

The Frequency of Use of Complementary and Alternative Medicine in Infantile Colic and Factors Affecting Method Selection

İnfantil Kolikte Tamamlayıcı ve Alternatif Tıp Kullanım Sıklığı ve Yöntem Seçimini Etkileyen Faktörler

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Abstract

Objective: Infantile colic (IC) is crying spells that begin in the first three months after birth, last longer than three weeks and occur at least three days a week. In this study, it was aimed to examine the use of alternative and complementary medicine applications for treating IC and the factors affecting the chosen method.

Materials and Methods: Infants were questioned for the diagnosis of IC using the "IC diagnostic criteria" defined in Rome IV. A total of 113 patients were included in the study. Demographic data, medication or (use of complementary and alternative drugs for IC, methods used and treatment responses) were asked by parents of infants with IC. The obtained data were analyzed statistically.

Results: It was found that 91.2% of the patients used at least one of the complementary and alternative medicine methods. It was found that those with a high level of education used hot application, hairdryer, car driving, and evil eye beads more ($p<0.05$), those with higher income levels used hot application, hairdryer and prayer more ($p<0.05$).

Conclusion: The education and income level of the family affect the alternative and complementary medicine methods used in IC. Evidence-based studies are needed on this subject.

Öz

Amaç: İnfantil kolik (IC), doğumdan sonraki ilk üç ayda başlayan, üç haftadan uzun süren ve haftada en az üç gün meydana gelen ağlama nöbetleridir. Bu çalışmada IC tedavisinde alternatif ve tamamlayıcı tıp uygulamalarının kullanımı ve seçilen yöntemi etkileyen faktörlerin incelenmesi amaçlanmıştır.

Gereç ve Yöntemler: Bebekler, Roma IV'te tanımlanan "IC tanı kriterleri" kullanılarak IC tanısı için sorgulandı. Toplam 113 hasta çalışmaya dahil edildi. İnfantil kolikli bebeklerin ebeveynlerinden demografik veriler, ilaçlar veya IC için tamamlayıcı ve alternatif ilaçların kullanımı, kullanılan yöntemler ve tedavi yanıtları hakkındaki verileri istendi. Elde edilen veriler istatistiksel olarak analiz edildi.

Bulgular: Hastaların %91,2'sinin tamamlayıcı ve alternatif tıp yöntemlerinden en az birini kullandığı belirlendi. Eğitim düzeyi yüksek olanların daha çok sıcak uygulama, saç kurutma makinesi, araba kullanma ve nazar boncuğu kullandıkları ($p<0,05$), gelir düzeyi yüksek olanların sıcak uygulama, saç kurutma makinesi ve duayı daha fazla kullandıkları ($p<0,05$) bulundu.

Sonuç: Ailenin eğitim ve gelir düzeyi infantil kolikte kullanılan alternatif ve tamamlayıcı tıp yöntemlerini etkilemektedir. Bu konuda kanıt dayalı çalışmalara ihtiyaç vardır.

Introduction

Any practice that is not accepted by modern medicine and used instead of medical treatments is defined as “alternative medicine”. Complementary medicine is expressed as methods applied in addition to medical treatment. These two terms are used together under complementary and alternative medicine (CAM) (1). Modern medicine accepts the evidence-based approach. CAM applications are generally unproven, based on assumptions and observations or, as in our country, based on some beliefs. These methods can be harmful both directly and indirectly by causing delays in medical treatment. Although studies on children are limited, CAM is frequently used in children, especially in difficult situations to cope with (2,3). Herbal preparations were found the most commonly used CAM method (4).

Infantile colic (IC) was first defined by Wessel et al. (5) as anxiety and crying episodes of more than three weeks, at least three days a week, and exceeding three hours a day, which are common in the first three months after birth. Although behavioral therapies, diet, and many other methods have been recommended, no definitive evidence-based treatment has yet been found. Although the prevalence of IC in Turkey is not known, it has been reported as 51.1% in Eastern Anatolia and 66% in Western Anatolia (6,7). In this study, it was planned to evaluate the frequency of CAM use, the methods used, and the factors affecting the use of CAM in infants with IC in the Aegean region.

