Short-Term Outcomes of Tension Type and Migraine Headache in Children

Somjit Sri-udomkajorn MD*,
Surapee Ruangsuwan MD*

** Division of Child Neurology, Queen Sirikit National Institute of Child Health, Department of Medical Service, Ministry of Pubic Health, College of Medicine, Rangsit University, Bangkok*

Objective: *To study the short-term outcome and the factors associated with the outcome in childhood tension type and migraine headache patients.*
Material and Method: *Children aged 16 years or less with first diagnosed of either migraine or tension-type headache were reassured the cause of headache and treated by avoiding triggering factors, taking intermittent analgesics or a daily preventive medication such as propanolol 10 mg two times a day or amitriptyline 10 mg at night for patients who were suffered from the frequent headache attacks whether had to stop activity or go to sleep. They were followed up at 2 weeks and 2 months to confirm the diagnosis and the response to the treatment. The short-term outcomes and the possible factors associated with the outcomes were analysed.*
Results: *Pre-treatment 81% of migraine patients and 43.5% of tension-type patients were significant frequently suffered from headache attacks. Post-treatment revealed that it reduced to 4% in migraine patients and 16% tension-type patients. Gender, age at onset, severity before treatment, precipitating factors; hot weather, sleep deprivation, learning stress, familial stress, night awakening, familial history of headache were not statistically significant in short-term outcomes.*
Conclusion: *Treatment childhood tension-type and migraine headache by reassurance, avoid the probably precipitating factors, intermittent analgesics and usage of amitriptyline or propanolol had good efficacy in reducing the severity of attack. The authors cannot identify the associated factor with the outcome of treatment.*

Keywords: *Migraine, Tension-type headache, Short-term outcomes*

J Med Assoc Thai 2008; 91 (Suppl 3): S104-8
Full text. e-Journal: *http://www.medassocthai.org/journal*

The International Headache Society classified headache to be primary headache, secondary headache and cranial neuralgias[1]. The primary headache include migraine, tension-type, cluster and paroxysmal; headache unassociated with a structural lesion are the most common causes of the headache in children. These are defined based on symptom-profiles on the characteristics of attacks, which the general and neurological examinations reveal to be normal. Contrary to the secondary headache which are defined from the etiology such as head and/or neck trauma, cervical vascular disorder, infection, tumor mass, substance or their withdrawal etc. These are mostly diagnosed by a good history and a physical examination and laboratory investigation, which some patients may need.

The primary headache, especially migraine has influence on the daily activity of the childhood patients during the attack and may interfere their studying and examination if the attack occur during the examination period[2,3]. These made the patients and their parents very worry and search for an effective treatment.

The objective of this study was to analyze the short-term outcomes and factors that affected the outcomes in childhood tension-type and migraine headache.

Correspondence to: Sri-udomkajorn S, Division of Child Neurology, Queen Sirikit National Institute of Child Health, Bangkok 10400, Thailand. E mail: Somjit3d@yahoo.com

Materials and Method

Children aged 16 years or less with daily headache more than 2 weeks or recurrent headache more than 4 times consulted the neurological clinic at Queen Sirikit National Institute of Child health between January and December 2001 and between January 2003 and December 2005. Parents and/or patients had to answer the questionnaire then were interviewed and were examined by pediatric neurological staffs that made decision to investigate diagnosis and treatment depend on clinical features. Patients who were diagnosed either migraine or tension-type headache were suggested for 1) reassurance that the cause is benign, not serious disease, 2) avoiding triggering factors such as stress, hot weather, sleep deprivation etc., 3) taking intermittent headache medications include analgesics: acetaminophen, ibuprofen, and aspirin, 4) a daily preventive medication such as propanolol 10 mg two times a day or amitriptyline 10 mg at night for patients who had frequently suffered from the headache attack whether had to stop activity or go to sleep.

The patients followed up at next 2 weeks and 2 months to confirm the diagnosis and the response to the treatment. The checklist question were age of onset, time, duration, location, frequency, severity characteristic of the headache, associated sign and symptoms, precipitating and relieving factors, family history of headache and migraine.

Medical records and interviewed protocols were reviewed. The type of headaches were redefined according to the ICHD II criteria.

The short-term outcomes and the factors possible associated with the outcomes of migraine or tension-type headache were analyzed by Chi-square test.

Results

Four hundred and thirty nine cases met the inclusion criteria. Three hundred and seventy-five (85.4%) were primary headaches; the others (14.6%) were secondary headache. Two hundred and twenty-eight (60.8%) were female, 147 (39.2%) were male. Mean age at first examination was 9.54 years (SD 2.51 year), range was 3.1-16 years. Mean age at onset of headache was 8.09 years 76.67% of cases were studying in primary school.

In primary headache, ICHD II criteria were used to classify the headache type. There were 128 (35.2%) migraine, 47 (12.5%) tension-type, 123 (33.3%) probable migraine and 31(8.3%) probable tension-type. Forty (10.7%) couldn't be classified because symptoms were not compatible with any diagnosed criteria and the duration of headache attack was less than that of the ICHD II criteria and the children couldn't describe the quality of headache.

