

Local side effects of inhalers in patients with COPD in KHMC

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ABSTRACT

Objective: To find out the most common local side effects caused by inhalers in patients with Chronic Obstructive Pulmonary Disease (COPD), treated in the pulmonary clinic in King Hussein Medical Center (KHMC). The effect of regular mouth rinsing with water after inhaler use in preventing these side effects was also evaluated.

Method: Descriptive study of 127 patients diagnosed to have Chronic Obstructive Pulmonary Disease (COPD) between January 2015 and January 2017, treated in the pulmonary clinic in King Hussein Medical Center (KHMC). The rates of different local side effects of inhalers used in Chronic Obstructive Pulmonary Disease (COPD) were assessed in patients using inhalers regularly for more than 6 months, during their regular visit to the pulmonary clinic, using a questionnaire. The rates of regular mouth rinsing after inhaler use were evaluated as well.

Results: Of the 127 patients enrolled in our study, 93 patients (73%) were males. The mean(\pm SD) age was 68.0 ± 7.6 years. The ages ranged between (47-79) years. 102 patients (80%) reported at least one adverse local side effect of inhalers. The most common local side effect was sore throat, affecting 29 patients (23%). Other side effects included dysphonia (18%), mouth ulcers (2%), oral candidiasis (5%), thirst (17%) and dry throat (21%). Out of the 102 patients who reported having local side effects

of inhalers, 82 patients (80%) admitted that they don't rinse their mouth after inhaler use. Out of the 25 patients who didn't have adverse local side effects from the inhalers, only 2 patients (8%) admitted that they don't rinse their mouth regularly after inhaler use.

Conclusion: Local side effects of inhalers are common among COPD patients treated in KHMC. The most common side effects are throat and vocal complaints. Failure to adhere to mouth rinsing with water after inhaler use plays a major role in increasing the rates of these side effects.

Key words: COPD, Side effects, Inhalers

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is considered one of the most common diseases worldwide. It is currently the fourth leading cause of death worldwide.(1) By 2020, COPD is expected to account for more than 3 million deaths annually, and to be the third leading cause of death worldwide.(2)

Inhaler therapy is considered the main mode of treatment of COPD. Bronchodilators, including Beta-2 agonists and anticholinergics, as well as inhaled corticosteroids, are considered to be the cornerstones in the management of COPD. (3) Despite the efficacy of inhaler therapy in managing COPD, adverse local side effects of these inhalers, especially inhaled corticosteroids, are common among these patients. (4-8) Those side effects are usually neglected and underestimated by both the patients and the physicians. (9,10) The different adverse local side effects of inhalers in COPD patients are poorly studied, and the information regarding the rates of these side effects are limited.(7) Direct questioning by the treating physician, as well as spontaneous patient reports regarding the different adverse side effects of inhaler therapy in COPD patients, are considered very important in detecting these side effects, and managing them properly and effectively. (11)

In our study, our aim was to assess the different adverse local side effects of inhalers in patients with COPD, treated in the pulmonary clinic in King Hussein Medical Center (KHMC). The effect of regular mouth rinsing after the use of inhalers in preventing these side effects was evaluated as well.

Materials and Methods

In our study, 127 patients who are diagnosed to have COPD, and who are regularly followed up and treated in the pulmonary clinic in KHMC, were enrolled in this study done between January 2015 and January 2017. Thorough explanation of the aims of the study was done to all the patients, after which a consent form was signed by all the patients prior to enrolling them in the study. Approval of the ethical committee was obtained in order to carry out the study. Inclusion criteria were as follows: age >40 years, current or former smokers, and an established diagnosis of COPD for at least 3 years. Exclusion criteria were as follows: immunocompromised patients, patients who received oral or parenteral corticosteroids for more than 2 weeks during the last 6 weeks, patients who suffered from an exacerbation requiring hospitalization during the last 6 weeks, patients who are not receiving inhaled corticosteroids as a part of their treatment, and patients who are non compliant to their inhalers.

After being enrolled in the study, all the patients were evaluated by a pulmonologist in the clinic. Information regarding the age and the gender of the enrolled patients were gathered. The type of inhalers used by the patients was recorded. Afterwards, the patients were asked to answer a questionnaire during their regular visit to the clinic. The questionnaire asked whether or not the patient suffered from any local side effect after using the inhalers. The side effects that were mentioned included the following: change of voice (dysphonia), oral ulcers, oral candidiasis, sore throat, thirst and dry throat. The patients

were also informed that they can mention any other local side effect, and they can choose more than one side effect if they have experienced them at any time during their treatment with the inhalers. The patients were asked to answer whether or not they are compliant to rinsing their mouth regularly with water after the use of their steroid inhaler.

The number and percentage of patients who developed each local side effect was calculated, and the number and percentage of those who were not compliant to regular mouth rinsing was assessed as well, and a comparison between the group of patients who developed local side effects and those who did not was done in order to assess the efficacy of mouth rinsing in preventing the local side effects of the inhalers.

Results

127 patients with COPD, who are using regular inhaler therapy were enrolled in this study. 93 patients (73%) were males. The mean (\pm SD) age was 68.0 ± 7.6 years. The ages ranged between (47-79) years.

