABLE 2. LEVEL OF CURRENT ASTHMA CONTROL (OVER THE PRECEDING FOUR WEEKS)

Components	Inadequately controlled (any one)	Adequately controlled (all should be present)
Daytime symptoms or use of rescue medication	More than twice a week	Twice or less in a week
Night-time symptoms/ awakening	Any	None
Limitation of activities	Any	None
Pulmonary function (if available)	FEV1 <80% of predicted or PEF <80% of personal best	FEV1 >80% of predicted or PEF >80% of personal best

FEV1 Forced Expiratory Volume in first second, PEF Peak Expiratory Flow

GUIDING PRINCIPLES
- Mainstay of pharmacotherapy: Inhaled drugs
- Frequency of symptoms determine treatment initiation (see figure 1 for details)
- Reassess at 3-4 weeks – good response: in favour of asthma diagnosis
- Patient education for compliance, warning signs, triggers, inhaler technique, PEF monitoring
- Inhaler technique to be monitored
- Follow-up at 4-12 weeks, assess diseases control by clinical parameters (see Table 2)
- Step-up or step-down treatment as per level of asthma control (see figure 1)
- Follow up three-monthly and modulate treatment as needed
- Refer for further evaluation and management if asthma remains poorly controlled

DISEASE EXACERBATION

WHEN TO SUSPECT EXACERBATION
- Suspect if acute symptomatic worsening, or reduction in PEF to below 80% of personal best, while on continued treatment
- Take two additional puffs of the inhaler used if symptoms persist, and repeat if needed
- If no response after 24 hours, or symptomatic worsening, or further reduction in PEF, contact physician
- Physician to assess severity of exacerbation and manage accordingly

LIFE-THREATENING EXACERBATION
Altered sensorium, orthopnea, cyanosis, paradoxical breathing, hypotension, and/ or bradycardia (heart rate <60 bpm) – immediately refer to higher centre with ICU facility

SEVERE ACUTE ASTHMA (PATIENT TO BE ADMITTED)
- Inability to complete sentences, agitation, use of accessory muscles, respiratory rate >30/ min, heart rate >110/ min, pulsus paradoxus >25 mm Hg, silent chest, and/ or room air sPo2 <92%

- Oxygen supplementation to maintain spO2 92-95%
- Nebulized levosalbutamol/ ipratropium (1.25 mg/ 0.5 mg) three doses at 20-minute interval, then 4-6 hourly or as needed
- Injection hydrocortisone 200 mg intravenously, then oral prednisolone 0.5 mg/ kg daily for five days
- Refer if no improvement
- **Discharge** only when symptoms improve, wheezing absent or significantly reduced, heart rate <100 bpm, respiratory rate <30/ min, room air sPo2 >94%
- Schedule follow-up outpatient visit at one week

NON-SEVERE ACUTE ASTHMA
- If none of the above features present – manage on outpatient basis
  - Continue additional inhaler doses as needed
  - Oral prednisolone 0.5 mg/ kg daily for five days
  - Schedule follow-up outpatient visit at one week

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

REFERENCES
1. Agarwal R, et al. Guidelines for diagnosis and management of bronchial asthma: Joint ICS/ NCCP(I) recommendations. Lung India 2015;32(Suppl 1):S3-S42.
2. Global Initiative for Asthma (GINA). Global strategy for asthma management and prevention. 2018.
3. National Institute for Health and Care Excellence (NICE). Asthma: diagnosis, monitoring and chronic asthma management. 2017.