Original Research Article

The Frequency of Prescribing Nicotine and Varenicline in a Public Hospital

ABSTRACT

Aim: This study was conducted to demonstrate the prescribing pattern of nicotine and varenicline in a public hospital in Alkharj.

Methodology: This is a retrospective study includes evaluating outpatient prescribing of nicotine and varenicline from 1st of January 2018 to 30th of June 2018 in a public hospital in Alkharj.

Results: All of the nicotine patch prescriptions were written by internal medicine department and all of the prescriptions were prescribed by residents. The age of more than half of them was between 30 and 39 (53.33%). All of the varenicline tablet prescriptions were written by internal medicine department. The age of about 88.23% of the patients who received varenicline tablet was more than 29 years.

Conclusion: Nicotine and varenicline prescribing was infrequent in Al-kharj. More awareness programs are needed for health care workers and for the public. Moreover, the physicians should assess if the treatment is needed or no according to the person condition.

Keywords: Nicotine, outpatient, pattern, prescribing, varenicline.

INTRODUCTION

Cigarette smoking is a major modifiable health risk factor in the United States, significantly contributing to deaths from cancer and pulmonary and cardiovascular diseases [1]. Although it is estimated that smoking-related illnesses lead to 443,000 premature deaths and almost $100 billion in lost productivity yearly [2]. Among, American adults, 22 % of men and 17.5 % of women still smokes regularly [3]. Among Saudis, about 12.1% of Saudis reported that they currently smoke tobacco, most of them are males (23.7% of males and 1.5% of females in Saudi Arabia smoke tobacco) [4].

Tobacco use can lead to tobacco dependence and several serious health problems. Quitting smoking significantly decreases the risk of developing smoking-related diseases [5]. In 2015, 68.0% of adult smokers in the United States (22.7 million) said that they wanted to quit smoking [6]. In 2018, 55.1% of adult smokers in the United States (21.5 million) said that they had made a quit attempt in the past year [7].

If the patients cannot quit smoking, they should be offered pharmacologic assistance in quitting, such as nicotine replacement therapies, varenicline, and bupropion. Use of these therapies during smoking cessation can double the rate of successful abstinence. In some patients, it is important to use more than one type of nicotine replacement therapy and combining these therapies with other treatments such as bupropion to provide additional benefit [1].

Nicotine is used to help treat addiction to or dependence on smoking cigarettes. Quitting smoking abruptly can lead to experience numerous severe effects and cravings that are called withdrawal symptoms [8]. So, products that deliver low doses of nicotine could be used to ease the quitting process and manage withdrawal symptoms [8].

Nicotine replacement can come in different forms including patches, lozenges, gum, inhalers, and nasal sprays [9]. It may cause several side effects on both the body and mind, including heightened mood, decreased appetite, increased activity in the intestines, increased heart rate, increased production of saliva and phlegm, sweating, increased blood pressure, diarrhea, nausea, increased alertness, better memory [10].

Varenicline is in a class of medicines called smoking cessation aids. It works by blocking the pleasant effects of nicotine on the brain [11]. It is the first approved nicotinic receptor partial agonist [12]. To increase the chance of success, this medicine should be used with a stop-smoking program that includes support, education, and counseling [13]. Varenicline can cause several adverse Effects to the patients. The most common adverse effects include nausea, abnormal dreams, headache, insomnia, in addition to several other less common effects [14]

It is important also to explore the pattern of using smoking cessation medications to ensure that they are used correctly. So, this study was conducted to demonstrate the prescribing pattern of nicotine and varenicline in a public hospital in Alkharj.

METHODOLOGY

This is a retrospective study includes evaluating outpatient prescribing of nicotine and varenicline from 1st of January 2018 to 30th of June 2018 in a public hospital in Alkharj that is a city in Saudi Arabia that include about 425,300 persons.

The inclusion criteria include the prescriptions that contain nicotine and varenicline during the study period and the exclusion criteria include the prescriptions before 1st of January 2018 or after 30th of June 2018 and the prescriptions that didn't contain nicotine and varenicline

The data include the age of the patients who received nicotine, the age of the patients who received varenicline, the prescribed dosage forms, the number of prescriptions that contain nicotine or varenicline during different months, and the level of prescribers who prescribed nicotine and varenicline. The data were collected and analyzed using excel sheet and the descriptive data were represented as numbers and percentages.

RESULTS and DISCUSSION

Smoking cessation medications were prescribed for 32 patients during the study. About 46.87% of them received n**icotine** patch and 53.13% of them received varenicline tablet. Table 1 show the dosage form of the smoking cessation medications that were prescribed during the study period.