The author accounted for migraine headache with probable migraine headache to be included in the migraine group and accounted for tension-type headache with probable tension-type headache to be included in the tension-type group.

Thirty cases were excluded from this study due to loss follow-up at 2 weeks and 2 months. Two hundred thirty were in the migraine group and sixty-nine were in the tension type group. 81 % in migraine group and 43.5 % in tension-type group were significantly suffered from the headache attack by had to stop activity or go to sleep. Follow-up at 2 months, post-treatment, indicated, that there were only 4% in migraine group and 16% tension-type group who still suffered from frequent headache attacks and limited their daily activities.

The severity of headache before and after treatment were significantly different between migraine and tension-type groups, (Table 1).

The authors accounted for the outcome of 2-months periods after treatment. No attack or no significant attack with regard to children still had normal activity in the normal daily activity group showed little improvement, limited activity with not improve, limited activity to be limited activity group. These two groups were compared for the factors which may be affected to the short term outcome in migraine group and tension-type group.

No statistically significant differences were found in gender, age at onset, severity before treatment, precipitating factors; hot weather, sleep deprivation, learning stress, familial stress, familial history of headache (Table 2).

Discussion

Tension-type and migraine headache are common problems which disturbed patients' daily activity, especially in the classroom. There are various kinds of treatments in tension-type and migraine headache such as medication, psychological treatment, physiotherapy or acupuncture. These were reported in many journals and revealed significant effectiveness for relief of severe headache and to prevent overuse of drugs[4-9]. However, the standard treatment for these patients especially migraine patients were 1) reassurance that there is not a brain tumor or severe disease; 2) taking

Table 1. Effects of headache attacks before and after treatment

	Migraine group (%) n = 230	Tension-type group (%) n = 69	p-value
Severity before treatment			0.000
Go to the bed	55.65	26.09	
Stop activity	25.65	17.39	
Continuous activity	18.70	56.52	
2 months period activity after treatment			0.001
No attack or not significant attack	11.31	17.39	
Significant attack still had normal activity	84.78	66.67	
Little improve, limited activity	1.74	4.35	
Not improve, limited activity	2.17	11.59	

Table 2. Comparison of outcomes and clinical features in 230 migraine group and 69 tension-type group

Characteristics	Migraine group, n = 230			Tension-type group, n = 69		
	Normal activity	Limited activity	p-value	Normal activity	Limited activity	p-value
Sex			0.31			0.28
Male	86	2		26	3	
Female	135	7		32	8	
Age onset (year)			0.74			0.66
3-6	20	0		4	2	
6-9	80	2		19	3	
9-12	86	3		27	5	
> 12	35	2		8	1	
Severity			0.35			0.10
Go to the bed	125	3		13	5	
Stop activity	56	3		9	3	
Continuous activity	40	3		36	3	
Precipitating factors						
Hot weather	17	2	0.12	1	0	0.66
Sleep deprivation	19	0	0.36	0	0	-
Learning stress	35	1	0.70	2	0	0.53
Familial stress	11	1	0.42	4	0	0.37
Familial history of headache	95	3	0.56	29	6	0.78

intermittent headache medications including analgesics: acetaminophen, ibuprofen, and aspirin; 3) avoiding triggering factors 4) a daily preventive medication such as propranolol or nadolol, amitriptyline and others; and 5) biofeedback employing relaxation training and temperature feedback[5].

In daily clinical practice, the authors found an overlap of characteristics between migraine and tension headache. Sometime the distinction between migraine and tension type was unclear because of poor describing of the symptoms by children and the both might coexist in one. So the authors used these treatment methods for all new cases with diagnosed either migraine or tension type headache. The short-term outcomes concerning in the patient's daily life activity in this study were good. Post-treatment revealed only 4% in migraine patients and 16% in tension-type patients experienced significant suffered from frequent headache attacks. Some patients improved by reassurance, avoiding triggering factors and intermittent analgesics. So this study supports the significant of non-pharmacologic approaches to

treatment including reassurance, rest, good sleep hygiene, and healthy eating in tension-type and migraine patients.

A meta-analysis reviewed by Bogaards and ter Kuile[10] reported the outcome of treatment in recurrent tension type headache. They found cognitive therapy, relaxation biofeedback were superior to no treatment and to placebo therapy and no relationship between treatment outcome and other treatment characteristics. The authors investigated the relation of short period outcomes and the patient characteristics; gender, age onset, severity before treatment, precipitating factors, familial history of headache and treatment which were found no statistically significant difference similar to Bogaards'. However Bogaards et al gave suggestion that the treatment outcome may be affected more by patient characteristics than by treatment characteristics.

Conclusion

Primary headache is the most common their cause of headache in children which had an effect on their daily activities. However, treatment by avoiding the probably precipitating factors and usage of amitriptyline or propanolol have good efficacy in reducing the severity of attack. The authors cannot able identify the factor which may be associated with the outcome of treatment.