Materials and Methods

The study was planned as a observational, descriptive prospective study and was conducted in University of Health Sciences Turkey, Dr. Behçet Uz Pediatric Diseases and Surgery Training and Research Hospital, between 01.09.2018-01.03.2019. The parents of babies under one year of age who were referred to the outpatient clinic for healthy child follow-up were asked whether their babies had excessive crying during early infancy. Babies who were reported to have excessive crying were questioned

for IC's diagnosis using the “Diagnostic Criteria for Infant Colic” defined in Rome IV (8). According to these criteria, prolonged and repetitive crying periods with no apparent reason for crying in the first five months of life, no suspicion of illness, and not stopped by caregivers were defined as IC. A two-stage questionnaire was applied to parents who agreed to participate in the study and signed a consent form. In the first step, the diagnosis of IC in her babies was confirmed and diagnosed. In the second step, a questionnaire form consisting of 28 items regarding demographic data, use of medication or CAM for IC, methods used and treatment responses were applied face to face to the parents of babies diagnosed with IC. A total of 113 patients with a retrospective diagnosis of IC were included in the study. The parents' income level was based on the minimum wage.

The study was approved by ethics committee of University of Health Sciences Turkey, Dr. Behçet Uz Pediatric Diseases and Surgery Training and Research Hospital (approval number: 2018/212, date: 02.08.2018), and all our patients' parents' informed consent has been received.

Statistical Analysis

Statistical analyses were performed using the SPSS version 16.0. Descriptive statistics were expressed as frequency (%), mean \pm standard deviation. The groups were compared using the Pearson chi-square test and Fisher's Exact test for categorical data. The p-values <0.05 were considered statistically significant.

Results

Sixty-five (57.5%) of the patients were male, and the mean age was 6.5 ± 3.5 months at the time of the study. The general characteristics of the patients are presented in Table 1. While 90 (79.6%) of these patients received medication (all of them simethicone) for IC, 103 (91.2%) used one of the CAM methods. Of the cases questioned, 91 (88.3%) applied abdominal/back massage, 65 (63.1%) herbal tea, 48 (46.6%) car method. The least applied methods were prayer/amulet in 22 (21%) cases, wearing evil eye beads in 14 (13.6%), vegetable oil on the soles of 13 (12.6%) feet (lavender/apple/thyme), and 1 (1%) was

acupuncture. The used CAM methods are shown in Table 2 with details. Since 91.2% of the patients used CAM, an analysis of the factors affecting CAM use could not be performed. Therefore, factors affecting CAM methods used by patients were investigated. In the comparison of the CAM applications according to family income, warm application to the abdomen, use hairdryer and prayer/amulet were more frequent in high family income group (p-values are <0.001, <0.001, 0.011 respectively). The results were showed in Table 3. In the comparison of CAM applications according to mothers' education levels, warm application, hairdryer use, drive around, prayer/amulet were more frequent in high educated group than the low educated group (p-values are <0.001, <0.001, 0.002, 0.019 respectively) (Table 4). In the comparison of CAM applications according to

Table 1. Socio-demographic characteristics of infants with infantile colic and their families	
	Patient group n=113
Gender (female/male)	48/65
Maternal education level, n (%)	
Who never went to school	16 (14.2)
Primary school/secondary school	42 (37.2)
High school	37 (32.7)
University	18 (16.0)
Father's education level, n (%)	
Who never went to school	4 (3.5)
Primary school/secondary school	38 (33.6)
High school	37 (32.7)
University	34 (30.1)
Income level, n (%)	
Very bad	22 (19.5)
Bad	28 (24.8)
Middle	35 (31)
Good	28 (24.8)
Very good	0 (0)
Family type, n (%)	
Nuclear family	82 (72.6)
Extended family	31 (27.4)
Place of residence, n (%)	
Rural area	81 (71.7)
Urban	(28.3)

fathers' education levels, foot sole massage with oils, warm application, hairdryer use, drive around were more frequent in high educated group than the low educated group (p-values are 0.031, 0.002, <0.001, 0.007 respectively). Drinking herbal tea was more frequent in low educated group (p=0.002). The results were showed in Table 5.

It was observed that the parents of the only patient who underwent acupuncture were in the group with high education and income levels.

