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Awareness About Etanercept Medication in a Sample of Iraqi Patients with Psoriatic Arthritis

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ABSTRACT

Background: Etanercept is a biologic agent belongs to the Tumor Necrosis Factor Alpha Inhibitors class and used in the management of psoriatic arthritis. Patient compliance is the most common cause of non-response to treatment. The patient's knowledge and attitude towards the medication are considered the two fundamental factors that determine patient compliance.

Objectives of the study: To assess the extent of awareness in a sample of Iraqi patients with PsA about their Etanercept medication and determine the influence of socio-demographic and clinical characteristics on the level of awareness.

Methods: A cross-sectional study design was adopted for this study. The study was conducted in Rheumatology outpatient clinic in Baghdad Teaching Hospital – Medical City Complex. The study population includes adult patients (age >18 years) with PsA with any gender, diagnosed according to CASPAR criteria and treated with Etanercept medication for more than one month. A consecutive convenient sample of 80 patients was collected. A structured questionnaire was used to assess the level of awareness of the participants, the questionnaire consists of three aspects: demographic characteristics, clinical characteristics, and awareness about Etanercept

Results: A total of 33(41.25%) of the participants had good awareness about Etanercept, while 35 (43.75%) had fair (partial) awareness and 12 (15%) had poor awareness. There was no significant association between the level of awareness of the participants and their socio-demographic characteristics or clinical characteristics (P-value > 0.05).

Conclusion: There is a fair level of the awareness about Etanercept among the sample of Iraqi PsA patients.

INTRODUCTION

Psoriasis is a chronic inflammatory condition mediated by the immune system, it affects the skin and, frequently, the musculoskeletal system. On the extensor surfaces of the elbows, knees, and other places, it causes the development of long-lasting erythematous scaly plaques [1,2]. Psoriatic arthritis (PsA), a seronegative spondyloarthropathy that affects synovial joints, especially in the distal extremities, develops in about 20% of psoriasis patients. PsA can manifest in a variety of ways and is typically characterized by relapsing-remitting joint inflammation [3,4]. Globally, PsA affects about 0.1%–1% of the population. In Iraq, psoriasis affects 0.5–0.7% of individuals, though actual prevalence may be underreported due to limited data [5]. The goals of PsA treatment are to relieve symptoms, stop the disease progression, and enhance quality of life. While pharmacologic options include DMARDs, biologics, NSAIDs, and glucocorticoids, non-pharmacologic strategies include exercise, weight loss, and quitting smoking [6,7]. Biologic therapies target specific immune pathways and include TNF inhibitors, IL-17 and IL-23 antagonists, and JAK inhibitors [6]. Etanercept (TNF inhibitor) has a key pathophysiological role in psoriatic arthritis, and it is considered at the forefront of the disease management, it acts as a soluble TNF receptor and binds TNF-alpha and TNF-beta, it works by blocking the effects of TNF-alpha, which is a pro-inflammatory cytokine that becomes elevated in psoriatic arthritis, and ankylosing spondylitis [8]. Patient awareness about prescribed medications is vital for treatment success and is recognized as a key patient care indicator by WHO [9]. Knowing the drug's name, purpose, dosage, duration, and side effects are all crucial. Inadequate understanding could result in improper use, noncompliance, overdose, or treatment failure, which would ultimately impact health outcomes and waste money [10,11]. Patient comprehension is influenced by a number of factors, including personal characteristics (age, education, and socioeconomic level) and aspects of healthcare, such as professional education and communication [10]. For these reasons this study aims to determine how well-informed Iraqi psoriatic arthritis patients are about Etanercept, as adherence and the best possible treatment results depend on this information.

METHODS

STUDY DESIGN AND SETTING

A cross-sectional design with an analytic element was adopted for this study. The study was carried out at Rheumatology outpatient clinic in Baghdad Teaching Hospital – Medical City Complex in Baghdad/ Iraq.