Table 1. The dosage form of the smoking cessation medications.

Dosage form	**Number**	**Percentage**
Nicotine patch	15	46.87
Varenicline tablet	17	53.13
Total	32	100.00

All of the nicotine patch prescriptions were written by internal medicine department and all of the prescriptions were prescribed by residents. The age of more than half of them was between 30 and 39 (53.33%). Table 2 shows the personal data of the patients who received nicotine patch.

Table 2. The Age of the patients who received nicotine patch.

Variable	Category	Number	Percentage
Age	20-29	3	20.00
	30-39	8	53.33
	40-49	3	20.00
	More than 49	1	6.67

Table 3 shows the number of nicotine prescriptions that were prescribed during different months of the study. More than half of the prescriptions were prescribed in April (53.33%).

Table 3. The number of nicotine prescriptions that were prescribed during different months.

Month	Number	Percentage
January	1	6.67
February	2	13.33
March	0	0.00
April	8	53.33
May	4	26.66
June	0	0.00

Table 4 shows the age of the patients who received varenicline tablet. The age of about 88.23% of the patients who received varenicline tablet was more than 29 years.

Table 4. The age of the patients.

Variable	Category	Number	Percentage
Age	Less than 20	1	5.88
	20-29	1	5.88
	30-39	5	29.41
	40-49	5	29.41
	More than 49	5	29.41

All of the varenicline tablet prescriptions were written by internal medicine department. About 35.29% of the prescriptions were prescribed in February. The number of varenicline tablet prescriptions that were prescribed during different months of the study is shown in table 5.

Table 5. The number of varenicline tablet prescriptions that were prescribed during different months.

Month	Number	Percentage
January	4	23.53
February	6	35.29
March	1	5.88
April	4	23.53
May	1	5.88
June	1	5.88

Table 6 shows the level of the prescribers who prescribed varenicline tablet. About 94.12% of the prescriptions were written by residents.

Table 6. The level of the prescribers who prescribed varenicline tablet.

Prescriber level	Number	Percentage
Consultant	1	5.88
Specialist	0	0.00
Resident	16	94.12

The use of smoking cessation medications was uncommon in Al-kharj. Fiore et al stated that the existence of treatment guidelines recommends the use of a smoking cessation medication for all smokers [15]. Nonetheless, only 2.4% of clinician visits by smokers result in a prescription for a cessation medicine [16]. Babb et al informed that despite the availability of evidence-based treatments to achieve smoking cessation, less than one-third of adult cigarette smokers who try to quit use any type of cessation counseling and/or FDA-approved cessation medication [6]. Previous studies also reported that most smokers attempt to quit without using treatment, with success rates of about 7–8% [6,15,17,18]. There are several caused for the uncommon use such as the common lack of health insurance among tobacco users [19]; inadequate private and public insurance coverage of cessation treatments [20]; insufficient and cumbersome reimbursement for cessation treatments offered by physicians and hospitals [21]; insufficient promotion of cessation treatments to smokers and healthcare providers, which can contribute to low use of these treatments [21]; underfunding of state tobacco quitlines and other cessation services [22,23]; and inadequate integration of tobacco use screening and cessation interventions into routine clinical care [6].

Smoking cessation medications should be used only for some smokers because its use could cause several side effects. Ebbert et al reported that smoking cessation medications were well tolerated with comparable adverse events profiles and that most adverse events are not clinically important, and prescribers can reassure patients that those experienced will be manageable [24]. Signs of severe nicotine dependence in people who smoke include smoking more than 1 pack a day, smoking even while sick, smoking within 5 minutes of waking up, smoking to ease symptoms of withdrawal, and waking up at night to smoke [25].

Smoking cessation aids are available over the counter and on prescription in the several forms including gum, lozenges, tablets, inhalants, sprays, and skin patches [26]. About 46.87% of them received nicotine patch and 53.13% of them received varenicline tablet. Varenicline is available as tablets only but nicotine available as inhaler, sprays, patches and other forms but it is prescribed as patches only.

CONCLUSION

Nicotine and varenicline prescribing was infrequent in Al-kharj due to several causes such as the lack of awareness and insufficient promotion of cessation treatments to smokers and healthcare providers. More awareness programs are needed for health care workers and for the public. Moreover, the physicians should assess if the treatment is needed or no according to the person condition.

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.

ACKNOWLEDGEMENT

This Publication was supported by the Deanship of Scientific Research at Prince Sattam bin Abdulaziz University.

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