Overall, 102 patients (80%) reported at least one adverse local side effect. The most common side effect was sore throat, which was mentioned by 29 patients (23%). Dry throat, dysphonia and thirst were the next most common local side effects, mentioned by 21%, 18% and 17% respectively.

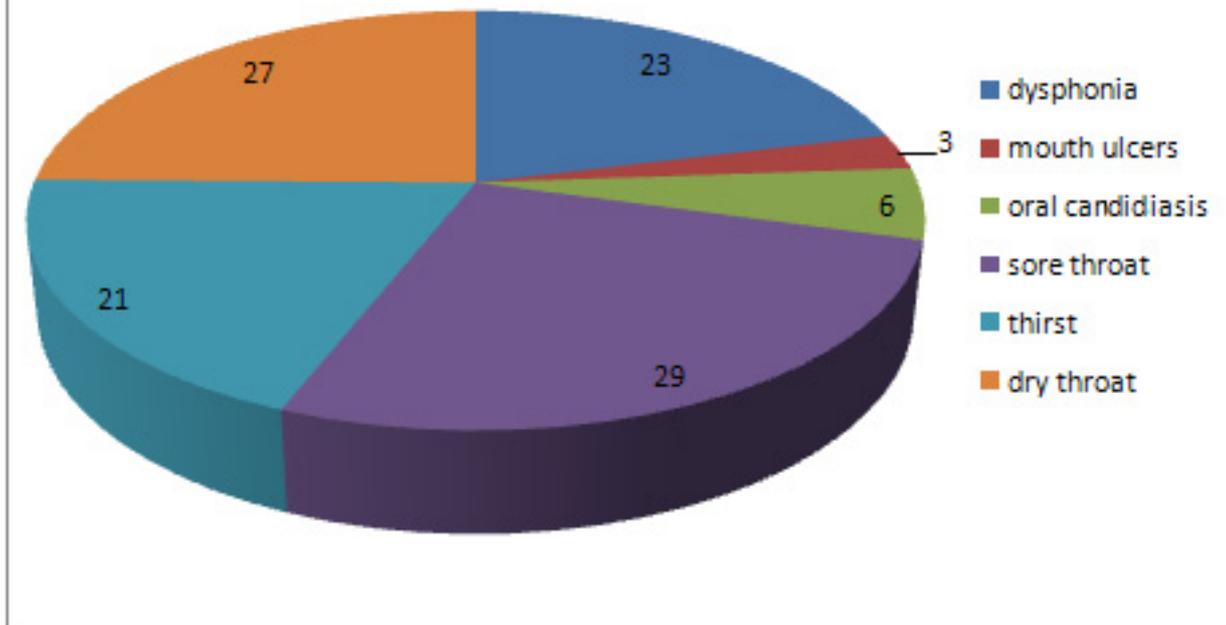
Chart 1 shows the number of patients who developed different local side effects of inhalers in this study.

Discussion

In our study, adverse local side effects of inhaler therapy in patients with COPD were found to be high, with about 80% of the patients having at least one local side effect. This proves that there is a high prevalence of local side effects of inhalers. Many other studies found the same observation regarding the prevalence of side effects of inhalers. (12-14) The most common side effects mentioned by the patients were mainly sore throat and throat dryness, both of which accounted for more than half the side effects mentioned by the patients (44% of all the patients, and 55% of those who had side effects). This was also observed by other studies, which found a high prevalence of throat symptoms in patients using inhalers. (12,13) Oral cavity side effects, such as oral candidiasis and oral ulcers were seen in only 7% of the patients. In other studies, the rates of oral cavity side effects vary widely, with studies estimating the prevalence of oral candidiasis to range between 0-70%. (4,5,15) This wide range may be caused by the dose of the inhalers, mainly the inhaled corticosteroid dose, and the duration of the therapy.

Thirst was observed as a side effect in 17% of the patients in our study. In one cross sectional study, this side effect was seen in 42-60% of the patients included in the study. (6) However, this high rate might be explained by the fact that this cross sectional study was conducted on patients with bronchial asthma rather than COPD, who were maintained on a high dose of inhaled corticosteroids.

local side effects of inhalers



Dysphonia was mentioned as a side effect in our study by 18% of the patients. Many other studies found dysphonia to be a common side effect of inhalers, with rates ranging between 10-57%. (8,9,14) The most acceptable mechanism for dysphonia is attributed to the steroid component in the inhalers, which will lead to steroid myopathy affecting the vocal muscles, which causes a bilateral adduction deformity. (16,17)

Mouth rinsing was found to be a very effective method in preventing local side effects in our study. While 80% of the patients who developed local side effects didn't rinse their mouth regularly after the use of their inhalers, only 8% of the patients who didn't develop any local side effect in our study didn't rinse their mouth regularly after inhalers. This observation emphasizes the importance of oral hygiene maintenance and mouth rinsing in COPD patients using inhaler therapy, in order to prevent the occurrence of local side effects.

In conclusion, the rate of local side effects of inhalers in COPD patients is high. Mouth rinsing regularly is a very effective method to minimize these side effects. Taking into consideration the high rates of local side effects of inhalers, the attending physician is advised to regularly check for these side effects, and emphasize the importance of maintaining good mouth hygiene and mouth rinsing after inhaler use to his patients during each visit to the clinic.

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