STUDY POPULATION AND SAMPLING TECHNIQUE

The study population includes adult attendants of rheumatology outpatient clinic who are diagnosed with psoriatic arthritis according to CASPAR criteria and on Etanercept medication. A sample of 80 patients was collected over a period of five months (from 1st of february-2023 to 1st of July-2023). The participants were chosen by consecutive convenient sampling method.

INCLUSION CRITERIA

- Adult patients (age>18 years) with PsA with any gender, diagnosed according to CASPAR criteria.
- Patients who had used Etanercept medication for more than one month.

EXCLUSION CRITERIA

Patients with psychiatric problems, patients with vision problems, patients with difficulties in speech and hearing problems, and patients under the age of 18 years.

DATA COLLECTION TOOL

After evaluation of previous studies, a structured questionnaire form was developed and revised by the researcher and the supervisor. The questionnaire consists of three parts:

- Demographic characteristics.
- Clinical characteristics.
- Awareness about Etanercept was tested by using the Arabic version of the questionnaire.

Pilot testing study was done on ten participants to assess the validity of the questionnaire.

APPROVAL AND ETHICAL ISSUE

The study protocol was approved, and official permission was obtained from Iraqi Board for Medical Specializations with reference number [194 on the 16th of January 2023]. An informed consent was taken from each participant to participate in the study through his full choice after explanation of the study objectives. The data were used for the purpose of the research only.

STATISTICAL ANALYSIS

Microsoft Excel was used for data entry. The data were analysed using SPSS-27. The data presented in forms of frequency, percentage, mean and standard deviation. Chi-square test was used to evaluate the association between the study; Fisher Exact test was applied whenever applicable. P-value ≤ 0.05 was considered statistically significant.

RESULTS

Eighty participants were enrolled in the study, all of them were diagnosed with Psoriatic Arthritis. The mean age of participants was (44.38±11.4 SD) with a range of 19-75 years. Out of all the participants, 28 (35%) were in the age range of 40-49 years. There was a male predominance and represented (58.7%) of the sample. As for the educational level of the participants, the most frequent group was people with elementary school and only 2 (2.5%) participants had postgraduate degree. The most frequent occupation in the sample was (housewife) followed by (governmental employer). Regarding the residence, most of the participants live in urban areas. More than half of the participants were non-smokers while 23 (28.7%) were current smokers. The mean weight (in kilograms) of participants was 85.69±16.8 SD with a range of (56 - 127 kg). The mean height (in centimetres) was 168.9±9.2 SD with a range of (150 - 190 cm). The mean BMI (kg/m^2) was 28.57±6.01 SD with a range of (17.2 - 44.4 kg/m^2) majority of the participants were overweight and obese. **(Table.1).**

The disease duration was ranging from 6 months to 30 years with a median of 7 years, (61.25%) of the study group had a disease duration of less than 10 years. Half of the participants had symmetrical polyarticular arthritis, while only 1.25% had Arthritis mutilanus. Regarding the disease activity, 69 out of 80 participants had active disease. The (skin and/or nail) was the most domain involved while uveitis and IBD were documented in only one participant. (58.75%) of the participants did not use csDMARDs. Most of the participants did not use steroid. As for Rheumatoid factor, 75 (93.75%) of the participants had negative RF. **(Table.2).**

The participants answered 13 questions regarding awareness about Etanercept. 92.5% of the participants answered correctly about the time to take the

medicine (guideline), 75% of them answered a partially correct answer when asked about indicators of effectiveness and 47.5% of them answered incorrect answer about the adverse reactions. **(Table.3).**

There was no statistically significant correlation between the demographic variables and the level of awareness. **(Table.4).** Additionally, there was no significant correlation between the level of awareness and the clinical characteristics. **(Table.5).**

The participants who had good awareness were 33 (41.25%), while 35 (43.75%) had partial awareness and 12 (15%) had poor awareness about the drug. **(Figure.1).**

DISCUSSION

The participants in the current study had a mean age of (44.38 ± 11.4 years), with the 40–49 age group being the most common. This is comparable to a Swedish study on treatment adherence in psoriasis/psoriatic arthritis patients, which reported a mean age of 48.2 years [12]. The mean BMI of the participants was 28.57 kg/m², meaning that more than two-thirds were overweight or obese. This is consistent with the fact that obesity is linked to increased disease activity and a decreased response to TNF inhibitors in immune-mediated diseases such as RA and PsA, where a higher BMI is linked to these conditions [13]. 61% of individuals had a disease duration of less than ten years, with a mean duration of (9.2±6.8), Similar to the current findings, an Iraqi study found that 69.6% of the study sample had disease duration of less than 10 years, and the mean disease length was (9.6±7.8 years) [14].

