Original Research Article

The Use of Simethicone in a Public Healthcare Organization in Riyadh Region

ABSTRACT

Aim: Simethicone is anti-flatulence medicine that is used to relieves abdominal pain due to excessive gas in the digestive tract. The present study aimed to describe the use of simethicone in a public healthcare organization in Riyadh Region.

Methodology: This is a retrospective study that includes reviewing the outpatient electronic prescriptions of simethicone in a public healthcare organization in Riyadh Region

Results: During the study period, 113 patients received simethicone. More than 56 % of them were females and the age of 22.12% of them was between 50 and 59 years. More than 26% of the patients received simethicone for 1 week and 23.90% of them received simethicone for 1 month. Most of the prescriptions were written by residents (90.27%) and more than 57% of the prescriptions were prescribed by emergency department.

Conclusion: The present study showed that simethicone was prescribed frequently in a public healthcare organization in Riyadh Region. More studies are needed to explore the frequency of use and the appropriateness of prescribing simethicone and other anti-flatulence medicines.

Keywords: Anti-flatulence, outpatient, simethicone, use.

INTRODUCTION

Simethicone is anti-flatulence medicine that is used to relieves abdominal pain due to excessive gas in the digestive tract. It is as well given to patients undergoing upper abdominal ultrasound imaging [1]. Simethicone is a silicone compound used for the treatment of flatulence and bloating. It was approved by Food and Drug Administration in 1952 [2]. Since then, it has been researched for use as a skin protectant, for management of Helicobacter pylori, and most recently in endurance athletes to reduce

exercise-related GI symptoms [3-5]. Researchers also studied simethicone to treat infantile colic, but they didn't find it to be effective [6]. Moolla et al stated that simethicone may be a useful bowel preparation adjunct in patients unable to receive split-dose Polyethylene Glycol [7].

Simethicone functions as a non-systemic surfactant, reducing the surface tension of gas bubbles in the gastrointestinal tract. This action results in coalescence and dispersion of the gas bubbles allowing their removal from the Gastrointestinal tract as belching or flatulence [8]. Simethicone causes the gas bubbles to accumulate and therefore pass more easily either through the lower or upper gastrointestinal tract opening [8]. Simethicone doesn't appear to decrease the actual production of gas in the gastrointestinal tract [9].

Simethicone is available as an over the counter medicine that is prescribed without a prescription [10]. It is available in several dosage forms including oral liquid, oral capsule, oral suspension, chewable, and oral tablet [11]. It has a favorable safety profile as it isn't systemically absorbed and is generally safe with no known side effects [8,12] but a very serious allergic reaction to this medicine is rare [13]. Simethicone has a few drug interactions, it can reduce the absorption of thyroid medicines such as levothyroxine [13].

There was a lack in studying the use of simethicone in our region. So, the present study aimed to describe the use of simethicone in a public healthcare organization in Riyadh Region.

METHODOLOGY

This is a retrospective study that includes reviewing the outpatient electronic prescriptions of simethicone in a public healthcare organization in Riyadh Region. The inclusion criteria include outpatient prescriptions that contain simethicone in the study period and the exclusion criteria include the inpatient prescriptions in addition to the outpatient prescriptions that don't contain simethicone.

The collected data included the personal data of patients, the number of simethicone prescriptions that were prescribed during different months of the study, duration of simethicone use, the level of the prescribers who prescribed simethicone, and the departments that prescribed simethicone.

The descriptive data were collected in Excel spreadsheet and were represented as percentages and numbers.

RESULTS and DISCUSSION

During the study period, 113 patients received simethicone. More than 56 % of them were females and the age of 22.12% of them was between 50 and 59 years. Table 1 shows the personal data of the patients.

Table 1. The personal data of the patients.

Variable	Category	Number	Percentage
Gender	Female	64	56.64
	Male	49	43.36
Age	10-19	3	2.65
	20-29	22	19.47
	30-39	23	20.35
	40-49	20	17.70
	50-59	25	22.12
	60-69	12	10.62
	More than 69	8	7.08
Nationality	Saudi	88	77.88
	Non- Saudi	25	22.12

More than 22% of the prescriptions were prescribed in May. Table 2 shows the number of the prescriptions that contained simethicone during the study period.

Table 2. The number of the prescriptions that contained simethicone

Month	Number	Percentage
January	23	20.36
February	23	20.36
March	20	17.70
April	17	15.04
May	25	22.12
June	5	4.42

More than 26% of the patients received simethicone for 1 week and 23.90% of them received simethicone for 1 month. Table 3 shows the duration of simethicone use.

Table 3. Duration of simethicone use.

Duration	Number	Percentage
4 Days	1	0.88
5 Days	14	12.39
1 Week	30	26.55
10 Days	3	2.65
15 Days	1	0.88
1 Month	27	23.90
45 Days	13	11.50

2 Months	2	1.77
More than 2 Months	22	19.47

Most of the prescriptions were written by residents (90.27%). Table 4 shows the level of the prescribers who prescribed simethicone.

Table 4. The level of prescribers.

Prescribers Level	**Number**	**Percentage**
Specialist	0	0.00
Resident	102	90.27
Consultant	11	9.73

More than 57% of the prescriptions were prescribed by emergency department. Table 5 shows the departments that prescribed simethicone.

Table 5. the departments that prescribed simethicone.

Department	**Number**	**Percentage**
Internal Medicine	25	22.12
Emergency	65	57.53
Obstetrics & Gynecology	1	0.88
Nephrology	2	1.77
Gastroenterology	16	14.16
Endoscopy	3	2.65
Cardiology	1	0.88

The present study found that simethicone was prescribed frequently in a public healthcare organization in Riyadh Region. Ingold and Akhondi stated that simethicone is a frequently prescribed drug by primary care providers, internists, physician assistants, nurse practitioners, and gastroenterologists to treat bloating and flatulence [8]. Engler et al reported that simethicone is used commonly to relieve gas-related symptoms [14].

Most of the prescriptions that contained simethicone were written by residents and this is rational because it is an over the counter medication [10] and is generally safe and there are few drug interactions so it can be prescribed by residents.

Moreover, most of prescriptions that contained simethicone were prescribed by emergency, internal medicine, and gastroenterology department and this is also rational because most of the patients with gastrointestinal symptoms visit these departments.

More than half of the patients received simethicone for 1 month or more (56.64%). It is not recommended to use most of the medicines including simethicone for longer than 7-10 days [15] and if simethicone is used regularly on a daily basis for more than 2 weeks, the patient may have a medical problem that needs different treatment [16]. Bernstein and Kasich informed that initial studies used dosing of 50 mg of simethicone ten minutes before each meal and at bedtime for ten days [17].

The main limitation in the present study was that the diagnosis was not found in the outpatient records so it is difficult to know if simethicone was used appropriately and no in addition to that it is difficult to know the appropriateness of simethicone dose and duration.

CONCLUSION

The present study showed that simethicone was prescribed frequently in a public healthcare organization in Riyadh Region. More studies are needed to explore the frequency of use and the appropriateness of prescribing simethicone and other anti-flatulence medicines.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. 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 authors 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 authors.

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