

## Pitfalls in Asthma Management

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### Summary :

*Asthma is a chronic inflammatory disease of airway. Despite increased awareness, Improved diagnosis and effective treatment morbidity and mortality from asthma is still high. The causes behind this unwanted situation lie in four broad components of management – Diagnosis, treatment, Patient Education & Follow-up. This article deals with those pitfalls.*

Bronchial asthma is a more understandable disease now a days. But unfortunately, despite better diagnostic techniques, increased awareness and availability of effective treatment, mortality from asthma is ever increasing<sup>1</sup>.

Much of these deaths are preventable and most admissions to the hospital are avoidable. The blame of this failure is certainly put upon the medical professional. Although we may think the proper guidelines are followed in managing asthma, studies indicate that this is not always the case<sup>2</sup>. We should bore in mind that asthma care is delicate, difficult and time consuming. A good number of literatures are easily available in different journals dealing with management of asthma. The objective of this paper is to focus some light on mismanagement of asthma.

### Bronchial asthma mistaken with COPD

Patients of COPD may present with an undetected component of asthma. A reversibility test has to be done. If there is improvement in lung function, simultaneous treatment of asthma is to be given. If the reversibility test is negative, Corticosteroids are unnecessary and sometimes hazardous (e.g. Osteoporosis in elderly).

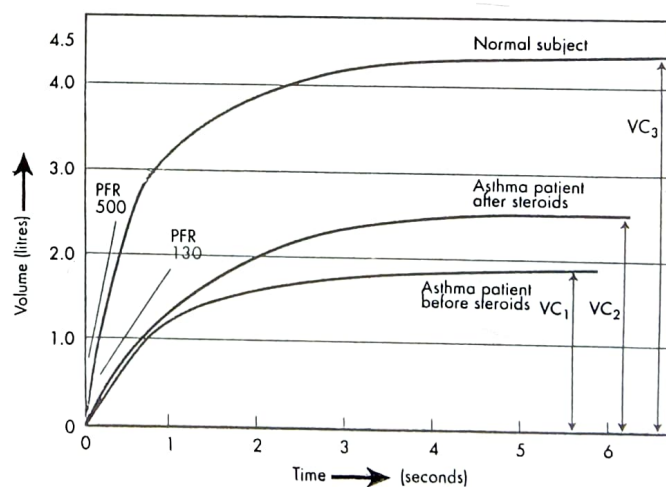
### Failure to recognize the extent of disability

Patients often have low expectations and tend to underestimate the severity of their symptoms and disability. A Peak Expiratory Flow Rate (PEFR) chart is to be carefully maintained which will forecast the poor control. Inquiry has to be made for cough or

wheeze at night or on exercise. A Peak flow meter should be available with every physician.

### Patient's failure to perceive his respiratory status

Sometimes patient reports that they are less breathless and doing well, although PEFR readings do not show any improvement. In these cases, Vital capacity (VC) measured by Spirometry may demonstrate an improvement not shown by PEFR (See Figure). Therefore, PEFR should re-recorded after two to four week's medication with  $\beta_2$ -agonist, even oral steroid. The best attainable level of PEFR is noted as "Personal best result" and then is used as the target for maintenance treatment.



**Fig-1 :** The change in vital capacity following a course of corticosteroids. There may be no increase in PFR (or FEV1), but VC shows improvement.

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Some disease leading to misdiagnosis

The following disease may lead the physician to a misdiagnosis :

- a) Chest infection with cough and expectoration :  
In asthma, the sputum will contain eosinophil rather than polymorphs and bacteria.
- b) LVF : Specially in elderly due to cardiac asthma. Usually no previous history of bronchial asthma is present. (If heart disease, careful about use of  $\beta_2$ - agonist).
- c) Pneumothorax
- d) Bronchogenic Carcinoma
- e) Pulmonary tuberculosis
- f) Pulmonary embolus
- g) Inhaled foreign body

#### *Over reliance on short acting $\beta_2$ -agonist*

Continuous over use of inhaled  $\beta_2$ -agonist may increase bronchial wall hyper reactivity and may make asthma worse<sup>3</sup>. If patient is using  $\beta_2$ - agonist inhaler more than occasional, he should be advised to start inhaled Corticosteroids. If patients is already on steroid inhaler, the existing dose to be increased until control is achieved  $\beta_2$ -agonist are then reserved for occasional break through.

