



## **The Outpatient Prescribing Pattern of Norethisterone in Al-Kharj**

**Nehad J. Ahmed <sup>a\*</sup>, Gamal A. Gabr <sup>b</sup> and Abeer A. El-Sherbiny <sup>c</sup>**

<sup>a</sup> *Department of Clinical Pharmacy, College of Pharmacy, Prince Sattam Bin Abdulaziz University, Al-Kharj, Saudi Arabia.*

<sup>b</sup> *Department of Pharmacology, College of Pharmacy, Prince Sattam Bin Abdulaziz University, Al-Kharj, Saudi Arabia.*

<sup>c</sup> *Department of Medical Laboratory Sciences, College of Applied Medical Sciences, Prince Sattam Bin Abdulaziz University, Al-kharj, Saudi Arabia.*

### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2021/v33i55A33828

### **Open Peer Review History:**

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/77733>

**Original Research Article**

**Received 04 October 2021**  
**Accepted 09 December 2021**  
**Published 13 December 2021**

### **ABSTRACT**

**Aim:** This study was conducted to demonstrate the prescribing pattern of norethisterone in Al-Kharj.

**Methodology:** This is a retrospective study includes evaluating outpatient prescribing of norethisterone from 1<sup>st</sup> of January 2018 to 30<sup>th</sup> of June 2018 in a public hospital in Alkharj.

**Results:** The age of about 31.03% of the patients who used norethisterone was between 40 and 49 years, the age of 24.14% of them was between 30 and 39, and the age of 24.14% of them were between 20 and 29 years. About 31.03% of the patients used norethisterone for 3 weeks and 17.24% of them used norethisterone for 10 days. Most of the prescriptions that contained norethisterone were prescribed by obstetrics and gynecology department (68.97%).

**Conclusion:** The prescribing of norethisterone was uncommon in the outpatient setting due to the availability of several alternative drugs. Further studies are needed to investigate the prescribing of norethisterone and its alternatives by the different settings.

**Keywords:** *Norethisterone; pattern; prescribing; use.*

## 1. INTRODUCTION

Norethindrone (norethisterone) is one of the frequently used medication. In the UK, more than 794 000 prescriptions are written for therapeutic (as opposed to contraceptive) use of norethisterone annually [1]. It is used on its own or in combination with estrogen derivatives and used in hormone replacement therapy, contraception [2-6] and in the treatment of hormone-mediated illnesses such as endometriosis [6]. Moreover, it can be used as a test to see if the body is producing certain female hormones [7].

Norethisterone is available as a tablet to take by mouth and is taken on different schedules that depend on the condition that is being managed and on how well norethindrone works to manage the conditions [7]. It is used at low dose for treating dysfunctional uterine bleeding, polymenorrhoea, menorrhagia, metropathia, haemorrhagia, pre-menstrual syndrome, and postponement of menstruation but is used at high dose for treating disseminated carcinoma of the breast [8].

There are several side effects that could be resulted from the use of norethindrone. The most common side effects include irregular vaginal bleeding or spotting, breast pain or swelling, headache, hair loss, stomach pain, bloating, vomiting, nausea, trouble sleeping, depressed mood, vaginal itching or discharge, and weight gain [9]. Sundström et al reported that the use of high-dose norethisterone were associated with an increased risk of venous thromboembolism [10].

To improve the prescription quality and to promote the rational use pattern, there is an important need to investigate the different factors that affect physicians' prescribing patterns. It is important to know the prescribing pattern of norethisterone to ensure that it is prescribed and

used appropriately. So, this study was conducted to demonstrate the prescribing pattern of norethisterone in Al-Kharj.

## 2. METHODOLOGY

This is a retrospective study includes evaluating outpatient prescribing of norethisterone from 1<sup>st</sup> of January 2018 to 30<sup>th</sup> 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 norethisterone during the study period and the exclusion criteria include the prescriptions before 1<sup>st</sup> of January 2018 or after 30<sup>th</sup> of June 2018 and the prescriptions that didn't contain norethisterone.

The data include personal information, prescribing months, duration of use, the level of prescribers, and the prescribing departments.

The data were collected and analyzed using excel sheet and the descriptive data were represented as frequencies and percentages.

## 3. RESULTS AND DISCUSSION

Only 29 patients received norethisterone during the study period. Most of them were Saudis (72.41%). The age of about 31.03% of the patients was between 40 and 49 years, the age of 24.14% of them was between 30 and 39, and the age of 24.14% of them were between 20 and 29 years. The personal data of the patients are shown in Table 1.

About 24.14% of the patients received norethisterone in February and 20.69% of them were prescribed in June. Number of patients received norethisterone in the different months of the study is shown in Table 2.

**Table 1. The personal data of the patients**

Variable	Category	Number	Percentage
Age	10-19	2	6.90
	20-29	7	24.14
	30-39	7	24.14
	40-49	9	31.03
	50-59	4	13.79
Nationality	Saudi	21	72.41
	Non- Saudi	8	27.59

**Table 2. Number of patients received norethisterone in the different months**

Month	Number	Percentage
January	3	10.34
February	7	24.14
March	5	17.24
April	4	13.79
May	4	13.79
June	6	20.69

About 31.03% of the patients used norethisterone for 3 weeks and 17.24% of them used norethisterone for 10 days. Duration of norethisterone use is shown in Table 3.