Half of the participants had symmetrical polyarticular arthritis, and only 1.25% had arthritis mutilans. These findings are consistent with an Indian study that found 58% and 1% of patients had these types of arthritis, respectively [15].

The most common domain involved was the skin and/or nail (96% of the participants), this finding is reasonable since nail psoriasis affects 50–79% of skin psoriasis patients and up to 80% of patients with psoriatic arthritis [16].

41.25% of patients used csDMARDs and 7.5% used steroids in addition to etanercept. Obesity and overweight may be the cause of this, as they can decrease the effectiveness of anti-TNF-α treatment [17].

Regarding Etanercept awareness, 43.75% of respondents had fair awareness of etanercept, while 41.25% had good awareness. This could be related to the tertiary canter setting's facilities and skilled staff.

48.75% of participants in this study correctly answered questions about Etanercept preservation, 73.75% were aware of the administration method, and 63.75% were aware of its indications. These results are in line with a British study on patient knowledge of RA [18].

Even though patients should consider the chronic nature of the disease, only 25% of participants correctly identified the duration of treatment. Perhaps as a result of poor information recall or confusion between Etanercept and other drugs used in the management [19].

More than half (60%) of the participants answered correctly about drug interaction with other medicines or food, this result is in alignment with the result of a south-African study which revealed that about 52% of the patients had a high knowledge about drug interaction [20].

Three quarters of the participants in the current study had a fair awareness about indicators of effectiveness, while a study in Saudi Arabia showed that 89% of the patients have a positive perception towards

effectiveness and safety of their medications [21].

The majority of participants (81.25%) gave accurate answers when asked how to handle a missed dose, which probably reflects the tertiary center's medical staff's professionalism and good training since the study was conducted in a tertiary center.

Only 7.5% of individuals properly answered the question regarding the side effects of etanercept, while nearly half (47.5%) gave an incorrect response. The need for better patient education about side effects was also highlighted by a British study that revealed that only 40% of participants knew enough about the negative effects of anti-TNF medications [22]. Only 3.7% of participants were able to correctly identify contraindications for etanercept. This might be because doctors determine contraindications based on history and examination without telling patients directly, which leaves the majority of them unaware of the contraindications

The current results revealed no association between participants' sociodemographic or clinical features and awareness levels, which may be because the majority of patients rely on medical personnel to provide them with information about their medications. Similarly, a Saudi study revealed no association between drug awareness and sociodemographic characteristics [21]. While, according to an Italian meta-analysis, smoking, comorbidities, and female gender all predicted non-adherence to biologic therapy [23].

CONCLUSION

There is a fair level of the awareness about Etanercept among the sample of Iraqi PsA patients. Although only small percentage of participants were unaware about Etanercept, there are some aspects that most patients had deficient information about it like: duration of treatment, adverse reactions, contraindications, and indicators of effectiveness. The socio-demographic characteristics and clinical characteristics could not have an influence on the level of patients' awareness.

RECOMMENDATIONS

Further efforts are needed to increase the awareness level of patients about their medications, this could be done by: improvement of patient-doctor relationship, the use of written instructions in addition to the verbal instructions, regular follow up and encouragement of the patient to ask questions, and proper motivation and support.

COMPETING INTERESTS

The authors declare that there is no conflict of interest.

