



The Prescribing of Artificial Tears Eye Drops in the Outpatient Setting

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Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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ABSTRACT

Aim: The aim of the present study was to describe the prescribing of artificial tears eye drops in the outpatient setting in Al-Kharj.

Methodology: This was a retrospective study that was conducted at the outpatient setting in a public hospital in Al-Kharj city. The study included reviewing the outpatient electronic prescriptions.

Results: Most of the prescriptions that include artificial tears eye drops between January/2018 to June/2018 were prescribed by residents (88.06%) and about 86.57% of the prescriptions were prescribed by ophthalmology department. In the period between July/2018 to December/2018, About 94.12% of the prescribers who prescribed artificial tears eye drops were residents and about 84.56% of the prescriptions were prescribed by ophthalmology department.

Conclusion: Artificial tears were prescribed frequently in the outpatient setting and could cause adverse events for some patients. So, it is also important to increase the awareness of healthcare providers and patients about the appropriate use of artificial tears.

Keywords: Artificial tears; eye drops; outpatient; prescribing.

1. INTRODUCTION

Dry eye disease is a multifactorial disease of the ocular surface that is characterized by a loss of

homeostasis of the tear film and accompanied by ocular symptoms, in which ocular surface inflammation, tear film instability and hyperosmolarity, and damage and neurosensory

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abnormalities play etiological roles [1]. Dry eye disease is a growing health problem globally, with an overall prevalence estimated to be between 5 and 50 %, depending on the population examined and depending on the disease definition [2]. Galor et al reported that symptoms of Dry eye disease are a leading cause of visits to optometry and to ophthalmology clinics [3].

Dry eyes could be caused by aging, a medical condition, eye surgery, certain medications, or environmental factors, such as windy or smoky conditions [4] and can be treated by the use of artificial tears, also called lubricating eye drops, that provide moisture and relief for the dry eyes [5].

Artificial tears are available without a prescription and are sold in 2 categories either with preservatives or as Preservative-free eye drops [4]. Preservative-free eye drops are generally recommended if the patient has severe or moderate dry eyes or if the patient uses artificial tears more than four times a day [4].

Prescription order is an important document between the patient and the doctor. It is an order for a scientific medicine for an individual at a specific time [6]. Prescription audit is an effective tool to constitute guidelines in order to improve the patterns of utilizing medicines and to restrict the unreasonable prescribing [7-9].

The study of drugs prescribing pattern is the study of medicines prescribed by the doctors. Such studies are helpful in exploring the frequently used classes of drugs, the frequently used drugs in each class, medications prescribed by brand or generic names, duration of therapy, complete instructions in terms of frequency and time of administration, side effects, the therapeutic objective aimed by treatment, drug interactions, and side effects [10]. The aim of the present study was to describe the prescribing of artificial tears eye drops in the outpatient setting in Al-Kharj.

2. METHODOLOGY

This was a retrospective study that was conducted at the outpatient setting in a public hospital in Alkharj city. The outpatient electronic prescriptions were reviewed to evaluate the prescription patterns of prescribing artificial tears eye drops.

The outpatient electronic prescriptions that contained artificial tears eye drops during 2018 were included in the study. The data before or after 2018, the prescriptions of inpatient and emergency settings and the outpatient electronic prescriptions that didn't contain artificial tears eye drops were excluded from the study.

The data included patients' personal data, level of the prescribers, and the prescribing departments. The data were collected and analyzed using Excel and represented as percentages and numbers.

3. RESULTS AND DISCUSSION

During the first study period from January/2018 to June/2018, the pharmacists in the outpatient setting prescribed the artificial tears eye drops for 134 patients. More than half of the patients were females (51.49%), most of them had Saudi Arabia nationality (83.58%) and the age of about 60% of them were more than 50 years. The personal data of the patients who used artificial tears eye drops are shown in Table 1.

Table 2 shows the level of the prescribers. Most of the prescriptions that include artificial tears eye drops were prescribed by residents (88.06%) and only 4.48% of the prescriptions were prescribed by a consultant.

Table 3 shows the prescribing departments. About 86.57 % of the prescriptions were prescribed by ophthalmology department followed by emergency department (6.71%).

