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Abdominal Migraine among Children in Diyala Province

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Abstract

Background: Abdominal migraine is characterized by frequent, paroxysmal, and acute attacks of abdominal pain. There are many hypotheses which contribute to its pathophysiology, but abnormal gastric motility can play a role in the disease's pathogens. Abdominal migraine affects 0.2% to 4.1% of children. Diagnosis of abdominal migraine depends on history and physical examination, radiological and laboratory tests which help to exclude other causes of abdominal pain. Treatment is focused on non-pharmacological and pharmacological therapy.
Objective: To identify abdominal migraine among children in Diyala province and summarize the relationship between abdominal migraine and other disorders.
Patients and Methods: A cross-sectional study was carried out in Al-Batool teaching hospital in Diyala Province for 8 months from 1st November 2020 till 30th June 2021. The target population was the children who were attending pediatric consultant clinics who were examined and recorded according to Rome Ⅳ Criteria for diagnosis of abdominal migraine. A total of 300 children were included in the study. The information was taken from mothers of children using a questionnaire that was used for the study of abdominal migraine. All data were collected by introducing and analyzing information by using computer (Microsoft Excel 2010 software for windows). Statistical analysis was done by number and percentage as description.
Results: The results of demographic data were conducted on 300 child their ages ranged between 3-15 years presented with paroxysmal abdominal pain associated with at least two of following features as anorexia, nausea, vomiting, headache , palpitation , decrease school performance and pallor . Peak percentage of abdominal migraine was seen in age between 6-9years (54.7%). Females affected nearly equal to males, females were (51.6%) and males were (48.3%). Regarding the location of abdominal pain, it occurred mainly in periumbilical site (80%). In children with abdominal migraine, there was history of migraine headache and motion sickness in first-degree relatives. There were many triggering factors for abdominal migraine such as foods like sweets, chinese food, carbonated drinks which were found in (90.3%) of children and watching TV, mobile,and electronic games for long time in (96.7%) of children. The duration of symptoms less than 6 months was seen in (13.3%) of children while the duration of symptoms in between 6-12 months was seen in (60%) of children while the duration of symptoms above one year was seen in (26.7%) of children .

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Conclusion: Abdominal migraine was mostly seen in school age children. Family education about the causes ,trigger factors and management of disease is important.

Keywords: Abdominal migraine, abdominal pain , children

Introduction

Abdominal migraine is functional abdominal pain with features of migraine (paroxysmal abdominal pain associated with anorexia, nausea, vomiting or pallor, as well as maternal history of migraine headaches) interfering with normal daily activities [1]. The pain associated with abdominal migraine is generally located in the midline of the abdomen around the belly button. It is often described as dull pain and may be moderate to severe. The attacks last between 2-72 hours and the patient is free from symptoms and well between attacks [2] . The mean age of onset is 7 years, although it has been described in infants and adults, with females affected more than males [3]. Abdominal migraine is most often diagnosed between the ages of 3 and 10 years, but 2 peaks have been reported at 5 and 10 years of age [4]. An abdominal migraine can easily be mistaken with other, more common causes of epigastric pain in children such as irritable bowel syndrome (IBS) and Crohn's disease. Persistent abdominal pain is a very distressing condition that causes significant morbidity in children and impairs their educational outcomes [5]. In the early 1800s, abdominal migraine was considered a cyclic vomiting syndrome rather than a separate condition. Brams coined the term "abdominal migraine" in 1922 after describing the disorder in three adult patients [6]. He described functional epigastric pain that occurred in patients at periodic intervals [7] . Cullen and Macdonald investigated the occurrence of chronic abdominal pain in Western Australia and traced the progression from early childhood "bilious attacks" to modern adult migraine [8] . In 1986, Russell and Symon examined the clinical features of 40 children suspected of having AM as well as the efficacy of treatment in these children They observed that symptoms continued as headache or vomiting in adults. The exact pathogenesis of abdominal migraine is not clearly understood, but there is a great overlap between abdominal migraine and migraine headache [9] .Gastric emptying and antral motility indices in patients with abdominal migraine were studied in Sri Lanka .This study found that abnormal gastric motility can play a role in the disease's pathogens [10].

Patients and Methods

Study protocol

This study was conducted in Albatool teaching hospital in Baquba City a center of Diyala Province as a cross-sectional study from 1st November 2020 to 30th June 2021.

