



The Prescribing of Glucosamine Supplements in the Outpatient Setting in Alkharj

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Aim: This study aimed to describe the prescribing and use of glucosamine supplements in Alkharj.
Methodology: This is a retrospective study that includes reviewing the electronic prescriptions of glucosamine supplements among outpatients in Alkharj.
Results: During the study period of 6 months, only 36 patients received glucosamine supplements from the outpatient department in a public hospital Alkharj. The age of more than 63% of the patients was more than 49 years. Most of the patients who received glucosamine supplements were females (75%). All of the glucosamine supplements prescriptions contained capsules for 30 days. More than 52% of the prescriptions were prescribed by specialists. More than 80% of the prescriptions were prescribed by orthopedic department and 8.3% were prescribed by rheumatology.
Conclusion: The present study showed that the use of glucosamine was uncommon in Al-Kharj. Further studies are needed to explore the frequency of using glucosamine in different settings in Alkharj.

Keywords: *Glucosamine; outpatient; supplements; usage.*

1. INTRODUCTION

Osteoarthritis (OA) is a degenerative joint disease characterised by cartilage loss, inflammation of the synovial membrane, and bone alterations [1]. Most people over 60 have some degree of OA, but it also affects people in their 20s and 30s [2]. Chondroprotective treatments like glucosamine sulphate may be more effective than nonsteroidal anti-inflammatory drugs in treating the painful symptoms of osteoarthritis [3].

Glucosamine is a naturally occurring molecule in the body that is made up of fructose and the amino acid glutamine. It is needed to produce glycosaminoglycan that is a molecule used in the formation and repair of cartilage and other body tissues [4]. Because glucosamine production declines with age, some people use glucosamine supplements to combat aging-related health issues including osteoarthritis [4].

Glucosamine is likely safe in most adults when used for several years but it can cause some side effects such as diarrhea, bloating, constipation, and nausea [5]. Moreover, it interacts with some medications; there is a major interaction with warfarin, moderate interaction with some medications for cancer (Topoisomerase II Inhibitors), minor Interactions with acetaminophen and some antidiabetic drugs [5].

Until date, there haven't been enough studies on the usefulness of glucosamine. Glucosamine supplementation appears to be as effective as ibuprofen in reducing pain, but it does not function as quickly. Glucosamine sulphate can take four to eight weeks to relieve discomfort [6]. More studies are needed to determine the benefits of glucosamine sulfate supplements for osteoarthritis of the hip, spine or hand [7]. Furthermore, researchers didn't see an improvement in inflammation or the number of painful or swollen joints [7]. Kantor et al stated that a study in over 200 people linked glucosamine supplements to a 28% and not statistically significant reduction in two specific biochemical markers of inflammation but these results were [8]. The same study found a significant reduction of these inflammatory markers for people taking chondroitin [8].

Glucosamine is frequently given as a combination with ibuprofen and chondroitin. According to the National Center for

Complementary and Integrative Health, around 2.6% of adults in the United States used supplements of chondroitin, glucosamine, or both in 2012 [9]. Glucosamine is frequently combined with chondroitin sulfate and/or ibuprofen [10].

One of the main problems with supplements is that Food and Drug Administration (FDA) do not regulate the production of these products. So, FDA do not regulate the production of glucosamine products and as a result, it is not possible to know exactly what they contain [11]. Glucosamine is currently not approved as a prescription product by the FDA, but is widely available over the counter [3]. Moreover, it should be noted that this product is a dietary supplement with no official approved dosing [12].

There is a lack of studies about the prescribing of glucosamine. Therefore, the present study aimed to describe the prescribing and use of glucosamine supplements in Alkharj.

2. METHODOLOGY

This is a retrospective study that includes reviewing the electronic prescriptions of glucosamine supplements among outpatients in Alkharj. The inclusion criteria include outpatient prescriptions that contain glucosamine supplements in the study period from 1st of January 2018 to the end of June 2018. Exclusion criteria include the prescriptions that were prescribed in other settings in addition to the outpatient prescriptions that don't contain a glucosamine supplements dosage form.