References

1. The International Classification of Headache Disorders: 2nd edition Cephalalgia 2004; 24(Suppl 1): 9-160.
2. Ruangsuwan S, Sriudomkajorn S. 375 childhood primary headache: clinical features, the agreement between clinical diagnosis and diagnoses using the international classification of headache disorders in Thai children. J Med Assoc Thai 2007; 90: 1309-16.
3. Sweeting H, West P. Health at age 11: reports from schoolchildren and their parents. Arch Dis Child 1998; 78: 427-34.
4. Dooley J, Bagnell A. The prognosis and treatment of headaches in children - a ten-year follow-up. Can J Neurol Sci 1995; 22: 47-9.
5. McGrath PJ, Reid GJ. Behavioral treatment of pediatric headache. Pediatr Ann 1995; 24: 486-91.
6. Torelli P, Jensen R, Olesen J. Physiotherapy for tension-type headache: a controlled study. Cephalalgia 2004; 24: 29-36.
7. Silberstein SD, Lipton RB, Goadsby PJ. Tension-type headache: diagnosis and treatment. In: Silberstein SD, Lipton RB, Goadsby PJ, editors. Headache in clinical practice. 2nd ed. London: Martin Dunitz; 2002: 113-28.
8. Holroyd KA, O'Donnell FJ, Stensland M, Lipchik GL, Cordingley GE, Carlson BW. Management of chronic tension-type headache with tricyclic antidepressant medication, stress management therapy, and their combination: a randomized controlled trial. JAMA 2001; 285: 2208-15.
9. Melchart D, Streng A, Hoppe A, Brinkhaus B, Witt C, Wagenpfeil S, et al. Acupuncture in patients with tension-type headache: randomised controlled trial. BMJ 2005; 331: 376-82.
10. Bogaards MC, ter Kuile MM. Treatment of recurrent tension headache: a meta-analytic review. Clin J Pain 1994; 10: 174-90.

ผลการรักษาและปัจจัยที่มีผลต่อการรักษาอาการปวดศีรษะ tension type และ migraine ในเด็ก

สมจิต ศรีอุดมขจร, สุรภี เรืองสุวรรณ

วัตถุประสงค์: *ศึกษาผลการรักษาและปัจจัยที่มีผลต่อการรักษาอาการปวดศีรษะ tension type and migraine ในเด็ก*

วัสดุและวิธีการ: *ผู้ป่วยเด็กอายุน้อยกว่า 16 ปีที่วินิจฉัยเป็น migraine หรือ tension-type headache โดย ICHD II criteria ได้รับการรักษาโดย อธิบายบอกสาเหตุของอาการปวดศีรษะว่าไม่อันตราย แนะนำหลีกเลี่ยงปัจจัยกระตุ้นอาการปวดศีรษะ ถ้ามีอาการปวดเล็กน้อยให้นอนพัก ถ้าปวดมากจึงใช้ยา acetaminophen หรือ Ibruprofen ในรายที่ปวดมากจนต้องหยุดทำกิจกรรมต่าง ๆ หรือ ต้องนอนพักจะได้ยา propanolol หรือ amitriptyline ผู้ป่วยมีนัดพบแพทย์ผู้รักษาอีก 2 สัปดาห์และ 2 เดือนเพื่อยืนยันการวินิจฉัยและผลการรักษา นำผลการรักษาและปัจจัยที่อาจมีผลต่อการรักษามาวิเคราะห์หาความสำคัญ*

ผลการศึกษา: *ก่อนการรักษา ร้อยละ 81 ของกลุ่ม migraine และ ร้อยละ 43.5 ของกลุ่ม tension-type มีอาการปวดศีรษะรุนแรงจนมีผลต่อการดำเนินชีวิตประจำวัน หลังการรักษา 2 เดือนพบร้อยละ 4 ของกลุ่มmigraine และร้อยละ 16 ของกลุ่ม tension-type มีอาการปวดศีรษะรุนแรงจนมีผลต่อการดำเนินชีวิตประจำวัน ปัจจัยด้านเพศ อายุที่เริ่มมีอาการ ความรุนแรงก่อนการรักษา ปัจจัยกระตุ้นได้แก่ อากาศร้อน การอดนอน ปัญหาครอบครัว ความเครียดจากการเรียน ประวัติการปวดศีรษะในครอบครัว ไม่มีความสัมพันธ์ต่อผลการรักษา*

สรุป: *การรักษา tension-type และ migraine headache ในเด็กโดยอธิบายบอกสาเหตุของอาการปวดศีรษะว่าไม่อันตราย แนะนำหลีกเลี่ยงปัจจัยกระตุ้นอาการปวดศีรษะ ถ้ามีอาการปวดเล็กน้อยให้นอนพัก ถ้าปวดมากจึงใช้ยา acetaminophen หรือ Ibuprofen ในรายที่ปวดมากจนต้องหยุดทำกิจกรรมต่างๆ หรือต้องนอนพักจะได้ยา propanolol หรือ amitriptyline ได้ผลดีในการรักษา แต่ไม่สามารถหาปัจจัยที่มีผลต่อการรักษาระยะสั้นได้*