

# Management of Chronic Obstructive Pulmonary Diseases (COPD) Exacerbation. A Clinical Audit in Nasser Hospital, Gaza-Strip, Palestine

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**Abstract:** Chronic obstructive pulmonary disease (COPD) is a global health problem. World Health Organization (WHO) predicts that COPD will become the third leading cause of death worldwide by 2030. The frequency and severity of COPD exacerbations, as well as the management approach of these exacerbations are the most important measures determining overall prognosis in COPD. This audit was designed to assess the current practice in COPD exacerbation management and compare it to the Global Initiative for Chronic Obstructive Lung Disease Guideline, 2015 standards. The sample was selected retrospectively from the patients who were admitted to the Nasser Hospital between 2014-2016. In total, 55 patients were identified for this audit. The mean age was 66.4+/-4.6 years and 98.2% were male. All patients received inhaled bronchodilators, of these 64.4% received short acting beta2-agonists (SABA), 78% short-acting muscarinic agonists (SAMA), 23.6% long-acting muscarinic agonists (LAMA), 1.8% long-acting beta2-agonists (LABA) and 40% both SABA and SAMA. 96.4% patients received systemic corticosteroids. 78.2% of patients took > 40 mg Prednisolone daily. 21.8% received Prednisolone for 5 days, while the majority received for a shorter period. Other treatments included 92.7% had oxygen, 100% antibiotics, 5.5% antiviral medication and 3.6% theophylline. No patient received chest physiotherapy.

**Key words:** Audit, COPD, exacerbation, Nasser Hospital, chronic, Obstructive, pulmonary, disease.

## 1. Introduction

### 1.1 Background and Importance

The frequency and severity of COPD exacerbations are the most important outcome measure determining overall prognosis in COPD. COPD patients suffer one to four exacerbations per year, the management approach of these exacerbations can affect patients' clinical progress as well as health related quality of life and the risk of hospital admissions.

Recently, the approach to COPD exacerbations management has changed dramatically. Good evidence now supports the use of corticosteroids, antibiotics, as well as bronchodilators. These can improve outcomes for COPD exacerbations [1]. This audit focused on

reviewing the most relevant evidence based therapeutic options currently available for the appropriate management of the COPD exacerbations.

### 1.2 Goals

This audit was designed to examine the current practice in COPD exacerbation management at Nasser Hospital and compare it to standards based on the Global Initiative for Chronic Obstructive Lung Disease Guideline (2015).

## 2. Methods

### 2.1 Study Design and Data Collection

The sample was selected retrospectively and randomly from patients' medical records who were admitted to Nasser Hospital in the period from 2014 to 2017, with main diagnosis of COPD exacerbation.

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Data collection sheet was used to collect the data from patients' files.

## 2.2 Data Analysis

The data was analyzed by Statistical Package for the Social Sciences (SPSS) program.

## 3. Results

### 3.1 Subject Characteristics

In total, 68 cases were identified for this audit. 13 of these were excluded for recording issues. The final number was 55. The mean age was  $66.4 \pm 4.6$  years and 98.2% were male. Only 12.7% of patients had an arterial blood gas test (ABG), of these 85.4% presented with severe exacerbations.

### 3.2 Inhaled Bronchodilator

All patients received inhaled bronchodilators, of these 64.4% received short acting beta2-agonists (SABA), 78% short-acting muscarinic agonists

(SAMA), 23.6% long-acting muscarinic agonists (LAMA), 1.8% long-acting beta2-agonists (LABA) and 40% both SABA and SAMA (Table 1).

