

Information and practice of self administration about injection of Deferoxamine among adolescent thalassemia patients in al-Najef city

Rehab Lafta Mohammad¹, Farah Sadiq Abed Hashem²

¹M.Sc, University of Kufa, Faculty of Nursing, Iraq, Email: rehabl.aldehadehawi@uokufa.edu.iq

²M.Sc, University of Kufa, Faculty of Nursing, Iraq, Email: farahs.almusawi@uokufa.edu.iq

Corresponding author: Rehab Lafta Mohammad, Email: rehabl.aldehadehawi@uokufa.edu.iq

Abstract

A non-probability (Convenience) sample of (100) adolescent patients with major, were included in the present study. The data were collected through the utilization of the developed questionnaire which consists 4 parts: Demographic characteristics, Information regarding Thalassemia, Information regarding Deferoxamine, self injection of Deferoxamine (practice). The study was carried out at A-Zahraa Teach Ling Hospital in AL-Najaf City, 1/12/2018 – 1/4/2019, to assess Knowledge and practice of self administration about injection of Deferoxamine among adolescent thalassemia patients in al-Najef city and to find out the association between Sociodemographic characteristics and Knowledge and practice of self administration about injection of Deferoxamine. The present study findings designated that a. age group (16-18) years more frequency in this study. Most study sample in rural area, and secondary school. The overall assessment of studied domains is intermediate. The study indicates that there is a significant association between demographic data and practice except (gender, occupation of mother, type and number of family, residency). The study indicates that there is a significant association between demographic data and knowledge except gender. The researcher recommends Confirming on thalassemia teenager to have appropriate information about injection of Deferoxamine and major thalassemia care to avoid health problems during life of patient. Educational programs should be emphasized to adolescent thalassemia teenager for increasing their knowledge and interest about injection of Deferoxamine. Further studies should be conducted with a larger sample (national level) including both rural and urban populations.

Keywords: Knowledge and practice, self administration, adolescent thalassemia patients

Introduction

Major thalassemia is considered worldwide problems the dire disease also known as beta thalassemia. The clinical picture of this form of anemia was first described in 1925 by the pediatrician Thomas Benton Cooley. Other names for the disease are Cooley's anemia and Mediterranean anemia (1). Patients born with diseases requiring blood transfusions at birth begin to develop heart problems in their teens. Adolescent patients that require transfusions can begin experiencing heart problems after 100-200 units of backed red blood cells. A subcutaneous infusion, typically 8–12 hr per day, 5–7 days per week, and associated with poor adherence in some patients. Adherence is essential to decrease the risk of complications and mortality due to iron overload in transfused thalassemia patients (2). Patients with thalassemia major must be treated with life-long blood transfusions. Evidence suggests that patients with more knowledge/information about their illnesses adhere more readily to treatment schedules. However, there has been little evaluation of knowledge and treatment adherence in thalassemia major patients (3). Deferoxamine (Deferral) is a drug that binds to iron and allows it to be excreted from the body. It is the only effective way to remove iron from patients who have been overloaded with iron because of multiple transfusions. Previous studies have lead researchers to believe that Deferoxamine, when given as an injection under the skin (subcutaneous), can be delay or prevent heart complications. Thalassemia is considered an important public health problem worldwide, especially in developing and poor countries. Although several advanced techniques have been developed for prevention of thalassemia in the recent years, many adolescents and youths are still living with this disease. Independence from parents, decisions about high-risk behaviors, uncovering the identity, and adapting to mental and physical effects of the disease occur together in adolescents (4). Thalassemia major is the most common hereditary anemia in Iraq. Thalassemia major patients require lifelong care and suffer much pain during self-care. Knowledge of the nature, meaning, and impact of suffering from the perspective of patients is needed to determine which interventions are helpful. This study was designed to understand the knowledge and experience of self administrations of Deferoxamine in adolescent patients with thalassemia (4). Thalassemia major has become a public health problem worldwide, particularly in developing and poor countries, while the role of

educating for the patient and community has not been considered enough in patients' care especially in adolescent patient .Deferoxamine is injected subcutaneously using an injection pump at a rate of 20–60 mg/kg of body weight usually over 8- to 12-hour period, and 3 to 5 times a week (5).

Methods

A descriptive study was carried out through the present study in order to achieve the early stated objectives. The study was began from 1/12/2018 – 1/4/2019. The study is conducted in Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate / Al-Zahrta Teaching Hospital (blood disease center). A non-probability (purposive) sample of (100) patients with major thalassemia, were included in the present study.

