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Enuresis at Kerbalaa Training Hospital from 2016 to 2020

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Abstract

Background: Nocturnal enuresis in thalasemic patients is one of psychosocial problem that presented to us at Kerbalaa training hospital.

Aim: To evaluate the type of enuresis, gender predominance and associated certain predisposing factors hemoglobinopathies in Karbala training hospital for pediatrics.

Method: Across sectional study include sixty patients with thalassemia and sickle thalassemia from 400 patients registered in Karbala training hospital at age of 5-14 yrs. and had enuresis. Medical history, physical examination, urinalysis and renal ultrasound was evaluated.

Results: The percentage of primary enuresis in thalassemic patients were 83.33%, the percentage of male patients were 67.2%, 75% had family history of enuresis. Just 13% had urinary tract infection and 96.6% with normal renal ultrasound.

Conclusion: The percentage of primary to secondary nocturnal enuresis in thalassemic patient were similar to that of normal populations. The percentage of the males and family history of nocturnal enuresis in enuretic thalassemic patients were more than that of normal population.

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Introduction

Nocturnal enuresis refers to involuntary voiding at night after 5 yrs. [1]. By 5 years of age, 81-85% are continent at night [2], It maybe primary or secondary; The primary eneuresis mean nocturnal urinary control never achieved, estimated 75-90% of children with enuresis. Secondary eneuresis 10-25% [3]. The child was dry at night for at least a few months and then enuresis developed. About 60% of children with nocturnal enuresis are male. Family history is positive in fifty percent of cases. Primary nocturnal enuresis may be polygenetic, its frequency among adults is <1% [4].

Hemoglobinopathies: abnormalities in 2 pairs of globin chains, over 1000 different mutations of the globin chains of the human hemoglobin molecules have been discovered [5]. Thalassemia refers to a spectrum of diseases characterized by reduced or absent production of one or more globin chains [6]. The thalassemia is inherited disorders of hemoglobin (Hb) synthesis. Their clinical severity widely varies, ranging from asymptomatic forms to severe [7].

Classification of thalassemia:

In clinical practice, the most important types affect either α- or β-chain synthesis.

Common forms of β-thalassemia are as follows:

Silent carrier β-thalassemia: Patients are asymptomatic.

- B-Thalassemia trait: Patients have mild anemia.
- Thalassemia intermedia: Patients have anemia of intermediate severity.
- B-thalassemia associated with β-chain structural variants: The most significant condition in this group of thalassemic syndromes is the Hb E/β thalassemia.
- Thalassemia major (Cooley anemia): This condition is characterized by transfusion-dependent anemia.

Common forms of α-thalassemia are as follows:

- Silent carrier α-thalassemia.
- Thalassemia trait: Characterized by mild anemia.
- Hb H disease: Represents α-thalassemia intermedia.
- Thalassemia major: Results in the severe form [8].

After meticulous searching we cannot find a published article concern with nocturnal enuresis in patients with thalassemia in hereditary blood disease centers, so we try to focus on this subject.

Patients and Methods

400 hemoglobinopathies patients from 5-14 years registered at Karbala teaching hospital for children from September 2018 to April 2020. From which 250 patient diagnosed as thalassemia major on regular blood transfusion every average 3 weeks, 59 patients have thalassemia intermedia, 91 patients have sickle thalassemia syndrome. Only 60 patients were conducted in the study. Other types

of hemoglobinopathies with or without other chronic illness were excluded from the study.

History from all patients and their parents were taken including onset of voiding control, night wet, history of chronic diseases, diuretic drug ingestion, family history of enuresis. After routine physical examination; specific investigation for enuretic patients including general urine examination, urine culture and abdominal ultrasound.

By using Statistical Package for the Social Sciences 21 the association between different types of thalassemia and enuresis evaluated by P value (significant when P>0.05).

Results

Primary enuresis occurs in 50 (83.3%) of 60 patients, 45 (83.33%) in thalassemia major. Secondary enuresis in 9 (16.66%) of 60 patients, 9 (16.66%) thalassemia major as shown in table 1:

Males in thalassemia major, thalassemia intermediate and Sickle thalassemia have enuresis 40 (67.2%) and females 20 (32.8%) as shown in table 2:

Family history of enuresis positive 46 (75%) from 60 patients as in table 3.

Urinary tract infection in patient reveal no significant finding 52 (86.6%) as shown in table 4.