The second part was conducted in the period between July/2018 to December/2018. During this period the pharmacists in the outpatient setting prescribed the artificial tears eye drops for 136 patients. Most of them had Saudi Arabia nationality (85.29%) and more than half of the patients were females (60.29%) and the age of about 60 % of them were more than 50 years. The personal data of the patients who used artificial tears eye drops in the second period are shown in Table 4.

About 94.12% of the prescribers were residents and only one prescription was written by a specialist (0.73%). Table 5 shows the level of prescribers in the second period of study.

Table 6 shows the prescribing departments. About 84.56% of the prescriptions were prescribed by ophthalmology department followed by emergency department (6.62%).

Table 1. The personal data of the patients

Variable	Category	Number	Percentage
Gender	Male	65	48.51
	Female	69	51.49
Age	Less than 10	9	6.72
	10-19	6	4.48
	20-29	13	9.70
	30-39	12	8.96
	40-49	13	9.70
	50-59	26	19.40
	60-69	26	19.40
	70-79	15	11.19
	More than 79	14	10.45
Nationality	Saudi	112	83.58
	Non- Saudi	22	16.42

Table 2. The level of the prescribers

Prescribers Level	Number	Percentage
Specialist	10	7.46
Resident	118	88.06
Consultant	6	4.48

Table 3. The prescribing' departments

Department	Number	Percentage
Ophthalmology	116	86.57
Emergency	9	6.71
Cardiology	1	0.75
Internal Medicine	7	5.22
Nephrology	1	0.75

Table 4. The personal data of the patients who received artificial tears between July/2018 to December/2018

Variable	Category	Number	Percentage
Gender	Male	54	39.71
	Female	82	60.29
Age	Less than 10	4	2.94
	10-19	8	5.88
	20-29	9	6.62
	30-39	13	9.56
	40-49	21	15.44
	50-59	29	21.32
	60-69	25	18.38
	70-79	14	10.29
	More than 79	13	9.56
Nationality	Saudi	116	85.29
	Non- Saudi	19	14.71

Table 5. The level of the prescribers

Prescribers Level	Number	Percentage
Specialist	1	0.73
Resident	128	94.12
Consultant	7	5.15

Table 6. The prescribing' departments

Departments	Number	Percentage
Ophthalmology	115	84.56
Emergency	9	6.62
Cardiology	1	0.73
Internal Medicine	7	5.15
Nephrology	1	0.73
Neurology	2	1.47
Ear, Nose and Throat	1	0.73

More than half of the patients were females. Schaumberg et al stated that dry eye disease affects women twice as often as men and that the frequency and severity of dry eye disease symptoms were higher among women [11]. Moreover, large-scale studies of participants' in the Women's Health Study and Physicians' Health Studies estimated that 3.25 million US women, and 1.68 million men aged 50 and older are affected with dry eye disease [12,13].

Artificial tears were prescribed frequently in the outpatient setting. Most of the prescribers who prescribed artificial tears were residents and most of the prescriptions were prescribed by ophthalmology department, this is rational because artificial tears are available without a prescription and are used to provide moisture and relief for the dry eyes.

Allergan reported that more than 60 million persons worldwide are estimated to use artificial tears with a market growth rate 12% annually [14]. In contrast to that Sall et al stated that several patients are unresponsive to artificial tears therapy and that in moderate to severe dry eye disease, the use of artificial tears is decreased with the continued cyclosporine use [15]. Ahmed stated that the most commonly prescribed drugs in outpatient ophthalmology department were artificial tears, olopatadine, fusidic acid and fluorometholone [16].

Artificial tears are generally safe but should be used appropriately. Pucker et al informed that the use of Over-the-counter artificial tears may be largely safe, but not without adverse events [17]. Findlay and Reid reported that some of the

artificial tears contain preservatives such as benzalkonium chloride and that these preservatives can exacerbate dry eye disease and cause irritation [18].

4. CONCLUSION

Artificial tears were prescribed frequently in the outpatient setting. Artificial tears could cause adverse events for some patients and should be used correctly. It is also important to increase the awareness of healthcare providers and patients about the appropriate use of artificial tears.

CONSENT

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

ETHICAL APPROVAL

This study was approved by the ethical committee of ministry of health with IRB Log No: 20-131E.

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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