



## **Baclofen Prescribing in the Outpatient Setting in Al-KhArj**

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### **Author's contribution**

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

### **Article Information**

DOI: 10.9734/JPRI/2021/v33i47B33117

Editor(s):

(1) Dr. Aurora Martínez Romero, Juarez University, Mexico.

Reviewers:

(1) Dake Rajesh, Apollo Hospitals Kakinada, India.

(2) Laxmi Nand, Himachal Pradesh University, India.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/76129>

**Received 10 August 2021**

**Accepted 21 October 2021**

**Published 02 November 2021**

**Original Research Article**

### **ABSTRACT**

**Aim:** This study aimed to know the prescribing pattern of baclofen in the outpatient setting in Al-Kharj.

**Methodology:** This retrospective study was conducted to know the prescribing pattern of baclofen in the outpatient setting in Al-Kharj in 2018. The data were collected and analyzed using Excel and represented as frequencies and percentages.

**Results:** From January to June 2018, about 30.43% of the prescriptions were prescribed by orthopedic department, 28.99% were prescribed by emergency department and about 78.26% of the prescriptions were prescribed by residents. More than 76% of the prescriptions were prescribed by residents in the second phase of the study between July/2018 to December/2018. Moreover, about 40.71% of the prescriptions were prescribed by emergency department and about 26.43% were prescribed by orthopedic department.

**Conclusion:** Baclofen use is uncommon in our region in contrast to the global increase in the use of baclofen. It is important to increase the awareness of health care providers about the appropriate use of baclofen and they should educate the patients about its correct use.

**Keywords:** Baclofen; outpatient; pattern; prescribing; skeletal muscle relaxants.

## 1. INTRODUCTION

The goal of drug therapy is to improve the quality of life of the patients. Medication plays an essential role in drug therapy. The medication should be used in the correct way knowing what medicine is right for a patient at the appropriate dose for appropriate periods as per clinical need [1]. The study on medication prescribing is a standard process which measures health care worker's performance related to the correct use of medications. The study of medication use patterns is necessary to promote rational drug usage in developing countries [2].

Appropriate medication prescribing should be evidence-based, rational, complete, and clear process that improves the outcome of treating patients [3]. While prescribing without an appropriate indication, correct dose, route of administration, frequency or duration of treatment are all forms of inappropriate prescribing [3]. Moreover, inappropriate prescribing includes duplicate therapeutic agents and potential drug-drug interactions or adverse reactions [3].

Hospital outpatient pharmacy has a set of services provided to home care patients, ambulatory patients, hospital staff and possibly emergency department patients depending on the level of care of the organization [4]. So, outpatients don't include the patients who don't occupy beds in hospitals or other inpatient settings [4].

Baclofen belongs to a class of medications called skeletal muscle relaxants. It may be used alone or with other medications [5]. Baclofen is a prescription medication used to manage the symptoms of spasticity from multiple sclerosis, mainly for the relief of spasms and concomitant pain, muscular rigidity, and clonus [5]. Baclofen is given directly into the spinal cord (intrathecally) or by mouth (orally) [6]. It acts on the spinal cord nerves and reduces the severity and the number of muscle spasms caused by spinal cord conditions or multiple sclerosis [7]. It also improves muscle movement and relieves pain [7].

Baclofen could cause several side effects such as confusion, headache, constipation, faintness, dizziness, nausea, increased need to urinate, sweating, passing urine more often, weakness, or trouble sleeping [8]. Baclofen oral tablet is used for either long-term or short-term treatment and if the patient doesn't take it as prescribed, it comes with serious risks [9].

The patients should receive baclofen correctly to improve the therapeutic outcomes and decrease the adverse events of the drug. So continuous monitoring of baclofen prescribing is essential. This study aimed to know the prescribing pattern of baclofen in the outpatient setting in Al-Kharj.

## 2. METHODOLOGY

This retrospective study was conducted to know the prescribing pattern of baclofen in the outpatient setting in Al-Kharjin 2018. The prescriptions that contained baclofen in the outpatient setting were included in the study. The prescriptions that didn't contain baclofen and the prescriptions that were prescribed from other settings were excluded from the study.

The collected data included the personal data of the patients, the prescribing departments, the level of prescribers who prescribed baclofen between January to June 2018. In addition to, the personal data of the patients, the level of prescribers, and the prescribing departments that prescribed baclofen between July/2018 to December/2018.

The data were collected from electronic prescriptions after the study approval by IRB committee with a number of 20-131E. The data were collected and analyzed using Excel and represented as frequencies and percentages.

## 3. RESULTS AND DISCUSSION

Only 69 patients were received baclofen from January to June 2018. More than half were male patients (50.72%). About 21.74 % of them were in the age group of 40-49 and 20.29% were in the age group of 30-39 (Table 1).

About 30.43% of the prescriptions were prescribed by orthopedic department, 28.99 % were prescribed by emergency department and 21.74% were prescribed by neurosurgery department (Table 2).