Renal ultrasound was normal in 60 (96.6%) of patients, as shown in table 5.

Discussion

The result of Primary enuresis and secondary enuresis in thalassemia major, thalassemia intermediate and Sickle thalassemia were parallel to a cross sectional study performed with Kliegman RM, et al. (2007) [3].

Table 1: Primary and secondary enuresis.

			Thalassemia		Sickle thalassemia	Total
			Thalassemia major	Thalassemia intermediate		
Enuresis	**Primary**	**Count**	45	2	3	50
		% within Thalassemia	83.33%	100%	75%	83.33%
	Secondary	**Count**	9	0	1	10
		% within Thalassemia	16.66.0%	0%	25%	16.66%
Total		**Count**	54	2	4	60
		% within Thalassemia	100.0%	100.0%	100.0%	100.0%

P value = 0.3

Table 2: Gender of patients with thalassemia and sickle thalassemia.

			Thalassemia		Sickle thalassemia	Total
			Thalassemia major	Thalassemia intermediate		
Gender	**Male**	**Count**	35	2	4	40
		% within Thalassemia	64.8%	100.0%	100 %	67.2%
	Female	**Count**	19	0	0	20
		% within Thalassemia	35.18%	0.0%	0.0%	32.8%
Total		**Count**	54	2	4	60

P value = 0.4

Table 3: Family history of nocturnal enuresis in thalassemia and sickle thalassemia.

			Thalassemia		Sickle thalassemia	Total
			Thalassemia major	Thalassemia intermediate		
Family history	**Positive**	**Count**	44	0	1	45
		% within Thalassemia	81.14%	0.0%	40.0%	75%
	Negative	**Count**	10	2	3	15
		% within Thalassemia	18.51%	100%	60.0%	25%
Total		**Count**	54	2	4	60
		% within Thalassemia	100.0%	100.0%	100.0%	100.0%

P value = 0.03

Table 4: No significant finding for Urinary tract infection.

			Thalassemia		Sickle thalassemia	Total
			Thalassemia major	Thalassemia intermediate		
Family history	**Positive**	**Count**	8	0	0	8
		% within Thalassemia	14.8%	0.0%	0.0%	13.33%
	Negative	**Count**	46	2	4	52
		% within Thalassemia	85.1%	100.0%	100.0%	86.66%
Total		**Count**	54	2	4	60
		% within Thalassemia	100.0%	100.0%	100.0%	100.0%

P value = 0.5

Table 5: Renal ultrasound findings of patients.

			Thalassemia		Sickle thalassemia	Total
			Thalassemia major	Thalassemia intermediate		
Family history	**Positive**	**Count**	53	2	3	58
		% within Thalassemia	98.14%	100.0%	75%	96.6%
	Negative	**Count**	1	0	1	2
		% within Thalassemia	1.85%	0.0%	25%	3.33%
Total		**Count**	54	2	4	60
		% within Thalassemia	100.0%	100.0%	100.0%	100.0%

P value = 0.9

The result of enuretic males and female patient in thalassemic and sickle thalassemia, was similar to that of Saleh AA, et al. (2015) [8].

Also, this result goes with Kliegman RM, et al. (2007) [3], which reveals that Approximately 60% of children with nocturnal enuresis are male [4].

In Jamaica (the Caribbean) adopted the prospective interview method recorded a prevalence rate of 45% of 8 years old sickle cell anemia patients; also have a male predominance [10].

The Family history of enuresis of patients goes with Ekinci O, et al. (2013) [10], which Find that family history of nocturnal enuresis and family problems were found to be more frequent in patients with thalassemia major [11]. And Saleh AA, et al. (2015) [8], in which positive family history (including both parents side and siblings), were significantly higher in an enuretic patients compared to non-enuretic [9].

Our result differs from that of Kliegman RM, et al. (2007) [3], which find that the Family history is positive in half of cases in general population [4].

Urinary tract infection in thalassemic patient reveal no significant finding and this not goes with Saleh AA, et al. (2015) [8], and Babela JRM, et al. (2004) [11], were children with positive history of urinary tract infection were significant [12].

Renal ultrasound finding of patients seen in one patient (1.6%) (P value = 0.9) while Kovacevic L, et al. (2014) [14], study states 12.54% of patients and 5.38% of controls have abnormal finding (p = 0.004).

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