

# Original Research Article

## FREQUENCY OF OUTPATIENT INHALERS PRESCRIPTIONS IN RIYADH

### Abstract

**Background** Community pharmacists help patients in making informed decisions about their treatment and prevent the problems that could be developed from self-medication. The maintenance therapy with inhaled medications is the keystone of pharmacotherapy in many respiratory diseases such as asthma and chronic obstructive pulmonary disease.

**Aim:** The aim of the present study was to explore the frequency of inhalers dispensing in Riyadh

**Methodology** This was a cross-sectional, observational study carried out in Riyadh city to analyze the prescriptions in outpatient pharmacies.

**Results and discussion** The total number of prescriptions is 198 prescriptions that include 650 different medications. Out of the 650 medications, the majority were in the form of a tablet (61.7%), followed by capsules. The present study showed that the use of inhalers was uncommon in Riyadh. Out of 650 drugs, 27 drugs were available as inhalers (4.15 %). Out of 27 Inhalers, Ventolin inhalers is the most prescribed (48.14 %), followed by Seretide Evohaler (29.62%) and Symbicort Turbuhaler (22.2 %).

**Conclusion** Although there is a high prevalence of respiratory diseases, inhaler prescriptions and dispensing aren't common. This may be due to the use of these inhalers as OTC drugs. The role of pharmacists should be to dispense the regular medications only by prescriptions and to counsel patients about the information regarding the use of inhalers

24 **Keyword** Outpatient, Inhalers, Prescriptions, Riyadh

25

## 26 **Introduction**

27 Community pharmacists commonly help patients in making the appropriately informed decisions  
28 about their therapy and prevent the problems that could be developed from self-medication. The  
29 appropriate dispensing processes of medicines prescription or over the counter (OTC)  
30 medications require more attention to patients' needs than on medication marketing (1).

31 Studies report that the public considers pharmacists who work in community pharmacies are an  
32 accessible and reliable source of information, mainly in the case of using OTC medicines and in  
33 minor diseases. Moreover, they are generally accepted as qualified health care professionals and  
34 medication experts (2 -4).

35 Asthma and chronic obstructive pulmonary disease (COPD) (5, 6) are common reasons for  
36 mortality and morbidity. Management of these two diseases requires consistent administration of  
37 several medications through inhalation (7, 8).

38 Globally, it is estimated that in 2016 there were 251 million cases of COPD, with the number of  
39 cases likely to increase with increasing the age of populations and increasing the number of  
40 smokers (9-12)

41 Inhaled maintenance medications are the cornerstone of pharmacotherapy in different respiratory  
42 diseases such as asthma and chronic obstructive pulmonary disease. The major two classes of  
43 inhaled medication that are usually used include corticosteroids (ICS) and bronchodilators (13)

44 Typically, in patients with asthma, inhaled corticosteroids and long-acting  $\beta$ -agonists are used  
45 regularly, with short-acting  $\beta$ -agonists (SABAs) used as rescue therapy only when needed (14-  
46 16). In COPD, both long-acting  $\beta$ -agonists and long-acting muscarinic antagonists have been  
47 used alone or in combination (17, 18)

48 Inhaler medications generally should be given by prescriptions and not as OTC. Moreover, the  
49 physician should diagnose the disease and determine the stage of it before choosing the  
50 medications. So it isn't rational to dispense these medications without prescriptions. The  
51 objective of this study was to explore the frequency of dispensing inhalers in the prescriptions of  
52 outpatient pharmacies in Riyadh.

### 53 **Methodology**

54 The study was conducted in Riyadh, Saudi Arabia. The community pharmacies were randomly  
55 selected and data was collected from the pharmacies in Riyadh. This cross-sectional,  
56 observational study was designed to analyze the prescriptions in outpatient pharmacies in  
57 Riyadh. The prescriptions were analyzed to demonstrate the number of prescribed inhalation  
58 drugs. The study investigator contacted the selected pharmacies in the Riyadh region and,  
59 explained to the pharmacists the study objectives, and assured them the complete confidentiality  
60 of the patient.

61 The collected data was analyzed and calculated as frequencies and percentages for the total  
62 number of prescriptions, the total number of drugs prescribed in each prescription, the total  
63 number of inhalers prescribed for the treatment of asthma and the most dispensed inhalers.