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TABLES

Table 1. Demographic characteristics of 80 participants with psoriatic arthritis

Demographic characteristics		No.	%
Age (years)	<30years	9	11.25
	30---39	16	20
	40---49	28	35
	50---59	18	22.5
	≥60years	9	11.25
Sex	Male	47	58.75
	Female	33	41.25
Level of education	Postgraduate	2	2.5
	College	22	27.5
	Secondary school	21	26.25
	Elementary school	30	37.5
	Illiterate	5	6.25
Marital status	Married	66	82.5
	Unmarried	9	11.25
	Divorced	1	1.25
	Widow	4	5
Occupation	Governmental employer	22	27.5
	Private employer	14	17.5
	Unemployed	16	20

	Housewife	28	35
Residence	Urban	73	91.25
	Rural	7	8.75
Smoking history	Non-smoker	44	55
	Passive smoker	5	6.25
	Ex-smoker	8	10
	Current smoker	23	28.75
Body Mass Index	Underweight	1	1.25
	Normal weight	22	27.5
	Overweight	28	35
	Obese	29	36.25

Table 2. Clinical characteristics of 80 participants with psoriatic arthritis

Disease characteristics		**No.**	**%**
Disease duration (In years)	<10	49	61.25
	10---19	20	25
	20---29	10	12.5
	≥30	1	1.25
Type of arthritis	Symmetrical polyarticular	40	50
	Asymmetrical oligoarticular	25	31.25
	Spondylitis with or without sacroiliitis	10	12.5
	Distal interphalangeal arthropathy	4	5
	Arthritis mutilanus	1	1.25
Disease activity according to DAPSA*	Remission	4	5
	Low activity	34	42.5
	Moderate activity	27	33.75
	High activity	9	11.25
Disease activity according to BASDAI**	Active	19	23.75
	Inactive	17	21.25
Domain	Skin and/or nail	77	96.2
	Enthesis	38	47.5
	Dactylitis	11	13.7
	Inflammatory bowel disease	1	1.25
	Uveitis	1	1.25
csDMARDs*** use	Yes	33	41.25
	No	47	58.75
Steroid use	Yes	6	7.5
	No	74	92.5
Rheumatoid factor	Positive	5	6.25
	Negative	75	93.75

Table 3. Distribution of answers to awareness questionnaire about Etanercept in psoriatic

Information	Correct n (%)	Partial correct n (%)	Incorrect n (%)
Indication	51 (63.75)	24 (30)	5 (6.25)
Dosage	48 (60)	24 (30)	8 (10)
Guideline	74 (92.5)	1 (1.25)	5 (6.25)
Duration of treatment	20 (25)	39 (48.75)	21 (26.25)
Method of administration	59 (73.75)	19 (23.75)	2 (2.5)
Precautions	14 (17.5)	45 (56.25)	21 (26.25)
Adverse reactions	6 (7.5)	36 (45)	38 (47.5)
Contraindications	3 (3.75)	52 (65)	25 (31.25)
Indicators of effectiveness	19 (23.75)	60 (75)	1 (1.25)
Interaction	48 (60)	25 (31.25)	7 (8.75)
Preservation	39 (48.75)	34 (42.5)	7 (8.75)
Methods of monitoring	61 (76.25)	10 (12.5)	9 (11.25)
Missing dose	65 (81.25)	2 (2.5)	13 (16.25)

Table 4. Distribution of participants' demographic characteristics by awareness level