Table 2. Complementary and alternative medicine methods used*

Treatment method	Patient group n=110
Used medication, n (%)	90 (79.6)
Benefit from medication (none/partial/complete), n	15/68/7
Medication side effect, n (%)	0
Use of CAM, n (%)	103 (91.2)
Benefit from CAM (none/partial/complete), n	9/59/35
CAM side effect, n (%)	0
CAM and medication use together, n (%)	74 (65.5)

*More than one method could be specified for the same patient, CAM: Complementary and alternative medicine

Table 3. The comparison of CAM methods according to family income

	Family income		p-value
	Low n=43 n (%)	High n=60 n (%)	
Massaging the abdomen/back	37 (86.0)	54 (90.0)	0.537
Foot sole massage with herbal oils (lavender/apple/thyme)	4 (9.3)	9 (15.0)	0.391
Drinking herbal tea	29 (67.4)	36 (60.0)	0.440
Warm application to the abdomen	2 (4.7)	22 (36.7)	<0.001
Operating a hairdryer	7 (16.3)	32 (53.3)	<0.001
Drive around	24 (55.8)	40 (66.7)	0.263
Drinking sugar water	4 (9.3)	4 (6.7)	0.717
Wearing an evil eye bead	4 (9.3)	10 (16.7)	0.282
Prayer/amulet	4 (9.3)	18 (30.0)	0.011
Swaddle	13 (30.2)	20 (33.3)	0.739
Shake	20 (46.5)	28 (46.7)	0.988

CAM: Complementary and alternative medicine

Discussion

This study's data showed that CAM methods had been used at a high rate in babies diagnosed with IC in Izmir province, and the most frequently used methods were abdominal and back massage.

A meta-analysis study about the frequency of CAM use in children reported that it is used at a rate of 52% in European countries (9). Two separate studies reported that the frequency of CAM use in children in Turkey was 58.6% and 56.5 (10,11). In our country, the most common reason for CAM use was IC (50%), and in a study in Afyon, CAM use in IC colic was reported as 66% (7,12). In our study, this rate was 91.2%, and it was higher than the literature. These increasing high rates determined in Turkey and Izmir were thought to occur since no effective medical treatment for IC and CAM methods became widespread.

CAM methods used for IC vary from region to region, both globally and in our country. In studies conducted in the southeast part of Turkey, the most common CAM method used by parents for IC was relieving baby gas, while in the study conducted in west part of Turkey, the most commonly used IC method was reported as massage (7,12). Our investigation determined that the most frequently used method was the abdominal and back massage, followed by drinking herbal tea and driving around. The massage is the most commonly used method for IC in Afyon, and Izmir, the west of Turkey, suggests that socio-cultural differences affect the CAM methods (7).

Although massage is thought to improve symptoms significantly and has no side effects, evidence-based data are limited. A study conducted in Germany stated that 50% of the mothers applied massage therapy; baby massage calmed the baby by providing many sensorial stimuli and improved mother-baby interaction (10,13,14). It is essential to warn parents about this condition, as methods such as massage with vegetable oils can cause serious side effects by absorption from the skin and accidental ingestion.

In the literature, it has been reported that some mothers consume some herbal teas such as chamomile, lemon balm, fennel, licorice root, and anise tea both themselves and their babies (11,15). Studies showing that herbal tea is effective in treating colic are rare. One of the most critical problems in the therapeutic use of herbal teas is that the doses

Table 4. The comparison of CAM methods according to mothers' education levels

	Maternal education level		p-value
	Low n=51	High n=52	
Massaging the abdomen/back	43 (84.3)	48 (92.3)	0.206
Foot sole massage with herbal oils (lavender/apple/thyme)	4 (7.8)	9 (17.3)	0.148
Drinking herbal tea	37 (72.5)	28 (53.8)	0.049
Warm application to the abdomen	2 (3.9)	22 (42.8)	<0.001
Operating a hairdryer	7 (13.7)	32(61.5)	<0.001
Drive around	24 (47.1)	40 (76.9)	0.002
Drinking sugar water	6 (11.8)	2 (3.8)	0.160
Wearing an evil eye bead	6 (11.8)	8 (15.4)	0.592
Prayer/amulet	6 (11.8)	16 (30.8)	0.019
Swaddle	15 (29.4)	18 (34.6)	0.571
Shake	26 (51.0)	22 (42.3)	0.378
CAM: Complementary and alternative medicine			