Actual Work

All children with abdominal pain who were attending pediatric consultant clinic were examined and recorded according to Rome Ⅳ criteria for diagnosis of abdominal migraine. A total of 300 children were included in the study. The information was taken from mothers of children. All cases were diagnosed by specialist pediatrician.

Sampling Preparation

Data were gathered by a particular questionnaire including age of children, gender, sites of pain, other features associated

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with pain, food style, relationship with T , mobile and electronic games ,family history, duration of symptoms, physical examination, investigations (GUE, GSE, stool for H. pylori, complete blood picture, blood film , abdominal U/S and EEG to confirm the diagnosis.

Criteria of diagnosis

Inclusion criteria

All children who have abdominal migraine according to Rome IV criteria, which are:

two or more episodes over a six months period of all of the following:

1-Paroxysmal episodes of intense, acute periumbilical, midline, or diffuse abdominal pain lasting for 1 hour or more.

2-Periods lasting weeks to months between episodes.

3-Pain is debilitating and prevents people from going about their daily activities.

4-Pain associated with at least two of the following symptoms: Anorexia, nausea, vomiting, headache, photophobia and pallor (Koppen IJ,2017)

Exclusion criteria

All children who don't meet Rome IV criteria and all children with abnormal investigations.

Statistical analysis

All data were collected by introducing and analyzing information by using computer . Statistical analysis was done by number and percentage as described.

Results

Three hundred children who had previously fulfilled the diagnostic criteria for abdominal migraine, their ages range 3 - 15 years. Table1 shows the number of children in age group 3- 5 years is 54(18%) while in age group between 6-9 years and age group more than10 years are 164(54.7%) and 82(27.3%) respectively.

Table (1): Distribution of children with abdominal migraine according to their ages among the studied group

Age	No. of children (%)
3-5years	54 (18%)
6-9 years	164 (54.7%)
10-15 years	82 (27.3%)
Total	300

Table (2) shows the number of children of children 145(48.3%) in male group. 155(51.7%) in female group and the number

Table (2): Distribution of children with abdominal migraine according to their gender among the studied group

Gender	No. of children(%)
Female	155 (51.7%)
Male	145 (48.3%)
Total	300

Table (3) shows headache was seen in 226 (75.3%) of children, while dizziness was seen in 130(43.3%) of children, decrease appetite was seen in 210(70%) of children, vomiting was seen in 120 (40%) of children, nausea was seen in 5(1.7%) of children, pallor observed as a common feature in 280(93.3 %) of children, palpitation was seen

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in 40(13.3%) of children, school performance impairment was seen in 272(90%) of children. Children who were eating chips, sweets ,chocolate, chinese food and carbonate drinks were 271(90.3%), while children who were watching TV, mobile and electronic games were 290(96.7%).

Table (3): Distribution of clinical features of children with abdominal migraine in the studied group

Row	Clinical features	positive No. of children(%)	Negative No. of children(%)
1	Headache	226 (75.3%)	74 (24.7%)
2	Dizziness	130 (43.3%)	170 (56.7%)
3	Decrease appetite	210(70%)	90(30%)
4	Vomiting	120 (40%)	180 (60%)
5	Nausea	5 (1.7%)	295 (98.3%)
6	Pallor	280 (93.3%)	20 (7%)
7	Palpitation	40 (13.3%)	260 (86.7%)
8	School performance impairment	272(90.7%)	28(9.3%)
9	Eating chips, sweets , chocolate ,chines food and carbonate drinks	271 (90.3%)	29 (9.7%)
10	Watching TV ,Mobile and electronic games	290 (96.7%)	10 (3.3%)

In Table (4), generalized abdominal pain was seen in 50(16.6%) of children while periumbilical location of abdominal pain was seen in 240(80%) of children while epigastric location of abdominal pain was seen in 10(3.3%) of children.

Table (4): Sites of abdominal pain among children with abdominal migraine

Location of abdominal pain	No. of children(%)
Generalized	50 (16.6%)
Periumbilical	240 (80%)
Epigastric	10 (3.3%)
Total	300

Table (5) shows positive family history of diseases in 290(96.7%) of patients while 10(3.3%) associated with negative family history of diseases.

Table (5): Distribution of family history of diseases among children with abdominal migraine in studied group

Family history (mother and father)	No. of children(%)
Positive	290 (96.7%)
Negative	10 (3.3%)
Total	300

Table (6) shows migraine headache was seen in 110(36.7%) of children while motion sickness occurred in 98(32.7%) of children and other family diseases) epilepsy and recurrent) were seen in 82(27.3%) of children.

