Original Research Article

The Outpatient Prescribing Pattern of Topical LIDOCAINE in Al Seih

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ABSTRACT

Aim: The present study aimed to describe the prescribing pattern of topical lidocaine in the outpatient setting in Al Seih.

Methodology: This is a retrospective study that includes reviewing the electronic prescriptions that contained topical lidocaine among outpatients in a public hospital in Al Seih.

Results: More than 52% of the patients who received topical lidocaine were males and the age of 36.84% of them was between 30 and 39 years. Most of the patients who received topical lidocaine for 7 days (64.47%). Topical lidocaine prescriptions were written mainly by residents (96.05%). More than 55% of the topical lidocaine prescriptions were prescribed by the emergency department and 38.16% of the prescriptions were prescribed by general surgery department.

Conclusion: The present study showed that the prescribing of topical lidocaine was uncommon in Al Seih. Further studies are required to investigate the pattern and the frequency of topical lidocaine and other topical anesthetics in the outpatients setting and in other settings.

KEYWORDS: Lidocaine, local anesthetics, outpatient, prescribing, topical, use.

INTRODUCTION

Lidocaine belongs to the family of medicines that called local anesthetics [1]. It causes loss of feeling in the skin and other surrounding tissues so it is used to prevent and to manage pain from some procedures. Furthermore, it is used to manage minor burns, insect bites, and scrapes [2].

In addition to its use to stop itching and pain from certain skin conditions, lidocaine is used also to treat itching and discomfort that are caused by hemorrhoids and certain other problems of the genital/anal area and some forms of lidocaine are also used to reduce the pain or discomfort during certain medical procedures/exams [3]. This drug prevents pain by blocking the signals at the nerve endings in the patient skin and it doesn't cause unconsciousness as general anesthetics do when used for surgery [1].

Topical lidocaine is available in several dosage forms and in different concentrations that include topical film (1.8%; 4%; 5%), topical cream (3%; 4%; 5%), topical kit (4%; 5% with emollients), topical gel (0.5%; 3%; 4%), topical liquid (2.5%), topical gel with applicator (2%), topical ointment (5%), topical lotion (1%), topical spray (0.5%; 2%; 4%), and topical solution (4%) [4].

The most common side effects of topical lidocaine are itching or tingling, pale skin with red spots or mild swelling [5]. Patients who are administered local anesthetics are at increased risk of developing methemoglobinemia when concurrently exposed to some drugs that interact with several drugs such as nitroglycerin, cyclophosphamide, sulfonamides, nitrofurantoin, phenytoin, acetaminophen, sulfasalazine, in addition to the interaction with other medications [6]. Furthermore, this drug should be used as recommended by health care professionals. If the patient increases the dose or uses this drug more often or for longer than prescribed, his condition will not improve any faster, and the risk of side effects will increase [7].

There is a lack of studies about the frequency and pattern of using local anesthetics such as lidocaine. So, the present study aimed to describe the prescribing pattern of topical lidocaine in the outpatient setting in Al Seih.

METHODOLOGY

This is a retrospective study that includes reviewing the electronic prescriptions that contained topical lidocaine among outpatients in a public hospital in Al Seih. The inclusion criteria include all of the outpatient prescriptions

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that contained topical lidocaine in 2018. Exclusion criteria include the prescriptions that were written in other departments, the prescriptions that were prescribed before or after 2018, and the outpatient prescriptions that don't contain topical lidocaine.

The collected data included the personal data of patients, the number of topical lidocaine prescriptions in 2018, duration of topical lidocaine use, the level of prescribers who prescribed topical lidocaine, the prescribed dosage forms, and the departments that prescribed topical lidocaine.

The data were collected from electronic medical records as an Excel sheet and After that the descriptive data were represented as percentages and numbers. The percentages were calculated from frequencies by dividing each number by the total numbers, and after that multiplying the result by 100%.

RESULTS and DISCUSSION

During 2018, topical lidocaine was prescribed to **76** patients in the outpatient department. More than 52% of them were males and the age of 36.84% of them was between 30 and 39 years. The personal data of the patients were shown in table 1.

Table 1. The personal data of the patients.