Table 5. The comparison of CAM methods according to fathers' education levels

	Paternal education level		p-value
	Low n=36	High n=67	
Massaging the abdomen/back	30 (83.3)	61 (91.0)	0.335
Foot sole massage with herbal oils (lavender/apple/thyme)	1 (2.8)	12 (17.9)	0.031
Drinking herbal tea	30 (83.3)	35 (52.2)	0.002
Warm application to the abdomen	2 (5.6)	22 (32.8)	0.002
Operating a hairdryer	5 (13.9)	34 (50.7)	<0.001
Drive around	16 (44.4)	48 (71.6)	0.007
Drinking sugar water	4 (11.1)	4 (6.0)	0.446
Wearing an evil eye bead	6 (16.7)	6 (11.9)	0.553
Prayer/amulet	4 (11.1)	18 (26.9)	0.063
Swaddle	12 (33.3)	21 (31.3)	0.836
Shake	19 (52.8)	29 (43.3)	0.357
CAM: Complementary and alternative medicine			

and side effects are not standardized, and the other is that it reduces the amount of nutrition (16). Herbal tea was found to be the second most commonly used CAM method for IC in our study.

The least used method in our study was found to be acupuncture (9,16). Currently, acupuncture is one of the recommended CAM methods for IC treatment. The results of studies on acupuncture are inconsistent. A systematic review of the practice concluded that needle percutaneous acupuncture treatment should not be recommended for IC babies (1).

In the literature, Tuncel et al. (17) reported that the parents' education level did not affect CAM's use in the Diyarbakir region. In the study on CAM methods used in IC treatment in Afyon, it was reported that the frequency of CAM use increased with the increase in the level of education, and the most common method they used was massage (7,18). In our study, the rate of CAM use was high, and the use of the hot application, hairdryer, driving around with a car, and the use of evil eye beads were statistically significantly different in the high-level education group. Although it is said that the use of CAM in IC treatment is higher in our country since it is a developing country, the high rate of CAM use by mothers with high education levels contradicts this view (14). The role of fathers in the selection of IC treatment may be related to the parental equitable behavior model in Izmir province.

Considering the families' socio-economic status, some studies in the literature showed that CAM was applied in 87% of the children of low-income families (19). There are studies reporting that mothers with higher education and high income also apply CAM methods (20). Contrary to in Europe and our country, it was reported in some studies conducted in the USA that the demographic characteristics and education level of the parents did not affect the use of CAM methods (21). In our study, the family's income level and economic status changed the CAM method selected, and parents with a good income significantly preferred hot application, using a hairdryer and praying methods. This result may be due to parents with better socio-economic conditions, ease of access to information and a doctor.

When the literature is examined, it was stated that many parents avoid talking to their doctors about CAM use because of their negative attitude towards the methods, but contrary to popular belief, 85%

of the doctors displayed a positive attitude towards CAM methods (7,22,23). In our study, most of the parents who used medical treatment reported partial benefits from the medication, and the parents who used CAM had similar partial benefits. However, most of the patients applied CAM methods along with medical treatment, and some stated that they used several CAM methods together. In our study, CAM methods were used most frequently with the doctor's recommendation (30.1%), and the decision-makers were most often the family elders (31.1%). With these data, it can be concluded that doctors are the most critical resource for CAM use and that there is no opposing party to using these methods. It is currently said that the first step of IC management is counseling to parents (24,25). These results led us to think that doctors should inform families about the use of CAM, which is not based on evidence, and warn them regarding several issues.

This study was a descriptive study, so any outcome related to the causality is not possible. In addition it was a survey study, which might have the risks of perfunctory, exaggeration, concealment and short-term memory biases.

Conclusion

This study showed that the use of CAM rates for the treatment of IC is relatively high. The education and income level of the family affects the alternative and complementary medicine methods used. Physicians should have awareness and knowledge about CAM methods, which have been increasingly used in recent years.

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Ethics

Ethics Committee Approval: The study was approved by ethics committee of University of Health Sciences Turkey, Dr. Behçet Uz Pediatric Diseases and Surgery Training and Research Hospital (approval number: 2018/212, date: 02.08.2018).

Peer-review: All our patients' parents' informed consent has been received.

Authorship Contributions

Concept: N.H., Ö.B., T.T., Design: N.H., Ö.B., Ö.B.S., Data Collection or Processing: N.H., Ö.B.S., Analysis or

Interpretation: N.H., T.T., Literature Search: N.H., Ö.B., T.T., Ö.B.S., Writing: N.H.

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