

PREVALENCE OF IDIOPATHIC INTRACRANIAL HYPERTENSION AND RELATED FACTORS IN OBESE CHILDREN AND ADOLESCENTS

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Introduction: Idiopathic intracranial hypertension (IIH) is a disorder of elevated intracranial pressure without any evidence of intracranial pathology or underlying systemic disease. Obesity was reported as a significant cause of IIH in childhood especially in adolescents. This study aims to investigate the frequency of IIH and to determine its related factors in obese children and adolescents.

Materials and Methods: 1058 obese children and adolescents were enrolled into the study between January 2011 and January 2013. They were evaluated for IIH by pediatric endocrinologists, neurologists and ophthalmologist.

Results: Mean age was 10,8±3,1 years, female/male ratio was 1,31. The prevalence of IIH was found as 1,32%. The mean age of cases with IIH was 11,1±2,7 years, female/male ratio was 2,5% (Table 1). In the cases with IIH; headache rate was 78,6% and frequency of hypertension were significantly higher than in the others (p<0,05). Mild and medium papilledema were found 78,6% and 21,4% respectively. Fasting insulin, HOMA-IR, cortisol levels were found significantly higher than in the obese individuals without IIH (p<0,05). Medical treatment performed in all patients with IIH. Lumboperitoneal shunt was required in only one patient (7,1%). After treatment, 50% of fundoscopic examinations were normal and the others had mild papilledema. None of the patient developed optic atrophy during follow-up period. Recurrence occurred only in one patient (7,1%) (Table 2).

Table 1. Clinical examination and radiological findings of IIH patients

CASE	Age(Year)	Gender	Puberty	BMI/BMI SDS	Initial Symptoms	Neurologic Examination	Papilledema	Visual Field	Vitamin Deficiency	LP opening pressure (mmHg,O)	MR	MR Venography
1	12.06	F	Pubertal	33,0/3,25	-	N	±	N	-	330	N	N
2	13.09	M	Prepubertal	28,9/2,03	Headache Blurred vision	N	±	N	A	300	N	N
3	13.05	F	Pubertal	34,5/3,55	-	N	±	N	B12,D	350	N	N
4	6.01	M	Prepubertal	26,1/3,01	Headache	N	±	N	-	300	N	N
5	10.08	M	Pubertal	26,5/1,72	Headache, Vomiting Blurred vision	N	±	N	D	310	N	N
6	14.00	M	Pubertal	36,9/3,15	Headache, Blurred vision	N	±	Bilateral Blind spot enlargement	D	330	N	N
7	7.01	F	Prepubertal	24,3/2,33	Blurred vision	N	±	N	-	330	N	N
8	9.09	F	Prepubertal	27,2/2,33	Headache	N	±	N	D	310	N	N
9	10.10	F	Pubertal	30,8/2,88	Headache, Vomiting	N	±	Left blind spot enlargement	D	330	N	N
10	11.00	F	Pubertal	23,4/1,60	Headache	N	±	N	D	280	Partial Empty Sella	N
11	11.09	F	Pubertal	26,6/2,02	Headache Blurred vision	N	±	Bilateral Blind spot enlargement	D	290	N	N
12	11.09	F	Pubertal	27,4/2,19	Headache Double vision Internal shift of eye	6th nerve palsy	±	N	A, D	330	Partial Empty Sella	Right transverse sinus hipoplasia
13	12.07	F	Pubertal	29,8/2,67	Headache	N	±	N	B12, D	330	N	N
14	17.04	F	Pubertal	41,2/4,88	Headache Blurred vision	N	±	N	A, D	350	N	N

Table 2. Treatment and follow-up time of IIH patients

CASE (Age/Gender)	Treatment	Treatment period (month)	Follow-up period (month)	Disappearance time of symptoms (Headache/Papill edema)	Weight loss after treatment(%)	Additional treatment	Recurrence
1 (12,06/F)	Acetazolamide	7	19	-/+	12,4	-	-
2 (13,09/F)	Acetazolamide	6	21	-/3	1,6	-	-
3 (13,05/F)	Topiramate	24	24	+/12	-	Vitamin B12	-
4 (6,01/F)	Acetazolamide+Topiramate+LP shunt	7	24	-/+	-	-	-
5 (10,08/F)	Acetazolamide	5	10	4/4	7,3	-	-
6 (14,00/F)	Acetazolamide+Topiramate	11	16	10/+	-	-	-
7 (7,01/F)	Acetazolamide	4	7	-/+	-	-	-
8 (9,09/F)	Acetazolamide+Topiramate	10	18	+/+	3,8	-	±
9 (10,10/F)	Acetazolamide+Topiramate	15	31	5/+	-	Vitamin D	-
10 (11,00/F)	Acetazolamide	7	18	6/6	4,4	Vitamin D	-
11 (11,09/F)	Acetazolamide+Topiramate	8	13	1/+	-	Vitamin D	-
12 (11,09/F)	Acetazolamide	6	12	3/3	8,3	Vitamin D	-
13 (12,07/F)	Acetazolamide+Topiramate	10	22	3/3	9,6	Vitamin D+B12	-
14 (17,04/F)	Topiramate	12	30	+/12	7,9	-	-

Conclusion: Idiopathic intracranial hypertension is one of the most serious complication of obesity in childhood. Most of the patients with IIH had intractable headache which impacts life quality and risk of permanent visual loss. Complete resolution of clinical symptoms of IIH is observed by prompt diagnosis and treatment, and serious complications can be prevented. For this reason, obese children and adolescents who have complaint of intractable headache should be evaluated for IIH. Weight loss is one of the most effective ways for regression of IIH alongside other treatments.