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Table (6): Family history of diseases that associated with children with abdominal migraine in studied group

Family diseases (mother and father)	NO. of children (%)
Migraine	110 (36.7%)
Motion sickness	98 (32.7%)
Others (epilepsy and recurrent headache)	82(27.3%)
Total	290

Table (7) shows the duration less than 6 months was seen in 40(13.3%) of children while the duration of symptoms in between 6-12months was seen in 180(60%) of children while the duration of symptoms above one year was seen in 80(26.7%) of children.

Table (7): The duration of the history of frequent abdominal pain in the studied group

Duration	No. of children(%)
Less than 6 months	40 (13.3%)
6-12months	180 (60%)
More than 1 year	80 (26.7%)
Total	300

Discussion

1- Distribution of children with abdominal migraine according to their ages:

Regarding the distribution of children with abdominal migraine according to their ages in the present study, peak percentage was seen in ages between 6-9 years was (54.7%).Asimilar previous study [11] reported that the mean age of children affected was 7 years, but 2 peak prevalence was reported at 5 - 10 years of age. Other similar study [12]. This mean prevalence of abdominal migraine at school age may be due to a stressful experience for them.

2 - Distribution of children with abdominal migraine according to their gender:

Regarding the distribution of children with abdominal migraine according to gender in the present study, females were (51.7%) while, males were (48.3%), the distribution was nearly equal between females and males. Similar previous study [13] reported equal prevalence in girls and boys. Disagree with other previous studies [4] [14] that reported that female children were more affected than males. This was probably due to genetic, environmental and social variations between countries.

3- Clinical features were associated with abdominal migraine:

Regarding clinical features were associated with abdominal migraine , in this present study pain associated with at least two of these symptoms as headache which was seen in (75.3%) of children while dizziness was seen in (43.3%), decrease appetite was seen in (70%), nausea was seen in (1.7%), vomiting was seen in (40%), pallor was seen in (93.3 %), palpitation was seen in (13.3%), school performance impairment was seen in (90%) and free from symptoms between attacks . Similar previous study [15]

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reported 93% to 100% of patients had associated pallor, 35% to 50% experience vomiting , 91% have anorexia, 73% to 91% have nausea, and headache is seen in 24% to 47 % . Other similar previous studies [16] reported the pain comes with migraine features including sensory disturbance photophobia, anorexia, nausea, vomiting, pallor crucially, the patient is symptom-free and well between attacks. These elements are agreed upon by consensus diagnostic criteria for abdominal migraine ICHD-3 and the Rome IV Classification of Gastroenterology Disorders.

4-Triggers factors of abdominal migraine:

Regarding trigger factors of abdominal migraine in the present study shows (90.3%) of children were eating chips ,Chinese food ,chocolate, drinking artificial juices and carbonated drink and (96.7%) were watching TV, mobile and electronic games. Similar previous study [17] reported the trigger factors include stressors both in school and family life; poor sleep and irregular sleep habits; periods of prolonged fasting and food deprivation; dehydration; travel; exercise; high-amine foods; foods with additive flavoring, coloring, and monosodium glutamate(MSG); and flashing lights.

5- Site of abdominal pain:

Regarding the site of abdominal pain in the present study, generalized abdominal pain was seen in(16.6%) of children while periumbilical location of abdominal pain was seen in (80%) of children while epigastric location of abdominal pain was seen in (3.3%) of children . A similar previous study [18] reported (82.4 %) of children had abdominal pain localized in the periumbilical area while (17.6 %) children had pain in a wider area of the abdomen including the umbilical area. Disagree with other previous study [19] that reported the nature and location of pain might vary. In 22 % and 16 % of patients, respectively, ‘colicky' and diffuse pain were recorded.

6- Family history:

Regarding family history in the present study, history of migraine headache in first-degree relatives was (36.7%) , while the family history of motion sickness was (32.7%) . Similar previous studies [19] [20] reported 70% of those with abdominal migraine had current or previous migraine headache with or without aura. Similar previous study International Headache Society included abdominal migraine in the ICHD classification in 2002, showed history of migraine headache in a first-degree relative is described in 34%–90% of children.

Conclusions

It was concluded from this study that abdominal migraine was mostly seen in school age children. In children with abdominal migraine, a family history of migraine headache was frequently discovered.

