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The roles of vitamin b12, 25(oh) d, and folate in primary nocturnal enuresis: A single center experience in an immigration area

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Introduction & Objectives: In this study, we examined the associations between late preterm (LPT) birth children with nocturnal enuresis and their levels of vitamin B12, folate, iron, and 25(OH)D.

Materials & Methods: Between April 2019 and December 2019, 206 children (74 girls, 132 boys) with PNE who presented at the public hospital urology clinics were included as the study group, and 111 healthy children (52 girls, 59 boys) who presented at the same hospital pediatric clinics were included as the control group. We defined primary monosymptomatic nocturnal enuresis as nighttime bedwetting (≥ 2 nights per week) in children between 5 and 13 years of age. Hospital records of both groups were compared for information such as age, height, weight, vitamin B12, folate, ferritin, iron values, and racial characteristics. Variables were compared using descriptive statistics and the chi-squared and Mann-Whitney U tests.

Table 1. Comparison of the primary nocturnal enuresis (PNE) group and the control group in terms of basic characteristics

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Age	Enuresis	146	9.40	2.83	0.234
	Control	102	8.54	2.63	0.261
Bodyweight	Enuresis	146	34.49	12.98	1.081
	Control	102	30.70	11.93	1.182
Height	Enuresis	146	138.20	15.05	1.246
	Control	102	132.81	17.28	1.711
Gender		Female (%)		Male (%)	
	Enuresis	52 (35.6)		94 (64.4)	
	Control	47 (46.1)		55 (53.9)	
Nationality		Republic of Turkey (%)		Syria (%)	
	Enuresis	133 (91.1)		13 (8.9)	
	Control	97 (95.1)		5 (4.9)	

Results: Our study differed from similar studies published in the literature in the number of patients included. No differences were found in age, height, weight, or racial characteristics between our study and control groups. The Fe, Fe-binding protein, and ferritin levels also did not differ between the two groups. In agreement with the literature, the mean vitamin B12, 25(OH)D, and folate levels were significantly lower in the enuresis group than in the control group (Table 2).

Table 2. The comparison of 25-OH D, Vitamin B12, Folate, Fe, Fe binding protein, Ferritin levels of enuresis and the control groups

	Group	N	Mean	Std. Deviation	Std. Error Mean	P value
Vitamin D	Enuresis	146	44.86	294.77	24.479	P<0.01
	Control	102	18.54	8.46	0.837	
B12	Enuresis	146	334.85	120.25	9.952	P<0.001
	Control	102	409.94	155.83	15.429	
Folate	Enuresis	146	9.05	2.99	0.247	p>0.05
	Control	102	14.51	62.12	6.151	
Fe	Enuresis	146	84.70	45.31	3.763	p>0.05
	Control	102	77.99	30.65	3.048	
Iron binding	Enuresis	146	296.52	58.99	4.899	p>0.05
	Control	102	304.90	58.85	5.855	
Ferritin	Enuresis	146	38.10	21.29	1.768	p>0.05
	Control	102	34.58	21.25	2.104	

Conclusions: Low vitamin B12, folate, and 25(OH)D levels in patients with PNE may have a role in the delay of CNS maturation or in triggering sleep disorders. Therefore, tests for these vitamins can be included in routine investigations of enuretic children. We suggest that a larger series and further studies are needed to determine the relationship between PNE and folate levels.