Variable	Category	Number	Percentage
Gender	Female	36	47.37
	Male	40	52.63
Age	Less than 10	3	3.95
	10-19	3	3.95
	20-29	18	23.68
	30-39	28	36.84
	40-49	13	17.11
	50-59	9	11.84
	More than 59	2	2.63
Nationality	Saudi	63	82.89
	Non- Saudi	13	17.11

Table 2 shows the number of topical lidocaine prescriptions in 2018. More than 17% of prescriptions were prescribed in November and 13.16% of the prescriptions were prescribed in October.

Table 2. The number of topical lidocaine prescriptions in 2018.

Month	Number	Percentage

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January	7	9.21
February	3	3.95
March	7	9.21
April	4	5.26
May	6	7.89
June	6	7.89
July	7	9.21
August	5	6.58
September	3	3.95
October	10	13.16
November	13	17.11
December	5	6.58

Table 3 shows the duration of topical lidocaine use. Most of the patients who received topical lidocaine for 7 days (64.47%).

Table 3. The duration of topical lidocaine use.

Duration	**Number**	**Percentage**
2 Days	1	1.31
3 Days	7	9.21
5 Days	1	1.31
7 Days	49	64.47
10 Days	4	5.26
14 Days	3	3.95
15 Days	7	9.21
20 Days	1	1.31
30 Days	3	3.95

Table 4 shows the level of prescribers. Most of the prescriptions that contained topical lidocaine were written by residents (96.05%).

Table 4. The level of prescribers.

Prescribers Level	**Number**	**Percentage**
Specialist	1	1.31
Resident	73	96.05
Consultant	2	2.63

The prescribed dosage forms of topical lidocaine are shown in table 5. Most of the patients received topical lidocaine as a gel dosage form. Table 5 shows the prescribed dosage forms of topical lidocaine.

Table 5. Lidocaine d**osage form**

Dosage form	**Number**	**Percentage**
Gel	66	86.84

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Ointment	8	10.53
Viscous Oral	2	2.63

Table 6 shows the departments that prescribed topical lidocaine. More than 55% of the topical lidocaine prescriptions were prescribed by the emergency department and 38.16% of the prescriptions were prescribed by general surgery department.

Table 6. The departments that prescribed topical lidocaine.

Department	**Number**	**Percentage**
Emergency	42	55.26
General Surgery	29	38.16
Obstetrics & Gynecology	2	2.63
Pediatric Surgery	1	1.31
Nephrology	1	1.31
Endoscopy	1	1.31

REVIEW

The present study showed that the prescribing of topical lidocaine was uncommon in Al Seih. This could be sue to the availability of several topical anesthetics such as prilocaine, benzocaine, pramoxine, dibucaine, in addition to other topical anesthetics [8]. In contrast to that, Oni et al stated that topical anesthetics such as lidocaine are commonly applied for a variety of indications [9]. Moreover, Sarbacker reported that lidocaine combined with diclofenac is used commonly for Chronic Pain Management [10]. Ogbru informed that lidocaine and prilocaine cream is commonly used as a local anesthetic on normal intact skin and genital mucous areas, before minor procedures [11]. Scriabine reported that ever since its discovery and availability for sale and use in the late 1940s, lidocaine has become an exceptionally frequently used medicine [12]. Furthermore, Gudin and Nalamachu stated that the Interest in and use of topical analgesics has been increasing, presumably due to their potential utility for relief of chronic and acute pain [13]. Railan and Alster reported that there are several amide anesthetics used commonly include lidocaine, etidocaine, prilocaine, and bupivacaine [14].

The majority of the topical lidocaine prescriptions were prescribed by the emergency department and general surgery department. This is rational because several patients visited these departments with a minor, major surgeries, minor burns, insect bites, Injuries, or different skin conditions. Ahmed found that lidocaine is the 5th most common among the medications in general surgery outpatient department and that about 5.96 % of the patients who visited the outpatient surgery department received lidocaine gel [15]. Zhu et la informed that lidocaine is widely used in

surgery setting as a local and general anesthetic in major or minor surgeries [16]. Golzari et al revealed that lidocaine is largely used in many therapeutic approaches for different types of pain, such as visceral/central pain and renal colic in the emergency department [17].

