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Evaluation of Lactulose Prescribing Pattern in Outpatient Setting

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Author's contribution

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

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ABSTRACT

Aim: This study aims to describe the prescribing pattern of lactulose in the outpatient setting of a public hospital.
Methodology: This is a cross-sectional study that was conducted in Alkharj city. Prescription data were collected retrospectively from electronic medical records in the outpatient setting of the hospital.
Results: A total of 113 patients received lactulose in the outpatient setting of the hospital. Most of them were males (66.37%). Approximately 24% of the patients aged between 30-39 years and about 20.35% of them aged between 20-29. Most of the patients received lactulose for 7 days (70.8%). Most of the prescriptions were written by the Emergency department (84.07%).
Conclusion: Lactulose prescribing was uncommon in the present study. Nevertheless, it is important to use it appropriately to increase its efficacy and safety. The patient should take it as recommended, and the health care professionals should counsel patients about their medications.

Keywords: Lactulose; outpatient; pattern; prescribing.

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1. INTRODUCTION

Constipation is unsatisfactory defecation due to infrequent stools, difficulty passing stools or a sensation of incomplete evacuation [1]. Patients presenting with constipation may report straining and pain on defecation, hard stools, abdominal discomfort, fecal soiling, bloating, nausea or loss of appetite [2,3].

Primary constipation is caused due to colonic or anorectal dysfunction [4]. Secondary constipation is caused by lifestyle, medicines and underlying conditions [4]. In general, about 30% of people will experience constipation during their lifetime [2]. The prevalence of constipation is high and increases in patients beyond 60 years [5].

Laxatives are a type of medicine that can treat constipation [6]. They are frequently used if lifestyle changes, such as drinking plenty of fluid, increasing the amount of fiber in the diet and taking regular exercise, have not helped [6].

Lactulose is a semi-synthetic disaccharide oral liquid used as an osmotic laxative [7]. Osmotic laxatives such as macrogols and lactulose are often first-line in older patients; bulk-forming laxatives may be preferred in some cases [7]. Macrogols are often preferred to lactulose when treating older people with constipation [2,8] and less likely to cause flatulence than lactulose but are more likely to cause diarrhea in older people [9]. Lactulose is available as a powder and liquid forms. A previous study reported that more patients preferred powder compared with liquid lactulose, and the products were equally safe [10].

Lactulose is used in treating and preventing clinical portal-systemic encephalopathy by decreasing the intestinal production and absorption of ammonia [11]. It has gained popularity as a potential therapeutic agent for treating subacute clinical encephalopathy [12]. It is also a laxative for the treatment of chronic constipation [13] due to its effect on intestinal motility and to its osmotic effect [14].

Lactulose should be used appropriately; if the patient uses lactulose incorrectly, it can cause several adverse effects, and some patients may develop a severe allergic reaction [15]. Moreover, the drug should be used appropriately to increase its efficacy. If the patient used lactulose incorrectly or if he stops taking it suddenly, constipation may not improve or may get worse [15].

It is important to know the trends and the frequency of lactulose prescribing to increase the efficacy and safety of its use. Therefore, this study aims to describe the prescribing pattern of lactulose in the outpatient setting of a public hospital.

2. METHODOLOGY

This is a cross-sectional study that was conducted in Alkharj city. Alkharj is located in the southeast of the capital Riyadh. Prescription data were collected retrospectively from electronic medical records in the outpatient setting of the hospital.

The outpatients who received lactulose between 1st of July till the 31th of December 2018 were included. So, the records of patients in the inpatient and other settings and the medical records of patients who didn't receive lactulose were excluded from the study.

The data were collected and analyzed using Excel sheet 2010, and after that, the data were represented as percentages and numbers.

3. RESULTS AND DISCUSSION

A total of 113 patients received lactulose in the outpatient setting of the hospital. Most of them were males (66.37%). Approximately 24% of the patients aged between 30-39 years and about 20.35% of them aged between 20-29. Patients' data are shown in Table 1.

Most of the patients received lactulose for 7 days (70.8%) and about 15.04% of them received lactulose for 3 days. Duration of the lactulose therapy is shown in Table 2.

Most of the prescriptions were written by residents (86.73%) and about 7.08% of the prescriptions were written by consultants. The level of the prescribers is shown in Table 3.

Most of the prescriptions were written by the Emergency department (84.07%) followed by gastroenterology (3.54%), general surgery (3.54%) and internal medicine (3.54%). The prescribing departments are shown in Table 4.

Table 1. Personal data

Variable	Category	Number	Percentage
Gender	Male	75	66.37
	Female	38	33.63
Age	Less than 10	12	10.62
	10-19	12	10.62
	20-29	23	20.35
	30-39	27	23.89
	40-49	10	8.85
	50-59	12	10.62
	More than 59	17	15.04

Table 2. Duration of the lactulose therapy

Duration	Number	Percentage
1 Day	1	0.89
3 Days	17	15.04
4 Days	2	1.77
5 Days	2	1.77
7 Days	80	70.80
10 Days	1	0.89
15 Days	1	0.89
1 Month	5	4.42
2 Months	1	0.89
3 Months	3	2.65

Table 3. The level of the prescribers

Level of the prescriber	Number	Percentage
Consultant	8	7.08
Resident	98	86.73
Specialist	7	6.19

Table 4. The prescribing departments

Department	Number	Percentage
Emergency	95	84.07
Gastroenterology	4	3.54
General Surgery	4	3.54
Internal Medicine	4	3.54
Nephrology	3	2.65
Obstetrics & Gynecology	2	1.77
Pediatrics	1	0.89

Lactulose prescribing was uncommon in the present study. Aljarari et al. reported that laxatives were prescribed in about 17.6% of the total number of prescriptions studied and that bisacodyl being the most frequently laxative prescribed (59.5%) followed by lactulose (40.5 %) [16]. Another study showed that regarding the drugs that were prescribed for patients with alcoholic liver disease, the most commonly prescribed drug for treating the complications like hepatic encephalopathy and variceal bleeding were lactulose (46.9%) and propranolol (80.7%) [17].

Another study was conducted in Oman to assess the pediatric prescriptions showed that in general the most prescribed drug for the children was prednisolone (5%), followed by salbutamol 4% and lactulose 3% [18]. Aghamohammadi et al. reported several medications including ondansetron, paracetamol, pethidine, ranitidine and lactulose were prescribed commonly as adjuvant drugs in Cancer Patients [19].

Moreover, it is important to know that the patient acceptance of lactulose increases with a more favorable perceived benefit/risk profile, strongly influenced by socio-cultural factors [20]. The onset of lactulose is 24-48 hrs [21], so the patients may receive it on the first day without perceiving the drug benefit, but he should continue the use of the drug. Furthermore, the present study showed that lactulose was prescribed for patients in a different duration because the effect of the drug is different between patients and the drug should be used to achieve 2-3 soft bowel movements on a daily basis [22]. The main limitation in this study was that there was no diagnosis for the patients in the electronic outpatient prescriptions.

4. CONCLUSION

Lactulose prescribing was uncommon in the present study. Nevertheless, it is important to use it appropriately to increase its efficacy and safety. The patient should take it as recommended, and the health care professionals should counsel patients about their medications.

CONSENT

It is not applicable.

ETHICAL APPROVAL

The study was approved by the IRB ethical committee with a log number 20-131E.

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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