**Table 3. Duration of norethisterone use**

Duration	Number	Percentage
5 Days	1	3.45
1 Week	4	13.79
10 Days	5	17.24
15 Days	4	13.79
3 Weeks	9	31.03
1 Month	2	6.90
2 Months	1	3.45
More than 2 Months	3	10.34

Most of the prescriptions that contain norethisterone were written by residents (96.55%). The level of prescribers is shown in Table 4.

**Table 4. The level of prescribers**

Prescribers Level	Number	Percentage
Specialist	0	0.00
Resident	28	96.55
Consultant	1	3.45

The departments that prescribed norethisterone are shown in table 5. Most of the prescriptions that contained norethisterone were prescribed by obstetrics and gynecology department (68.97%).

**Table 5. The prescribing departments**

Department	Number	Percentage
Obstetrics & Gynecology	20	68.97
Emergency	9	31.03
Total	29	100

The use of norethisterone was uncommon during the study period. This could be due to the

availability of several alternative drugs. Similar to this result, Ahmed et al reported that regarding the prescribing of medicines in obstetrics and outpatient gynecology of a public hospital, the most commonly used medications of hormone-mediated illnesses were dydrogesterone and hydroxyprogesterone and that the use of norethisterone was uncommon [11]. Similarly, Baig et al reported that among hormonal preparations that were prescribed in the outpatient gynecology department of a tertiary care hospital, oral contraceptive pills were commonly prescribed followed by cyclical progesterone [12].

The age of more than half of the patient was more than 29 years and this is rational because norethisterone is used mainly for contraception or in the treatment of hormone-mediated illnesses. Most of the prescriptions that contained norethisterone were prescribed by obstetrics and gynecology department.

More than 31% of the patients used norethisterone for 3 weeks and 17.24% of them used norethisterone for 10 days. This is rational because for several indications it is used for 10 days such as in the treatment of dysfunctional uterine bleeding and for other indications it could be used for more than 10 days such as in its used to Postpone the menstruation; the dosage of it is one tablet three times daily, starting 3 days before the expected onset of menstruation and continuing for not longer than 10 to 14 days [11]. About 10.34% of the patients used norethisterone for more than 2 months, these patients may use it for the treatment of Endometriosis because in the treatment of Endometriosis norethisterone is used for at least 4 to 6 months [13].

#### 4. CONCLUSION

The prescribing of norethisterone was uncommon in the outpatient setting due to the availability of several alternative drugs. Further studies are needed to investigate the prescribing of norethisterone and its alternatives by the different settings.

#### CONSENT

It is not applicable.

#### ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

## ACKNOWLEDGEMENT

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

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Mansour D. Safer prescribing of therapeutic norethisterone for women at risk of venous thromboembolism. *Journal of Family Planning and Reproductive Health Care*. 2012;38:148-149.
2. HRES. Jencycla. Accessed 13 November. Available: [https://pdf.hres.ca/dpd\\_pm/00051107.PDF](https://pdf.hres.ca/dpd_pm/00051107.PDF).
3. FDA. CombiPatch. Accessed 13 November. Available: [https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2017/020870s023lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2017/020870s023lbl.pdf).
4. FDA. Femhrt. Accessed 13 November. Available: [https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2017/021065s024lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2017/021065s024lbl.pdf).
5. FDA. Lo Loestrin Fe. Accessed 13 November. Available: [https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2010/022501s000lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2010/022501s000lbl.pdf).
6. Drugbank. Norethisterone. Accessed 13 November. Available: <https://go.drugbank.com/drugs/D00717>.
7. Medlineplus. Norethindrone. Accessed 13 November. Available: <https://medlineplus.gov/druginfo/meds/a604034.html>
8. Medicines. Norethisterone. Accessed 13 November. Available: <https://www.medicines.org.uk/emc/product/1494/smpc#gref>
9. Drugs.com. Norethindrone side effects. Accessed 13 November. Available: <https://www.drugs.com/mtm/norethindrone.html#side-effects>
10. Sundström A, Seaman H, Kieler H, Alfredsson L. The risk of venous thromboembolism associated with the use of tranexamic acid and other drugs used to treat menorrhagia: a case-control study using the General Practice Research Database. *BJOG*. 2009;116:91–97.
11. Ahmed NJ. The Standard of Prescription of Medicines in Obstetrics and Outpatient Gynecology of a Public Hospital. *J. Pharm. Res. Int*. 2021;33(8):40-44.
12. MS, Baig, Bagle TR, Gadappa SN, Deshpande Sonali, and Doifode SM. Drug utilization study of gynecology OPD: In a tertiary care hospital. *IJMRHS*. 2013;2:156-163.
13. Medicines. Primolut N. Accessed 13 November. Available: <https://www.medicines.org.uk/emc/medicine/1838#gref>.

© 2021 Ahmed et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*  
The peer review history for this paper can be accessed here:  
<https://www.sdiarticle5.com/review-history/77733>