### 3.3 Systemic Corticosteroid

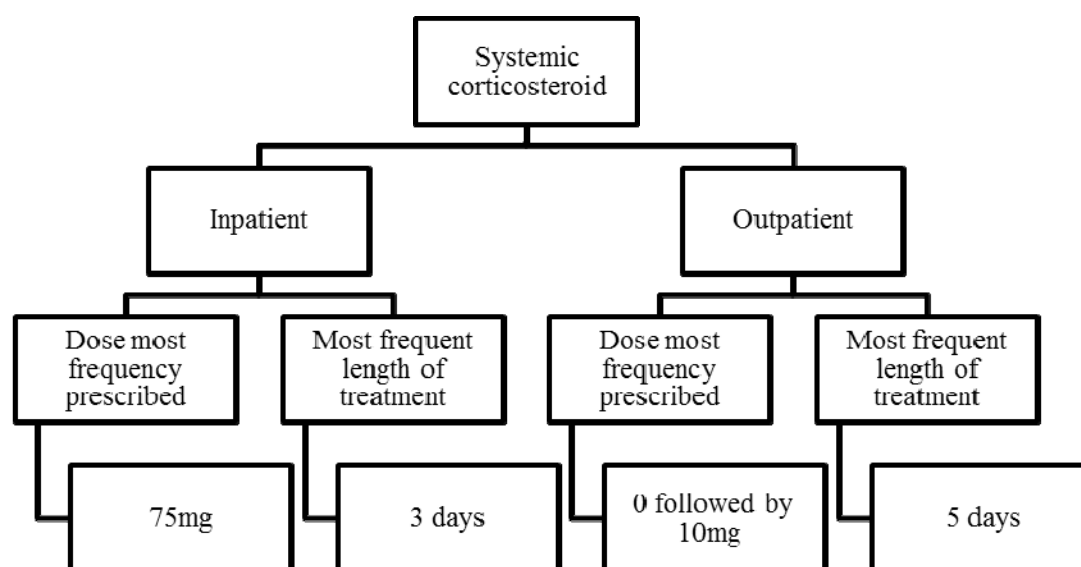
A total of 96.4% patients received systemic corticosteroids. 78.2% of patients took more than the recommended dose of 40 mg Prednisolone daily. 21.8% received Prednisolone for 5 days, as recommended, while the majority received it for a shorter course. On discharge, patients received no corticosteroids or mainly 10 mg as out-patient management (Figs. 1 and 2).

### 3.4 Other Treatments

Other treatments included: 92.7% had oxygen, 100% had antibiotics, 5.5% had antiviral medication and 3.6% had theophylline. No patient received (SABA)-Subcutaneous or chest physiotherapy (Table 2).

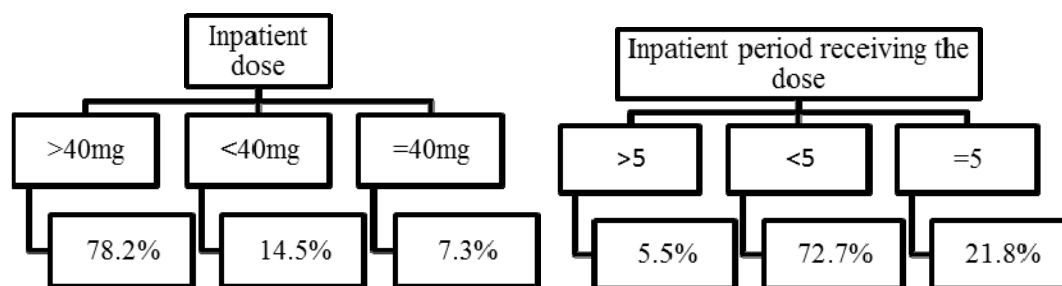
**Table 1 Type and percentage of Inhaled bronchodilators.**

Type	Percentage
Short acting B2-agonists (SABA )	64.4%
Short acting Muscarinic agonists (SAMA)	78%
Long acting Muscarinic agonists (LAMA)	23.6%
Long acting B2-agonists (LABA)	1.8%
Both SABA & SAMA	40%



**Fig. 1 Systemic corticosteroid (prednisone by mg) use in in-patient and out-patient.**

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**Fig. 2** Systemic corticosteroid (prednisone by mg) use according to guideline.

**Table 2** Other therapies used in COPD exacerbation cases.

Type	Percentage
Oxygen	92.7%.
Antibiotics	100%
Antiviral	5.5%
Magnesium Sulphate	0%
SABA-SC	0%
Theophylline	3.6%.
Chest physiotherapy	0%
Others for complications Prevention	100%

#### 4. Conclusion

Overall adherence to guidelines was moderately good. All patients received antibiotics and 94.7% oxygen, which are both recommended for all patients. Chest physiotherapy was not advocated, which is known to be ineffective for this indication. Less useful therapies were also rarely prescribed.

However, some areas showed poor adherence and this might be due to a lack of awareness of recent evidence.

Firstly, more patients received SAMA than SABA, although SABA are more effective and therefore the first line treatment for COPD exacerbation [2].

96.4% of patients received systemic corticosteroids. However, the mostly prescribed dose (75 mg Prednisolone) exceeds the recommendation, which is 40 mg for 5 days.

One important barrier identified in this study was low familiarity with specific recommendations of the GOLD guidelines. This has also been found to be one reason for poor adherence to guidelines by Peres et al. [3]. Therefore, awareness of the guidelines has to be improved in order to also improve adherence to clinical

guidelines. This goes hand in hand with fostering evidence based medicine across the Gaza-Strip.

As other audit projects -for example “Stroke management in Nasser Medical Complex”- this one also found documentation to be of a very poor standard [4]. This is in urgent need of improvement across Gaza, in order to further develop a meaningful audit culture for quality improvement of healthcare services.

#### References

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