Parental Knowledge, Attitude and Practices Regarding Fever in Their Children: A Hospital Based Observational Study

Uday C. Rajput[1*], Srikanth Kulkarni[2], Sambhaji S. Wagh[3]

[1,2]Assistant Professor, [3]Professor, Department of Pediatrics, Government Medical College, Miraj 416410, Maharashtra, INDIA.

[*]Corresponding Address:

drudayrajput@gmail.com

Research Article

Abstract: **Objective:** To analyse the understanding of fever, its dangers and treatment practices among parents before consulting doctor. **Methods:** A questionnaire based interview with parents bringing their febrile children less than 6 years of age to the outpatient department of pediatrics were included in the study. The appropriateness of response to questions was determined on the basis of current medical literature. **Results:** Hundred parents were included in study. Most parents (84%) consulted a doctor by the 2nd day of fever and 92% had no idea about normal body temperature. Half of parents knew that fever was a symptom, 21% felt that it was a disease and 63% believed fever would rise without limit. Antipyretic medication was preferred by 51% parents, paracetamol was the most common drug with only 27% used drug in appropriate dose, 51% resorted to sponging and 4% used antibiotics without any prescription. Most common feared complication was convulsion (28%) and 10% felt that fever can cause death. Most common source of information about fever was doctors (59%). **Conclusion:** Owing to gross misconceptions, parents expect unrealistic complications. Over exaggerated fear and concern about increasing fever warranted use of antipyretics and sponging with inappropriate dosing. It would be advisable to impart the knowledge by general guidelines regarding fever management to the parents.

Keywords: Fever, convulsion, antipyretics, paracetamol, sponging, fever phobia.

Introduction

Fever is an extremely common occurrence in pediatric patients and it is the most common complaint to be presented to the practitioners. Fever is defined as a controlled increase in body temperature over the normal values for an individual[(1)]. A rectal temperature of 38.0ºC or more, an oral temperature of 37.5ºC or more and an axillary temperature of 37.2ºC or more, are all considered fever.[(2, 3)] Fever occurs due to various infectious and non-infectious processes that interact with the host's defence mechanism. Although fever was considered as a protective response for thousands of years, using of antipyretic drugs has led to the common belief that fever is maladaptive and harmful[(4)]. In 1980 Dr Schmitt was the first to use the term "fever phobia" to describe parents' unrealistic fears about fever associated with numerous misconceptions about its management. Various other studies have revealed that parents have several misconceptions and beliefs about fever, its role in illness and its management.[(5, 6)] As wide range of childhood illnesses are accompanied by fever, many of which are treated at home prior to presentation to hospital due to fear of complications like convulsion, brain damage and death by the parents. Educational programs have been developed to assist parents to manage childhood fever have proven effective. Very few studies were conducted in India and no studies were reported from Maharashtra. So this study has been designed to identify basic knowledge of the parents about fever and to identify parents' belief and practice regarding childhood fever management and prepare guidelines for parental management of fever.

Material and Methods

Aim of the study is to identify the parental knowledge about fever in children and understand the belief and misconception in the management of fever. Type of study: Prospective questionnaire based observational study

Setting: Tertiary care hospital, Government medical college, Miraj, Maharashtra.

Subjects: Children with age less than 6 years and fever as one of the presenting complaint in the outpatient department. **Duration of Study:** July 2013 to December 2013.

Sample size: 100

Inclusion Criteria

1. Children less than 6 years presenting with fever.
2. OPD based patients.

Exclusion Criteria

1. Acutely ill child
2. Requiring inpatient admission.
3. Parents not giving consent.

Methodology:

1. All patients' parents who are satisfying inclusion criteria will be interviewed according to preformed questionnaire.
2. Detailed demographic parameter will be noted.
3. Preformed questionnaire is designed to include parental basic knowledge about fever like what is normal temperature? Source of knowledge about fever, home based management for fever and feared complication in fever.
4. Ethical committee approval taken.
5. Statistical analysis will be done by Microsoft excel 2010.

Results

Total 100 parents were included in study. In most of the cases (73%) mother was informant and most of them were housewives. Maximum numbers of parents (86%) were educated with 38% completed primary education. (Ref Table I)

Maximum number of parents (84%) treated the child with home remedies before consulting doctor on 2nd day of fever. (Ref Chart I) Very few parents (8%) were able to tell correct body temperature of normal baby. Maximum parents (51%) perceive fever as a symptom and 21% described it as disease and most of them have anxiety that fever will rise without limit if not treated. Around 59 % of parents said that knowledge about fever and treatment was acquired from previous visit to doctor and 31% had their knowledge from friends and relatives. (Ref Table II) Half of the parents used anti- pyretic medications to bring down the fever, paracetamol was the most common drug and 65 % used the drug with inadequate dose. Other common remedial measure was sponging and most of the parents used tepid water for whole body sponging. Antibiotics were used by 4 % of parents without any prescription or indication. Very few used herbal medications, honey and glucose powder. (Ref Table III) Maximum number of parents (28%) feared convulsion as complication of fever and 10 % of parents felt that fever can lead to death if not treated immediately. (Ref Table IV)