Recommendations

The present study suggests family education about the causes ,trigger factors and management of disease is important. Early diagnosis and management of this disease is crucial to prevent other non-necessary medical interference. Change lifestyle habits can help managing abdominal migraine symptoms, such as healthy sleep habit , avoiding stress and food triggers. Avoid watching TV, mobile and electronic games for long times and encouragement of children by families for social contact and

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playing social games.

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Ethical clearance: The project for this study was taken from the College of Medicine/ University of Diyala ethical committee.

Conflict of interest: Nill

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الشقيقة البطنية بين الاطفال في محافظة ديالى

ضي شهاب خليل[١]، ا.د. ناظم غزال نعمان[٢] ، د. هيلة عثمان حبيب [٣] ، د.فلاح مخيبر مصطفى [٤]

الملخص

خلفية الدراسة: الشقيقة البطنية هي نوبات انتيابيه ، متكررة ، وحادة في البطن . هناك العديد من الفرضيات التي تساهم في الفيزيولوجيا المرضية لكن الحركة المعوية غير الطبيعية تلعب دور مهم في اسباب المرض. تصيب الشقيقة البطنية حوالي ٠,٢٪ إلى ٤,١٪ من الأطفال. يعتمد تشخيص الشقيقة البطنية على التاريخ المرضي والفحص السريري والتشخيصات الإشعاعية والمختبرية و التي تكون نتائجها سلبية، علاج المرض يكون بطريقتين العلاج الغير دوائي والعلاج الدوائي.
اهداف الدراسة: تهدف هذه الدراسة إلى التعرف على معدل انتشار الشقيقة البطنية بين الاطفال في محافظة ديالى وتلخيص العلاقة بين الشقيقة البطنية والامراض الاخرى.
المرضى والطرائق: اجريت هذه الدراسة المقطعية في مستشفى البتول التعليمي في محافظة ديالى لمدة ٨ أشهر خلال الفترة التي بدأت من ١ تشرين الثاني ٢٠٢٠ واستمرت الى ٣٠ حزيران ٢٠٢١. كانت الفئة المستهدفة هم الأطفال الذين كانوا يترددون على العيادة الإستشارية لطب الأطفال وتم فحصهم وتسجيلهم وفقاً لمعايير روما ٤ لتشخيص الشقيقة البطنية وقد شملت الدراسة ٣٠٠ طفل وتم أخذ المعلومات من أمهات الأطفال باستخدام استبيان لدراسة الشقيقة البطنية وتم جمع كافة البيانات عن طريق إدخال المعلومات وتحليلها باستخدام الكمبيوتر (برنامج مايكرو سوفت أكسل ٢٠١٠) و تم التحليل الإحصائي بالعدد والنسبة المئوية كوصف.
النتائج: تألفت العينة من ٣٠٠ طفل تتراوح أعمارهم بين ٣-١٥ سنة يعانون من آلام في البطن المتكررة مرتبطة على الأقل باثنين من الاعراض التالية مثل فقدان الشهية والغثيان والقيء والصداع والشحوب والخفقان وضعف الاداء المدرسي . كانت أعلى نسبة اصابة (٥٤,٧٪) في الفئة العمرية من ٦-٩ سنوات ونسبة تأثر الإناث تقريبا تساوي الذكور ، نسبة الإناث (٥١,٦٪) ونسبة الذكور (٤٨,٣٪). فيما يخص موقع الألم البطني حيث يحدث بشكل رئيسي في منطقة ما حول السرة بنسبة(٨٠٪) . الاطفال المصابين بالشقيقة البطنية لديهم تاريخ عائلي للإصابة بالصداع النصفي ودوار الحركة لدى الأقارب من الدرجة الأولى (الام والاب). هناك العديد من العوامل المسببة للشقيقة البطنية مثل تناول الحلويات والأطعمة الصينية والمشروبات الغازية بكميات كبيرة ومشاهدة التلفاز والجوال والألعاب الإلكترونية لفترة طويلة . فترة ظهور الاعراض والتي تقل عن ٦ اشهر ظهرت بنسبة ١٣,٣% من الاطفال بينما الفترة بين ٦-١٢ شهر ظهرت بنسبة ٦٠% من الاطفال بينما الفترة أكثر من سنة ظهرت بنسبة ٢٦,٧% من الاطفال.
الاستنتاجات: تحدث الشقيقة البطنية في الغالب عند الاطفال في سن المدرسة . التثقيف الأسري حول الأسباب والعوامل المحفزة وإدارة المرض أمر مهم.

الكلمات المفتاحية: الشقيقة البطنية ، الآم البطن ، الاطفال

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