Results

Table (1): The observed frequencies and percentages of patients' groups according to socio-demographic data

Variables		Freq.	%
age (Years)	<= 14	27	27.0%
	15 - 16	11	11.0%
	17 - 18	34	34.0%
	19 and more	28	28.0%
Gender	Male	51	51.0%
	Female	49	49.0%
level of patient education	Don't read & write	6	6.0%
	Read & write	17	17.0%
	Primary School	35	35.0%
	Secondary School	38	38.0%
	Preparatory School	0	0.0%
	Institute graduate	4	4.0%
	college graduate	0	0.0%
	postgraduate	0	0.0%
level of mother education	Don't read & write	16	16.0%
	Read & write	11	11.0%
	Primary School	48	48.0%
	Secondary School	5	5.0%
	Preparatory School	0	0.0%
	Institute graduate	11	11.0%
	college graduate	9	9.0%
	postgraduate	0	0.0%
Job of mother	high job	14	14.0%
	low job	25	25.0%
	Jobless	61	61.0%
level of father education	Don't read & write	9	9.0%
	Read & write	14	14.0%
	Primary School	35	35.0%
	Secondary School	9	9.0%
	Preparatory School	5	5.0%
	Institute graduate	14	14.0%
	college graduate	14	14.0%
	postgraduate	0	0.0%
Job of father	high job	9	9.0%
	low job	37	37.0%
	Jobless	54	54.0%
no. of family	<= 5	47	47.0%
	6 - 7	30	30.0%
	8 - 10	17	17.0%
	11 and more	6	6.0%
type of family	Nuclear	70	70.0%
	Extended	30	30.0%
Residence	Urban	49	49.0%
	Rural	51	51.0%
Total		100	100%

Table (3-1) shows that (34%) of study sample at group (17-18), and most of them were male (51%). In regarding to the patients residency, the results indicate that the majority of study sample (51 %) were from rural area. In addition, the study results indicate that (64.4 %) of patients wit were exhibit Satisfied to some extent in related to socio-economic status. Also the study results indicate that the high percentage (38%) of level of patient education (Secondary School). Regarding to the level of mother education (48.0%) (Primary

School), marital statuses the study results indicate that the majority study sample was married. Furthermore, the study results indicate that Job of mother (61.0%) and level of father education are Primary School (35.0%), Job of father (54.0%), about (70.0%) are nuclear family.

Table (2): Overall assessment of studied domains

Variables		Freq.	%	M.S	Assess.
General information about thalassemia	Poor	53	53.0%	1.75	Intermediate
	Moderate	25	25.0%		
	Good	22	22.0%		
General information about Deferral	Poor	54	54.0%	1.68	Intermediate
	Moderate	26	26.0%		
	Good	20	20.0%		
Deferral taken skills	Poor	62	62.0%	1.78	Intermediate
	Moderate	4	4.0%		
	Good	34	34.0%		

M.S: Mean of score, (mean of score \leq 1.6: Poor, mean of score: 1.7-2.3: Intermediate, mean of score 2.4 and more: Good). Table (2) show that about most study sample about knowledge and practice are intermediate.

Table (3): Relationship between studied domains and demographic and clinical data

		General information about thalassemia	General information about Deferral	Deferral taken skills
age (Years)	Chi-square	86.604	66.350	67.477
	df	6	6	6
	Sig.	.000	.000	.000
Gender	Chi-square	9.152	12.578	4.542
	df	2	2	2
	Sig.	.010	.002	.103
level of patient education	Chi-square	87.502	91.227	64.555
	df	8	8	8
	Sig.	.000	.000	.000
level of mother education	Chi-square	58.921	33.562	71.157
	df	10	10	10
	Sig.	.000	.000	.000
acubation of mother	Chi-square	27.330	24.367	3.861
	df	4	4	4
	Sig.	.000	.000	.425
level of father education	Chi-square	83.683	73.177	75.300
	df	12	12	12
	Sig.	.000	.000	.000
acubation of father	Chi-square	30.124	25.967	68.175
	df	4	4	4
	Sig.	.000	.000	.000
no. of family	Chi-square	27.913	30.544	18.548
	df	6	6	6
	Sig.	.000	.000	.005
type of family	Chi-square	23.123	4.610	11.412
	df	2	2	2
	Sig.	.000	.100	.003
Residence	Chi-square	15.314	26.176	5.013
	df	2	2	2
	Sig.	.000	.000	.082
1. family history of thalassemia	Chi-square	2.605	2.298	.380
	df	2	2	2
	Sig.	.272	.317	.827
2. age at first diagnosis	Chi-square	34.849	56.244	36.849
	df	6	6	6
	Sig.	.000	.000	.000
3. sechadual of blood transfusion	Chi-square	11.288	26.547	6.171
	df	4	4	4
	Sig.	.024	.000	.187
4. value of fertittine	Chi-square	61.263	66.231	53.155
	df	8	8	8

	Sig.	.000	.000	.000
5. type of drug	-----			
6. Complications of thalassemia	Chi-square	30.785	41.048	76.167
	df	10	10	10
	Sig.	.001	.000	.000

According to the above table, the result of the study represent that there is high significant between all items and their demographic data at P- value less than (0.05), accept (Gender with skills, Acubation of mother with skills, sechadual of blood.