The collected data included the demographic data of patients, the number of glucosamine supplements prescriptions that were prescribed during different months of the study, the level of prescribers, and the departments that prescribed glucosamine supplements.

The data were collected and analyzed by Excel software and the descriptive data were represented as percentages and frequencies.

3. RESULTS AND DISCUSSION

During the study period of 6 months, only 36 patients received glucosamine supplements from the outpatient department in a public hospital Alkharj. The age of more than 63% of the patients was more than 49 years. Most of the patients who received glucosamine supplements were females (75%). Table 1 shows the personal data of the patients.

Table 2 shows the number of glucosamine supplements prescriptions that were prescribed during different months of the study. About 28% of the prescriptions were prescribed in February.

All of the glucosamine supplements prescriptions contained capsules for 30 days. More than 52% of the prescriptions were prescribed by specialists. Table 3 shows the level of the prescribers who prescribed glucosamine supplements.

Table 4 shows the departments that prescribed glucosamine supplements. More than 80% of the prescriptions were prescribed by orthopedic department and 8.3% were prescribed by rheumatology.

The present study showed that the use of glucosamine was uncommon in Al-Kharj. This

could be due to the availability of many alternative drugs and due to the lack of sufficient clinical studies that ensure its efficacy and safety. In contrast to this results, numerous studies showed that glucose amine is commonly prescribed. Galvin et al stated that glucosamine is frequently prescribed as a disease modulating agent in osteoarthritis [13]. Huskisson informed that two different salts of glucosamine (glucosamine sulphate and glucosamine hydrochloride) are frequently used for the treatment of osteoarthritis [14]. Ma et al reported that glucosamine supplement is frequently used in the treatment of osteoarthritis, but its effectiveness in relieving osteoarthritis and joint pain continues to be debated [15].

Table 1. The personal data of the patients

Variable	Category	Number	Percentage
Gender	Female	27	75.00
	Male	9	25.00
Age	20-29	1	2.78
	30-39	4	11.11
	40-49	8	22.22
	50-59	17	47.22
	More than 59	6	16.67
Nationality	Saudi	33	91.67
	Non- Saudi	3	8.33

Table 2. The number of glucosamine supplements prescriptions

Month	Number	Percentage
January	4	11.11
February	10	27.78
March	8	22.22
April	8	22.22
May	5	13.89
June	1	2.78

Table 3. The level of prescribers

Prescribers Level	Number	Percentage
Specialist	19	52.78
Resident	16	44.44
Consultant	1	2.78

Table 4. The departments that prescribed glucosamine supplements

Department	Number	Percentage
Orthopedic	29	80.56
Emergency	3	8.33
Infection Control	1	2.78
Rheumatology	3	8.33

Most of the patients who received glucosamine supplements were females. This is rational because osteoarthritis is more common in female patients. O'Connor stated that females are more likely than males to suffer from osteoarthritis [16]. Prieto-Alhambra et al informed that Females aged 50 to 60 years may be 3.5 times more likely to develop hand osteoarthritis than males in the same age group [17]. Losina et al reported that females are 40% more likely to develop knee osteoarthritis than males [18]. Murphy et al stated that females are 10% more likely to develop hip osteoarthritis than males [19]. Furthermore, Centers for Disease Control and Prevention informed that gender is one of the risk factors for osteoarthritis and that females are more likely to develop osteoarthritis than males, particularly after the age of 50 years [20].

More than 52% of the prescriptions were prescribed by specialists and more than 80% of the prescriptions were prescribed by orthopedic department. This is also rational because this supplement is used in managing osteoarthritis so it is prescribed commonly by orthopedic and rheumatology departments and usually written by orthopedic specialists.

4. CONCLUSION

The present study showed that the use of glucosamine was uncommon in Al-Kharj due to the lack of sufficient clinical studies that ensure its efficacy and safety. Further studies are needed to explore the frequency of using glucosamine in different settings in Alkharj.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline patients consent and ethical approval has been collected and preserved by the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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