### 64 **Results and discussion**

65 A total number of 198 prescriptions were evaluated in the different pharmacies in Riyadh. There  
 66 was a total number of 650 medication has been prescribed. Amongst them there were 68  
 67 prescriptions contain 2 drugs, 62 prescriptions contain 3 drugs, 38 prescriptions contain 4 drugs  
 68 and 30 prescriptions contain more than 4 drugs respectively. The total distribution of prescription  
 69 is shown in table 1.

Table 1. Total number of prescriptions	
Number of drugs Prescribed	Number of prescriptions
2 drugs	68
3 drugs	62
4 drugs	38
More than 4 drugs	30

70  
 71 The prescription drugs were categorized on the basis of different dosage forms, Out of the 650  
 72 medications , the majority were in the form of tablet (61.7%), followed by capsules, drops (such  
 73 as eye, ear, nasal and oral drops) , topical dosage forms (such as creams ,gels, lotions, ointments)  
 74 , injection dosage forms (such as syringe, pens, vials and ampules) , inhalers and liquid dosage  
 75 forms that were given orally ( such as syrups, solutions and suspensions).

76 The distribution of the number of dosage forms of the drugs is shown in table 2.

Table 2. Number of the dosage forms of the drugs							
Tablet	Capsule	Liquid - orally	Topical	Drops	Injections	Inhalers	Others
401	56	27	39	55	38	27	7

77  
 78 Amongst the 650 drugs, 27 drugs were available as inhalers (4.15 %). The number of different  
 79 inhalers dispensed is shown in table 3.

Table 3. Number of Inhalers in the prescriptions		
Ventolin inhaler	Seretide evohaler	Symbicort turbhaler
13	8	6

80

81 In the present study from out of 27 Inhalers, Ventolin inhalers which include Albuterol was the  
82 most prescribed (48.14 %), followed by Seretide Evohaler which includes salmeterol/fluticasone  
83 propionate (29.62%) and Symbicort Turbuhaler which includes budesonide; formoterol fumarate  
84 dihydrate (22.2 %). The same has been reported in other studies the many delivery systems are  
85 available for medications approved for asthma treatment: oral tablets, nebulizers, MDIs, and dry  
86 powder inhalers (DPIs) but Inhalers are the most common delivery system for asthma  
87 medications.

88 Ventolin is given as needed but the other inhalers are given regularly. Therefore it is rational to  
89 dispense Ventolin more than other inhalers. For the treatment of Asthma inhalers are one of the  
90 most common devices for the delivery of medications.

91 The overall use of inhalers in the prescriptions was 4.15 %. This is not consistent with the high  
92 prevalence rate of asthma. A national Saudi household survey was conducted in 2013 estimated  
93 that the self-reported clinical diagnosis of asthma to be 4.05% (19). Another survey using the  
94 European Community Respiratory Health Survey questionnaire carried out in Riyadh among a  
95 total of 2405 Saudi people aged between 20–44 years showed that the prevalence of physician-  
96 diagnosed asthma reported was 11.3% (20). Regarding COPD, the overall prevalence of COPD  
97 in Saudi Arabia is 4.2% (21).

98 It was reported in our study also the maximum number of prescriptions was albuterol. The same  
99 has been reported in another study, the Use of Albuterol inhaler is the most effective treatment  
100 for providing prompt relief from worsening asthma symptoms and is recommended for home use  
101 (22). These results may happen due to the use of some inhalers as OTC and this is wrong  
102 because the majority of these medications should be prescribed by physicians. Additionally,  
103 George Schiffman reported that the OTC medications that are available to treat bronchospasm

104 have little, if any, the effect on airway inflammation. It is not suitable to use OTC asthma drugs  
105 unless prescribed by a physician knowledgeable in the management of asthma (23)

106

## 107 **Conclusion**

108 Although there is a high prevalence of respiratory diseases, the inhalers prescribing and  
109 dispensing aren't common. This may be due to the use of some of these inhalers as OTC drugs.  
110 The role of pharmacists should be to dispense the regular medications only by prescriptions and  
111 to counsel patients about the information regarding the use of inhalers. Moreover, the  
112 pharmacists should attend continuous medical information courses regarding the appropriate use  
113 of inhalers.

## 114 **Consent Disclaimer:**

115 As per international standard or university standard, patients' consent has been collected and preserved  
116 by the authors.

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