TITLE the effect of BMI in reducing risk of refractory seizure due to lipoid tissue factors.

Authors setila dalili shahin koohmanaii

Hospital 17 shahrivar hospital

OBJECTIVES

Refractory epilepsy (RE) is a condition in which seizures do not respond to first and second-line anticonvulsant drug therapy. Despite the use of new antiepileptic drugs, refractory epilepsy occurs in approximately 20–30% of patients with epilepsy probably due to the multiple pathogenesis mechanisms underlying refractoriness(1) Epilepsy and malnutrition represent two major health problems in Benin because of their serious medical, social, cultural, and economic implications .(2,3) children affected by refractory epilepsy could be at risk of malnutrition because of feeding difficulties (anorexia, chewing, swallowing difficulties or vomiting) and chronic use of anticonvulsants, which may affect food intake and energy metabolism. Moreover, their energy requirement may be changed as their disabilities would impede normal daily activitiesWe aim to assess the effect of BMI in reducing risk of refractory seizure due to lipoid tissue factors.

METHODS

A matched population-based cross-sectional case–control survey was performed: cases (patients with Refractory with scoring 7 or higher in Engel's scale for seizure frequency were matched with healthy children in same age, geographical area, social and economic classes. Affected children with nutritional status impairment (neoplasia, chronic infections), or changes in energy metabolism (hyper-hypothyroidism), or treated with special diets (diabetes, phenylketonuria, celiac disease or lactose intolerance), feeding with NG tube and parenteral were excluded from study. All children had any acute infections and were being treated only with antiepileptic drugs at the time of the study.

After sample size determination, we selected 80 children with refractory epilepsy from the Outpatient Clinic of Pediatric Neurology and Epilepsy and were compared With 80 healthy children without epilepsy from the Outpatient Clinic of General Pediatrics. Measuring of height, weight was done by same Clinical examinations tools and standard situation. Measurements were transformed into Z-scores For weight/age (W/A), height/age (H/A) and body mass index (BMI)/age (BMI/A)by Standardized Height and Weight Calculator which is based on National Health and Nutrition Examination Survey (NHANES) 1999-2004 cohort.

Data analysis was done by SPSS software, version 14. The main statistical tests were Pearson correlation analysis, independent T test and ANOVA test.

Variables	Type of seizure	N	Mean	Std. Deviation	p-value
Weight	GENERAL	46	30.5870	11.50956	0.266
	PARTIAL	31	27.4516	10.34275	
	General/Partial	3	22.3333	5.50757	
	Total	80	29.0625	10.99723	
HEIGHT	GENERAL	46	130.9022	15.10505	0.293
	PARTIAL	31	125.9355	15.79227	
	General/Partial	3	122.3333	10.06645	
	Total	80	128.6563	15.31661	
BMI	GENERAL	46	17.2157	3.39127	0.314
	PARTIAL	31	16.6432	2.32242	
	General/Partial	3	14.7233	1.28769	
	Total	80	16.9004	2.98413	
$Z_{W/A}$	GENERAL	46	.0874	1.11492	0.378
	PARTIAL	31	.0709	.85390	
	General/Partial	3	-.7533	.64757	
	Total	80	.0495	1.01048	
$Z_{H/A}$	GENERAL	46	.0897	.91501	0.753
	PARTIAL	31	.0897	1.00673	
	General/Partial	3	-.3340	1.00107	
	Total	80	.0738	.94537	
$Z_{BMI/A}$	GENERAL	46	-.0135	1.27263	0.464
	PARTIAL	31	-.0084	1.07228	
	General/Partial	3	-.8833	.93565	
	Total	80	-.0441	1.18707	

RESULTS

There was no significant difference between sex groups regarding anthropometric indices.($p>0.05$) generalized and focal types of epilepsies were noted by 57.5% and 38.75% of patients, respectively. Daytime epilepsies happened in 46.25% of patients and 33.75% noted no predominant time for epilepsies. Clinicians indicated poly-therapy for the majority of patients (92.5%) and 36-72 months were the most common onset times for epilepsies.(32.5%) .Results showed that lower onset time indicated lower frequency of refractory epilepsies. Although, there was significant difference between Zheight and predominant time of epilepsies but, results showed no significant relation between types of epilepsies and frequency of epilepsies with anthropometric indices ($p>0.05$) . In multivariate regression analysis by backward LR , results noted Zweight and birth weight as the predicting factors of refractory epilepsies.

CONCLUSIONS

According to results, it seems that this effect may be because of leptin. Therefore, researchers recommend further investigations regarding this issue in children with epilepsy.

References

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Growth

setila dalili

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