



The Outpatient Prescribing of Silver Sulfadiazine in Al-Kharj

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Author's contribution

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

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ABSTRACT

Aim: The aim of the present study was to describe the outpatient prescription of silver sulfadiazine in Al-Kharj.

Methodology: This study was conducted in a public hospital in Alkharj. The data were collected from the outpatient pharmacy in the hospital and includes outpatients who received silver sulfadiazine in 2018.

Results: All of the silver sulfadiazine prescriptions were prescribed for 7 days. The prescriptions were made mainly by residents (96.67%). Most of the prescriptions were prescribed by emergency department (90.00%).

Conclusion: The use of silver sulfadiazine was uncommon in Alkharj possibly due to the use of effective natural medicines. Silver sulfadiazine could lead to several adverse effects so it is important to increase the awareness about the wise use of silver sulfadiazine and other topical antibiotics.

Keywords: Antibiotic; outpatient; prescribing; silver sulfadiazine.

1. INTRODUCTION

The process of medication prescribing is not an easy process and includes numerous aspects

such as deciding that a drug is indicated, choosing the right medicine, monitoring for effectiveness and toxicity, determining the suitable dosage regimen in line with the

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patient's physiologic status, determining when the patient need health care workers' consultation, and educating patient about the predicted adverse effects [1].

Consuming medications unsuitably leads to many avoidable adverse events [1]. The misuse, underuse, or overuse of medicines may cause widespread health hazards like adverse events and antibiotic resistance; these hazards cause an increased mortality and morbidity as well as wastage of the limited resources [2].

Silver sulfadiazine belongs to sulfa antibiotics class and is used with other treatments to treat and prevent wound infections in patients with serious burns. It works by stopping bacteria growth and helps in lessening the spreading of the bacteria to the blood or to the surrounding skin [3]. Silver sulfadiazine is prescribed only with a doctor's prescription and is available as a cream dosage forms [4]. The most common side effects of this drug were pain, itching of treated skin, burning, discoloration of skin and mucous membranes, and upset stomach [5]. Frederick and Fuller reported that silver sulfadiazine cream has an enviable safety record in burn treatment and that the presence of side effects is no longer an indication to discontinue silver sulfadiazine burn wound therapy [6].

It is essential to study the prescribing patterns of different medicines because it determines the exposure of the patients to these medicines and also, has a crucial role in the management of the different diseases [7]. The study of medication prescribing pattern is a part of pharmaco-epidemiology and describes the amount, types, and determinants of medication use [8]. A previous study reported that the foremost aim of medication utilization studies is to facilitate the correct and rational medications use for different patients [9]. So, the aim of the present study was

to describe the outpatient prescribing of silver sulfadiazine in Al-Kharj.

2. METHODOLOGY

The Study was conducted in a public hospital in Alkharj. The data of patients who received silver sulfadiazine during 2018 were collected from outpatient pharmacy and excluded patients from inpatient or emergency pharmacy. Moreover, the prescriptions that didn't contain silver sulfadiazine were also excluded.

The collected data included several parts. The first part contained the gender, age and nationality of the patients, second part contained the number of patients receiving silver sulfadiazine during the different months in 2018, the third part contained data about the level of the prescribers, and the last part contained data about the departments that prescribed silver sulfadiazine.

The research was approved by the IRB committee with IRB Log No: 20-131E. The data were collected and analyzed using Excel software and represented as percentages and frequencies.

3. RESULTS AND DISCUSSION

In 2018, the outpatient pharmacy in the hospital prescribed silver sulfadiazine to 30 patients. Most of the patients were males (70.00%). The age of 26.67% of the patients was between 30 and 39 years and the age of 23.33% of them was less than 10 years old. The personal data of the patients are shown in Table 1.

More than 73 % of the prescriptions were in the first half of 2018 (Table 2).

Table 1. The personal data of the patients

Variable	Category	Number	Percentage
Gender	Female	9	30.0
	Male	21	70.00
Age	Less than 10	7	23.33
	10-19	6	20.00
	20-29	6	20.00
	30-39	8	26.67
	40-49	2	6.67
	50-59	1	3.33
Nationality	Saudi	24	80.00
	Non- Saudi	6	20.00

Table 2. The number of patients receiving silver sulfadiazine in 2018

Month	Number	Percentage
January	2	6.67
February	3	10.00
March	3	10.00
April	3	10.00
May	5	16.67
June	6	20.00
July	3	10.00
August	0	0.00
September	2	6.66
October	2	6.66
November	1	3.33
December	0	0.00

Table 3. The level of the prescribers

Prescribers Level	Number	Percentage
Specialist	1	3.33
Resident	29	96.67
Consultant	0	0.00

Table 4. Prescribing departments

Department	Number	Percentage
Plastic Surgery	3	10.00
Emergency	27	90.00
Total	30	100.00

All of the silver sulfadiazine prescriptions were for 7 days and made mainly by residents (96.67%) (Table 3).

Most of the prescriptions were made by emergency department (90.00%) (Table 4).

The use of silver sulfadiazine was uncommon in Alkharj. All of the prescribed silver sulfadiazine were prescribed by emergency department and Plastic Surgery and this is rational because it is used in the treatment of serious burns. Moreover, it was prescribed mainly by residents. In contrast to the results of our study, Herndon reported that silver sulfadiazine is used frequently and that it is the most commonly used prophylactic agent in burn patients [10]. Moreover, Isak *et al.*, stated that silver sulfadiazine and silver nitrate have been extensively used in the topical chemoprophylactic management of wounds, particularly for ulcers and burns [11]. According to Oaks *et al.*, silver sulfadiazine is the most frequently used topical antibiotic drug in patients with burn due to its tolerability, affordability, and its ease of use [12].

The reduction in the use of silver sulfadiazine could be due to the development of resistance to it by several bacterial and also due to the need to use natural agents that could be safer. Herndon reported that there have been reports of the increased resistance of *Pseudomonas aeruginosa* to silver sulfadiazine [10]. They also stated that some strains of the *Klebsiella* species have been less effectively controlled by it [10].

Additionally, the researcher studied several natural agents to be used instead of silver sulfadiazine. Jewo *et al.*, informed that several natural agents such as moist exposed burn ointment (MEBO) and honey are believed to prevent developing wounds' infections [13]. Natural agents also could promote healing without causing any of the adverse events that are caused by the chemicals [13]. Moreover, Jewo *et al.* [13] stated that MEBO is an efficacious and a suitable alternative to conventional silver-based topical treatments for treating partial-thickness burn wounds and that concerns about the toxicity of purified chemicals will continue to make people turn to complementary and alternative medicines (CAM) such as MEBO. According to Yeh *et al.* [14] low

toxicity, easier handling, cheaper costs, and availability are factors that may promote the use of MEBO and other CAM.

4. CONCLUSION

The use of silver sulfadiazine was uncommon in Alkharj. Its use is decreased due to the use of effective natural medicines such as MEBO. Although the use of silver sulfadiazine is decreased but still could lead to several adverse effects and its inappropriate use could increase the resistance of bacteria to it. It is important to increase the awareness about the wise use of silver sulfadiazine and other topical antibiotics.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the author and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the author.

CONSENT

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

ETHICAL APPROVALS

The research was approved by the IRB committee with IRB Log No: 20-131E

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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