About 78.26% of the prescriptions were prescribed by residents and 15.94% were prescribed by specialists (Table 3).

The second phase of the study was between July/2018 to December/2018. Baclofen was prescribed to 140 patients. More than half were male patients (53.57%) and most of them were between 30-59 years old (70.70%) (Table 4).

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

Variable	Category	Number	Percentage
Gender	Male	35	50.72
	Female	34	49.28
Age	Less than 10	4	5.80
	10-19	5	7.25
	20-29	10	14.49
	30-39	14	20.29
	40-49	15	21.74
	50-59	12	17.39
	60-69	7	10.14
	70-79	2	2.90
Nationality	Saudi	50	72.46
	Non- Saudi	19	27.54

**Table 2. The prescribing' departments**

Department	Number	Percentage
Neurosurgery	15	21.74
Emergency	20	28.99
Neurology	6	8.70
Orthopedic	21	30.43
Pediatrics	3	4.35
Rheumatology	3	4.35
Urology	1	1.44

**Table 3. The level of prescribers**

Prescribers Level	Number	Percentage
Specialist	11	15.94
Resident	54	78.26
Consultant	4	5.80

**Table 4. The personal data of the patients**

Variable	Category	Number	Percentage
Gender	Male	75	53.57
	Female	65	46.43
Age	Less than 10	2	1.43
	10-19	5	3.57
	20-29	23	16.43
	30-39	39	27.86
	40-49	30	21.42
	50-59	30	21.42
	60-69	7	5.00
	70-79	2	1.43
Nationality	More than 79	2	1.43
	Saudi	122	87.14
	Non- Saudi	18	12.86

More than 76% of the prescriptions in the second period of the study were prescribed by residents and 20% of the prescriptions were prescribed by specialists (Table 5).

About 40.71% of the prescriptions were prescribed by emergency department and about

26.43% were prescribed by orthopedic department (Table 6).

Baclofen is used as skeletal muscle relaxants, so it is rational that it was prescribed mainly emergency department and orthopedic department. Furthermore, neurology and Neuro

**Table 5. The level of prescribers**

Prescribers Level	Number	Percentage
Specialist	28	20.00
Resident	107	76.43
Consultant	5	3.57

**Table 6. The prescribing' departments**

Department	Number	Percentage
Neurology	8	5.71
Emergency	57	40.71
Cardiology	1	0.71
Internal Medicine	5	3.57
Neuro Surgery	27	19.29
Orthopedic	37	26.43
Pediatrics	2	1.43
Rheumatology	2	1.43
Urology	1	0.71

surgery prescribed more than 25% of it because it also reduces spasticity in a variety of neurological conditions. The use of baclofen was uncommon in the present study. In contrast to that, the use of it was increased worldwide due to its use in patients with alcohol use disorders.

Enserink and Rolland et al stated that the increased use of baclofen was due the heavy media coverage which led to a national demand for baclofen within the general public and among numerous practitioners [10,11]. Moreover, Franchitto et al and Villier et al suggested that baclofen use is associated with safety issues in patients with alcohol use disorders [12,13]. Moreover, Chaignot et al and Agabio et al reported that there has been a current widespread increase in the usage of baclofen in the management of alcohol use disorder [14,15]. Cheron and Kerchoved'Exaerde reported that the applications for baclofen have widened in the treatment of substance abuse disorder, mainly alcohol use disorder, with a growing rate of off-label prescriptions in Europe [16].

The inappropriate use of baclofen can lead to toxicity and lead to several symptoms including blurred vision, dizziness, convulsions, drowsiness, difficult or troubled breathing, irregular, fast or slow, or shallow breathing, loss of strength or energy, lightheadedness, unusual weak feeling, muscle pain or weakness, sleepiness or unusual drowsiness].s, pale or blue lips, fingernails, or skin, and unusually slow or troubled breathing [8]. Jamshidi et al informed that during their 13-year study period, 403 cases of baclofen toxicity were reported with a 230%

increase in annual exposures over this period [17]. Thompson et al informed that there is increasing off-label use globally of baclofen, which raises concern about potential harms [18]. Ghosh and Bhuyan stated that the prescribers must be very cautious in prescribing baclofen because of its mood altering property which may account for its abuse potentiality [19].

#### 4. CONCLUSION

In contrast to the global increase in the use of baclofen, its use is uncommon in our region. It is important to increase the awareness of health care providers about the appropriate use of baclofen by attending continuing medical education courses, lectures and conferences. Furthermore, the health care providers should educate the patients about its correct use.

#### CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

#### ETHICAL APPROVAL

We conducted our research after obtaining proper IEC approval.

#### ACKNOWLEDGEMENT

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

## COMPETING INTERESTS

Author has declared that no competing interests exist.

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Peer-review history:

The peer review history for this paper can be accessed here:

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