



## **Budesonide Use in the Outpatient Department in a Public Hospital in Al-Kharj**

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### **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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## **ABSTRACT**

**Aim:** This study aimed to describe the prescribing pattern of budesonide nebulizer and budesonide nasal spray in a public hospital in Alkharj.

**Methodology:** This retrospective study was conducted in a public hospital in Alkharj city. The outpatient prescriptions were reviewed to describe the use of budesonide in the period between 01-01-2018 and 31-06-2018. The study included budesonide forms that are delivered directly to the respiratory system, so budesonide nebulizer and budesonide nasal spray were included in the study and other dosage forms were excluded.

**Results:** About 53.12% of the prescribed budesonide was in the form of nebulizer and 46.88% was in the form of nasal spray. Most of them were males (62.50%) and about 43.75% of them were less than 10 years. More than 53% of the prescriptions were written by residents and 40.62% were written by consultants. The most commonly prescribed department was pediatrics department (43.75%) followed by Ear-Nose-Throat (E.N.T) department (18.75%) and emergency (18.75%).

**Conclusion:** The present study showed that the use of budesonide was uncommon in the outpatient setting. More studies are needed to explore the frequency of prescribing other dosage forms of budesonide and to explore the frequency of prescribing other alternative agents.

**Keywords:** Budesonide; nasal; nebulizer; outpatient; use.

## 1. INTRODUCTION

Budesonide inhaler is a corticosteroid or steroid (cortisone-like medicine). It works by preventing inflammation in the lungs and makes the asthma attack less severe. Budesonide is an effective agent but may cause some unwanted effects. Although not all of these side effects may occur, if they do occur they may need medical attention. The most common side effects include body aches or pain, chills, congestion, cough, diarrhea, dryness or soreness of the throat, general feeling of discomfort or illness, headache, joint pain, muscle aches and pains, nausea, shortness of breath or troubled breathing, and others [1].

Budesonide is a steroid that is available in different dosage forms; it is available as an inhaler, nasal spray, tablets, capsules, granules, rectal foam, and enemas [2]. Budesonide capsules are indicated for patients who have Crohn's disease [3,4]. In addition to that, capsules and rectal foam are used for patients who have ulcerative colitis [5,6]. Various inhaled budesonide products are indicated for prophylactic therapy in asthma [7-9] and reducing exacerbations of COPD [9]. Moreover, budesonide nasal spray is used to manage symptoms of hay fever and upper respiratory allergies [10].

Drug use research is thus an important part of pharmacoepidemiology as it describes the nature, extent, and determinants of drug exposure [11]. It is vital to document the patterns

of prescription medication use to inform both clinical research and practice [12].

There are few studies about the pattern of prescribing budesonide in our region. Therefore, this study aimed to describe the prescribing pattern of budesonide nebulizer and budesonide nasal spray in a public hospital in Alkharj.

## 2. METHODOLOGY

This retrospective study was conducted in a public hospital in Alkharj city. The outpatient prescriptions were reviewed to describe the use of budesonide in the period between 01-01- 2018 and 31-06-2018.

The study included budesonide forms that are delivered directly to the respiratory system, so budesonide nebulizer and budesonide nasal spray were included in the study and other dosage forms were excluded.

The data were collected and analyzed using Excel sheet and the data were represented in the 5 tables as a numbers in one column and the percentages in the other column. The study was approved by the ethical committee in the hospital.

## 3. RESULTS AND DISCUSSION

During the study period from January/2018 to June/2018, 32 patients received prescriptions contained budesonide. Most of them were males (62.50%) and about 43.75% of them were less than 10 years. Table 1 shows the personal data of the patients who used budesonide.

**Table 1. The personal data of the patients**

Variable	Category	Number	Percentage
Gender	Male	20	62.50
	Female	12	37.50
Age	Less than 10	14	43.75
	10-19	4	12.50
	20-29	6	18.75
	30-39	3	9.38
	40-49	3	9.38
	50-59	1	3.12
	60-69	1	3.12

Table 2 shows the dosage forms of the prescribed budesonide. About 53.12% of the prescribed budesonide was in the form of nebulizer and 46.88% was in the form of nasal spray.

Table 3 shows the duration of budesonide use. About 40.62% of budesonide prescriptions were for 1 month and 15.63 % were for 3 months.

**Table 2. Dosage forms of the prescribed budesonide**

Prescribers level	Number	Percentage
Nasal spray	15	46.88
Nebulizer	17	53.12

**Table 3. The duration of budesonide use**

Duration	Number	Percentage
6 Months	2	6.25
3 Months	5	15.63
1 Month	13	40.62
3 Weeks	2	6.25
2 Weeks	3	9.38
1 Week	3	9.38
10 Days	2	6.25
5 Days	1	3.12
1 Day	1	3.12

Table 4 shows the level of the prescribers who prescribed budesonide nebulizers and nasal sprays. More than 53% of the prescriptions were written by residents and 40.62% were written by consultants.

Table 5 shows the departments that prescribed budesonide. The most commonly prescribed department was pediatrics department (43.75%) followed by Ear-Nose-Throat (E.N.T) department (18.75%) and emergency (18.75%)

**Table 4. The level of the prescribers**

Prescribers Level	Number	Percentage
Specialist	2	6.25
Resident	17	53.12
Consultant	13	40.62

The use of budesonide was uncommon in Alkharj as a nasal spray or as an inhaler. This could be due to the availability of several alternative agents. More than half of the patients who received budesonide were infants or children. This is rational because budesonide nebulizer is

used mainly in bronchial asthma and croup diseases [13] and budesonide nasal spray is used to relieve sneezing, stuffy, runny, or itchy nose caused by hay fever or other allergies [14], these diseases are common in this age group.

**Table 5. The prescribing' departments**

Department	Number	Percentage
Pediatrics	14	43.75
E.N.T	6	18.75
Emergency	6	18.75
Internal	1	3.12
Medicine		
Chest	2	6.25
Nephrology	1	3.12
Ophthalmology	2	6.25

Most of the patients use for the duration of 1 month or more. It is commonly used for 1 or 2 months because it is used also as a maintenance treatment and if the patient uses this product for longer than 2 months per year, he should consult the prescriber [15]. Kalola and Ambati reported that if the children used budesonide spray for more than two months in a year, then monitoring the growth of the children is needed [16]. It should be noticed that the patients could continue the use of budesonide for several months because It may take up to 4-6 weeks of regular use before the full benefit of this drug takes effect [17].

Approximately half of budesonide prescriptions were written by consultants or specialists. This is rational because the use of corticosteroid could result in several side effects and should be used carefully to decrease these effects and to use and stop it correctly to prevent its withdrawal symptoms.

Budesonide nebulizer and budesonide nasal spray are prescribed commonly for pediatrics to manage respiratory problems. Likewise, in the present study the most commonly prescribed departments were pediatrics department and E.N.T department. The main limitation in the study was the lacking of the patient diagnosis in the outpatient files.

#### 4. CONCLUSION

The present study showed that the use of budesonide was uncommon in the outpatient setting. This could be due to the availability of several alternative to it. More studies are needed to explore the frequency of prescribing other

dosage forms of budesonide, the prescribing of budesonide in other setting, and to explore the frequency of prescribing other corticosteroids.

## CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

The study was approved by the ethical committee in the hospital.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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