#### *Hesitancy is using alternative medicines*

Although inhaled corticosteroids should be the main stay of asthma treatment, if desired level of control is not easily attained, other available drugs may be used with confidence. Physicain can choose any or some of the following medications accompanied by an adequate dose of inhaled steroid. The drugs are Theophylline, Ipratropium, Cromoglycate, Nedocromil, salmeterol (long acting  $\beta_2$ -agonist). Note that all these drugs are now available in Bangladesh.

#### *Failure to identify trigger factors*

Meticulous search to be done to identify trigger factor or factors at home, during leisure activity and in occupational settings. It is said that passive smoking can be a problem.

#### *Poor inhalation technique*

Doctor should properly guide and demonstrate the patient about proper technique of use of inhaler. The inhalation devices to be checked at regular interval-whether it is empty or blocked.

#### *Omission of spacer devices*

Uses of spacer devices certainly give a lot of benefit in using aerosols. Patient should be insisted to use spacer device regularly so that optimum result from every puff can be achieved<sup>4</sup>.

#### *Nebulizer used without steroid backup*

Nebulizer are used to deliver very high dose of  $\beta_2$ -agonists to control acute bronchospasm. Some doctors think that when nebulizer is being used, no other medication is required. But a proper steroid backup is mandatory to subside the unerlying inflammatory process.

#### *Delayed starting of oral steroid*

Patients subject to rapid onset attacks need to start oral steroids as well as bronchodilator as soon as possible. They must be able to recognize deterioration in their asthma and when to start oral steroids. It is not good having these patients wait until to be seen by a doctor. Early use of steroid not only controls symptoms but also prevent progressive structural damage to the lungs from the effects of chronic inflammation<sup>5</sup>.

#### *Inadequate course of oral steroid*

Sometimes the course of emergency oral steroid is stopped abruptly leading to another acute attack. Oral steroid is to be continued till adequate control is achieved, then reduced gradually until the minimum maintenance dose is identified.

#### *Careless switching of oral to inhaled steroid*

When an acute condition is stabilized by using oral steroid and a maintenance dose is identified, Careful trial is to taken to switch over to inhaled steroid. The dose of inhaled steroid is to be increased than before and oral steroid is to be tapered and discontinued. The maximum PEFr achieved during the course of emergency oral steroid should become the target of future treatment. Any imbalance in this switching procedure may trigger acute exacerbation.

#### *Negligence in hospitalization in due time*

The followings are the points when a patient need to be hospitalized<sup>6</sup>. Undue delay may bring fatal

- Respiratory rate is more than 25/min. Silent chest on auscultation may be found.
- The patients is cyanosed
- Bradycardia is present.



- PEFr is less than 40% of predicted value
- Inspiratory fall of systolic BP is less than 10 mm of Hg
- The patient is extremely confused and may be unconscious

Non-providence of "Management Plan" and "Patient Education"

After the initial diagnosis, the aim of the care is to enable the patient to be free from symptoms, to optimize their lung function, to manage their own disease and to lead a normal or near normal active life. For these, patient education is very important. Every patient should be provided with a written self-management plan and guidelines prepared by the doctor<sup>7</sup>.

Asthma check list for doctors

A short checklist is provided below to avoid the pitfalls of asthma management covering four broad components - Diagnosis, Treatment, Patient Education & Follow-up.

1. Have you ruled out coexisting asthma in COPD and other misleading diseases in Asthma ?
2. Is your patient properly assessing the extent of severity ?
3. Do you have a Peak flow meter and are you maintaining PEFr chart ?
4. Have you done or advised your patient to do a Spirometry (lung function test) specially to see reversibility ?
5. Are you over relying on  $\beta$ 2-agonist only ?
6. Have you looked for trigger factors ?
7. Have you checked the inhalation technique and the devices ?
8. Are you prescribing steroid smartly and properly ?
9. Is the patient is in need of hospitalizations ?
10. Have you provided the patient with adequate education and written management plan ?

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