Discussion

Throughout the course of the present study, table (1) refers to statistical distribution of the observed frequencies, percentage for some related demographic variable characteristics for the study sample. According to the patient's age/years, the majority of study samples are within 17-18. This result is supported with (6). Their result indicated that young thalassemia patient under age 18 years old is a dominant age. Concerning the patient education, the present study indicates that the highest percentage of the study is secondary school. This result is in disagreement with (7), who mentions effects of the disease on different life aspects whether physical, emotional, social or educational. In regard to parent education and occupation, the highest percentage is housewives with low education. This result is disagreement by (7). The present study shows that majority of Adolescent thalassemia patient are intermediate assessment about knowledge and practice for injection of Deferoxamine, this study supported by (8), in their study they mentioned that thalassemia teenager under 19 years old are less likely to be manage themselves. This reveals that teenage thalassemia patient less information about Deferoxamine injection. The result of the present study reveals that a high significant relationship between Socio-demographic data and general information about thalassemia: (Age, Education level of patient, Occupation and level of education for mother and father, Residence, Type of family, number of family). These results are indicating that knowlege was detected in young patient and significant relationship between educational level of patient and knowledge about thalassemia (9). The occupation and level of education of patient parent as low job and low level of education is dependent factor that interfere with knowledge offspring (10). In addition the relationship between residency (rural) and knowledge in this study they stated that Incidence of knowledge was significantly higher in rural, but type and number of family not effect on knowledge of patient. The result of the present study reveals that a high significant relationship between Socio-demographic data and practice about injection of Deferoxamine: (Age, Education level of patient, Occupation of father and level of education for mother and father), the study results supported by many previous studies such as (11).

Conclusion

According to the present study findings, the researcher can mention the following conclusions:

- Age group (16-18) years more frequency in this study.
- Most study samples in rural area, and secondary school and also most the parent of patients with low educational level and job.
- The overall assessment of studied domains is intermediate.
- The study indicates that are a significant association between demographic data and practice except (gender, occupation of mother, type and number of family, residency).
- The study indicates that there is a significant association between demographic data and knowledge except gender.

Recommendations

Based on the study results discussion and conclusions the study recommended that:

- Confirming on thalassemia teenager to have appropriate information about injection of Deferoxamine thalassemia care to avoid health problems during life of patient.
- Educational programs should be emphasized to adolescent thalassemia teenager for increasing their knowledge and interest about injection of Deferoxamine.
- Further studies should be conduction with a larger sample (national level) including both rural and urban populations.

References

- (1) William, C., Thalassemia major, MedicineNet, 2018.
- (2) Felicia: Elliott ,V.; Dru ,H.; Zahra, P.; Lauren, M.; Amy, S.; Janet, K.; Alexis, A.; Thompson; John ,P.; Thomas, C.; Patricia, J.; Giardina; Nancy O.; Robert, Y.; Ellis, J. Iron Chelation Adherence to

Deferoxamine and Deferasirox in Thalassemia, PMC4599708, 2015.Hemoglobin. 2019 May 16;1-5. doi: <http://www.bloodjournal.org>.

- (3) Ya-Ling Lee, Disease knowledge and treatment adherence among patients with thalassemia major and their mothers in Taiwan School of Nursing, 2009.
- (4) Najmeh, R.; Maryam, R.; Faezeh, J.; Ahmad ,R.; Niloofar, M.; Somayeh, H. , Investigating Challenges Facing Self-Management Empowerment Education in Adolescents and Youths with Major Thalassemia, undishapur Journal of Chronic Disease Care: 2014, 3 (4); e23366.
- (5) Afzal, S., Fardin, A., Abbas, E., Musab, G., the Effect of Partnership Care Model on Mental Health of Patients with Thalassemia Major, Depression Research and Treatment, 2017.
- (6) Nirmish, R., Increased Prevalence of Thalassemia in Young patient.2010.
- (7) Mikael, N., Allawi N., Factors affecting quality of life in children and adolescents with thalassemia in Iraqi Kurdistan, Saudi 2018 Aug; 39(8): 799–807.2018.
- (8) Treadwell, M., Weissman, L, Improving adherence with Deferoxamine regimens for patients receiving chronic transfusion therapy, MID: **11206966**, DOI: [10.1016/s0037-1963\(01\)90064-2](https://doi.org/10.1016/s0037-1963(01)90064-2), 2001.
- (9) Zahamir, El-kazaz, Khahil, Elmazahy, Assessment of thalassemia children knowledge about thalassemia and iron chelation therapy, Port said scientific journal of nursing vol6,No3,December2019,special issue.
- (10) Yousif Abdulmuhsinsalih, Assessment of the thalassemia patient's parents toward thalassemia in Kirkuk city, Mosul. Journal of nursing, vol.2, No.2, 2014.
- (11) Chin; Abd Hamid; Gunasagaran ; Amir; John; Azmi; Mangantig ,Demographic and Socioeconomic Profile of Transfusion Dependent Beta-Thalassemia Major Patients in Sabah, Malaysian Journal of Medicine and Health Sciences (eISSN 2636-9346), Mal J Med Health Sci 15(SUPP9): 102-108, Dec 2019.