(n=80)		Level of awareness						
		Poor		Fair		Good		P value
		No	%	No	%	No	%	
Age (years)	<30years	1	1.25	3	3.75	5	6.25	0.439
	30---39	3	3.75	11	13.75	2	2.5	
	40---49	3	3.75	13	16.25	12	15	
	50---59	2	2.5	6	7.5	10	12.5	
	≥60years	1	1.25	4	5	4	5	
Sex	Male	5	6.25	21	26.25	21	26.25	0.704
	Female	5	6.25	16	20	12	15	
Level of education	Postgraduate degree	0	0	1	1.25	1	1.25	0.075
	College degree	1	1.25	10	12.5	11	13.75	
	Secondary school	1	1.25	7	8.75	13	16.25	
	Elementary school	6	7.5	16	20	8	10	
	Illiterate	2	2.5	3	3.75	0	0	
Marital status	Married	9	11.25	28	35	29	36.25	0.710
	Unmarried	1	1.25	6	7.5	2	2.5	
	Divorced	0	0	1	1.25	0	0	
	Widow	0	0	2	2.5	2	2.5	
Occupation	Government employer	3	3.75	9	11.25	10	12.5	0.544
	Private employer	0	0	6	7.5	8	10	
	Unemployed	2	2.5	7	8.75	7	8.75	
	Housewife	5	6.25	15	18.75	8	10	
Residence	Urban	9	11.25	35	43.75	29	36.25	0.604
	Rural	1	1.25	2	2.5	4	5	
Smoking history	Current smoker	3	3.75	14	17.5	6	7.5	0.165
	Ex-smoker	2	2.5	3	3.75	3	3.75	
	Passive smoker	2	2.5	1	1.25	2	2.5	
	Non-smoker	3	3.75	19	23.75	22	27.5	
BMI (kg/m2)	Underweight	0	0	0	0	1	1.25	0.502
	Normal weight	4	5	12	15	5	6.25	
	Overweight	3	3.75	13	16.25	13	16.25	
	Obese	4	5	12	15	13	16.25	
Significant difference between percentages using Pearson Chi-square test (χ^2-test) at 0.05 level.								

Table 5. distribution of participants' clinical characteristics by the awareness level

(n=80)		Level of awareness						P value
		Poor		Fair (partial)		Good		
		No	%	No	%	No	%	
Disease duration (years)	<10years	8	10	23	28.75	18	6.25	0.456
	10---19	0	0	10	12.5	10	12.5	
	20---29	2	2.5	4	5	4	5	
	≥30	0	0	0	0	1	1.25	
Disease activity	Active	8	10	33	41.25	28	35	0.721
	Inactive	2	2.5	4	5	5	6.25	
Type of arthritis	Axial	1	1.25	6	7.5	3	3.75	0.646
	Peripheral	9	11.25	31	38.75	30	37.5	
csDMARDs* use	Yes	4	5	17	21.25	12	15	0.716
	No	10	12.5	27	33.75	10	12.5	
Steroid use	Yes	1	1.25	4	5	1	1.25	0.444
	No	9	11.25	33	41.25	32	40	
Rheumatoid factor	Positive	0	0	2	2.5	3	3.75	0.558
	Negative	10	12.5	35	43.75	30	37.5	
Domains involved	Single	5	6.25	14	17.5	18	22.5	0.346
	Multiple	9	11.25	23	28.75	11	13.75	
Significant difference between percentages using Pearson Chi-square test (χ^2-test) at 0.05 level.								
* Conventional synthetic disease modifying antirheumatic drugs								

FIGURES

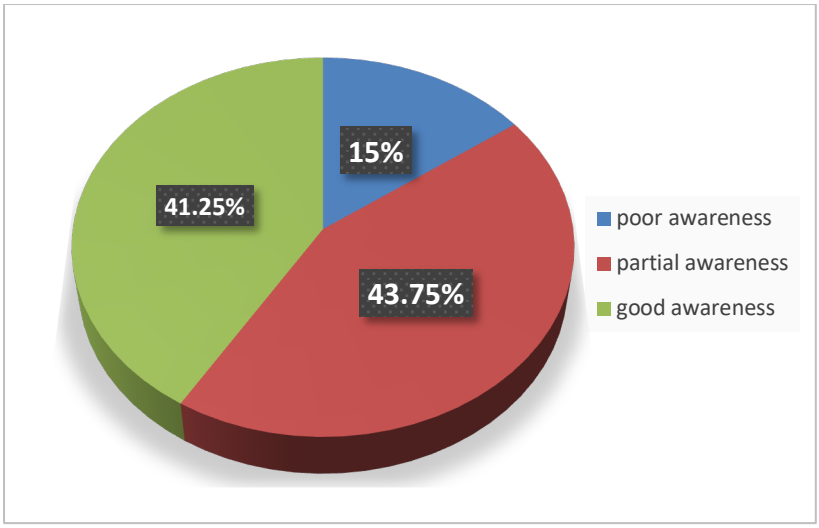

Figure 1. Level of awareness of the participants