In general, topical lidocaine is safe but still could lead to adverse effects and rarely could cause severe problems. Oni et al demonstrates that although topical anesthetics are considered safe, some individuals have unpredictably high absorption levels. They also recommended that topical anesthetics should be used under the supervision of a healthcare expert to avoid the occurrence of adverse events [9].

CONCLUSION

The present study showed that the prescribing of topical lidocaine was uncommon in Al Seih. Further studies are required to investigate the pattern and the frequency of topical lidocaine and other topical anesthetics in the outpatients setting and in other settings.

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REFERENCES

1. Mayoclinic. Lidocaine (Topical Application Route). Accessed 24 November 2021. Available: https://www.mayoclinic.org/drugs-supplements/lidocaine-topical-application-route/description/drg-20072776.
2. Clevelandclinic. Lidocaine skin cream or ointment. Accessed 24 November 2021. Available: https://my.clevelandclinic.org/health/drugs/19854-lidocaine-skin-cream-or-ointment.
3. Webmd. Lidocaine topical. Accessed 24 November 2021. Available: https://www.webmd.com/drugs/2/drug-8532-9170/lidocaine-topical/lidocaine-topical/details.
4. Drugs.com. Lidocaine topical. Accessed 24 November 2021. Available: https://www.drugs.com/mtm/lidocaine-topical.html#dosage.
5. NHS. Lidocaine skin cream. Accessed 24 November 2021. Available: https://www.nhs.uk/medicines/lidocaine-for-skin/.
6. Dailymed. Lidocaine ointment. Accessed 24 November 2021. Available: https://dailymed.nlm.nih.gov/dailymed/fda/fdaDrugXsl.cfm?setid=d1509740-f9f1-44e3-8fde-51d8683fcd87&type=display.
7. Healthlinkbc. Lidocaine Ointment - Topical, Mucous Membrane. Accessed 24 November 2021. Available: https://www.healthlinkbc.ca/medications/fdb1485.

8. Drugs.com. Topical anesthetics. Accessed 24 November 2021. Available: https://www.drugs.com/drug-class/topical-anesthetics.html.
9. Oni G, Brown S, Kenkel J. Comparison of five commonly-available, lidocaine-containing topical anesthetics and their effect on serum levels of lidocaine and its metabolite monoethylglycinexylidide (MEGX). Aesthet. Surg. J. 2012;*32*(4):495–503.
10. Uspharmacist. Topical Therapies for Chronic Pain Management: A Review of Diclofenac and Lidocaine. Accessed 24 November 2021. Available: https://www.uspharmacist.com/article/topical-therapies-for-chronic-pain-management-a-review-of-diclofenac-and-lidocaine.
11. Medicinenet. Lidocaine and prilocaine (EMLA). Accessed 24 November 2021. Available: https://www.medicinenet.com/lidocaine_wprilocaine-topical_cream/article.htm#what_is_lidocaine_w/prilocaine_cream_and_how_does_it_work_mechanism_of_action.
12. Scriabine A. Pharmaceutical Innovation: Revolutionizing Human Health. Chemical Heritage Press; 2017.
13. Gudin J, Nalamachu S. Utility of lidocaine as a topical analgesic and improvements in patch delivery systems. Postgrad Med. 2020;132(1):28-36.
14. Railan D, Alster TS. Use of topical lidocaine for cosmetic dermatologic procedures. J Drugs Dermatol. 2007;6:1104–8.
15. Ahmed NJ. Medications' Prescribing Pattern in the General Surgery Outpatient Department. J. Pharm. Res. Int. 2021;33(9):1-4.
16. Zhu J, Liu J, Shen G, Zhong T, Yu X. Comparison of Efficacy Outcomes of Lidocaine Spray, Topical Lidocaine Injection, and Lidocaine General Anesthesia in Nasal Bone Fractures Surgeries: A Randomized, Controlled Trial. Med Sci Monit. 2018;24:4386–4394.
17. Golzari SE, Soleimanpour H, Mahmoodpoor A, Safari S, Ala A. Lidocaine and pain management in the emergency department: a review article. Anesth Pain Med. 2014;4(1):e15444.

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