Table 1: Socio-Demographic data of parents Participated in the study

Gender	No of parents
Male	27
Female	73
Age of mother	
15-25	51
26-35	21
>35	1
Age of father	
15-25	7
26-35	15
>35	5
Education status	
Illiterate	14
Primary education	38
Secondary education	32
Higher secondary	9
Graduate	7
Occupation	
House wives	68
Unskilled	22
Skilled	8
Professional	2

Table 2: Parental knowledge about fever

Parents response	Total (No-100)
Normal temperature	
Commented 8 (Correct temperature) (5)	
No idea	92
Perception	
Symptom	51
Disease	21
Both	1
No idea	27
Rise in Fever	
Up to a limit	26
Without limit	63
No idea	11
Source of knowledge	
Doctors	59
Reading material	5
Relatives and friends	31
Own parents	5

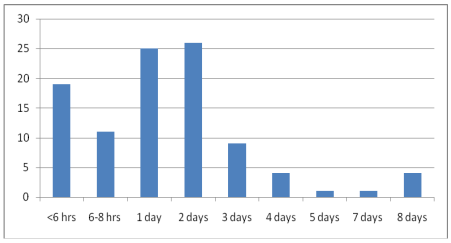

Figure 1: Duration between onset of fever and consultation to doctor

Table 3: Methods used by parents for the management of fever

Methods	No of parents
1. Anti pyretic use	
Yes	51
No	49
Type of antipyretic	
Paracetamol	42
Nimesulide	3
Mefenamic acid	4
Combination	2
Dosage	
Adequate	14
Less	25
Overdose	12
2. Sponging use	
Yes	51
No	49

Type of water	
Tepid	47
Hot	4
Cold	none
Body part	
Whole body	45
Only head	6
3. Other modes	
Antibiotics	4
Herbal	1
Milk	2
Oil	2
Glucose powder	1
Honey	1

Table 4: Feared complications due to fever

Complications	**No of parents**
Convulsions	28
Brain damage	15
Death	10
Irritability	10
Typhoid	9
Malaria	4
Pneumonia	8
Jaundice	6
Loss of appetite	6
Vomiting	6
Insomnia	7
Weakness	8
HIV	1
Cry	6

Discussion

In present study 92% parents had no idea about the normal temperature and similar result was found by Blumenthal [7]. Whereas a study in Chandigarh by Singhi et at[8] showed around half of the parents had fair knowledge about temperature and in a Norwegian study, Eskerud et al[9] noted almost all the respondents had a fair idea about normal body temperature as well as its diurnal variation. This may be due to difference in parents knowledge as shown in present study, most of parents completed only primary education. When questioned about the perception of fever, 51% felt that fever was a symptom and 21% felt that it was a disease itself. When compared to the Chandigarh study 35% considered it as a symptom and majority i.e. 58% felt it was a disease [8]. As reported by global literature parents have been shown to have unrealistic fears of the harmful effects of fever in their children, and they generally see it as the main component of an illness [2, 5]. Majority of parents (63%) in this study feared that fever could rise uncontrollably which echoed the findings of the Chandigarh study [8]. In another study conducted in Saudi Arabia, more than 70% of parents demonstrated a poor understanding of the maximum temperature of untreated fever[10]. This is not true because hypothalamic "thermostat," if uninfluenced by complicating circumstance (e.g., heat stroke or drugs), seems to exert a shutoff valve phenomenon so that high temperatures are generally kept below a level that would seriously damage body tissues. Maximum number of parents (28%) in this study feared convulsions as the complication of fever followed by brain damage and death. In Saudi Arabia approximately 95% of parents demonstrated undue fear of consequent body damage from fever, including convulsion, brain damage or stroke, coma, serious vague illness, blindness, and even death.[10] Crocetti et al from American study found that 21% of caregivers listed brain damage as the number one harmful effect of fever and 14% listed death[6]. In contrast to these dehydration (80%) and discomfort (75%) was reported by Canadian parents[11]. Medical research states that adverse effects of fever include discomfort, mild dehydration, febrile delirium and uncomplicated seizures. Over exaggerated fear and concern about increasing fever warrants use of anti pyretic to bring down the temperature. In our study, 51% parent's used anti- pyretic medications to bring down the fever and among them 83% used paracetamol with 24% parents ended up giving an overdose. In the Chandigarh study, 57% used paracetamol to bring down fever. A Denmark study reported parental views of paracetamol were that their feverish child felt better, became more alert and slept easier after taking paracetamol[12]. Al-Eissa highlighted the inability of parents to appropriately administer the correct dose of antipyretic[13]. In Israel a total of 57% of parents treated children with incorrect doses of antipyretic drugs and 11% were given a daily dose that could cause severe toxicity[14]. On the other hand, according to a UK based study, most care taker administered paracetamol appropriately for a perceived feverish illness [15]. In this study the other most commonly resorted measure was sponging (51%). Zyod et al from Palestinian study reported 49.8% of parents stated that they preferred cold sponges to treat fever [16]. Unlike antipyretics, external cooling acts not by reducing the elevated set point but by overwhelming the metabolically expensive effect or mechanisms that have been evoked by the elevated set point[17].A Cochrane systematic review found a few small studies demonstrating that tepid sponging alone helps to reduce fever in children[18]. Jalil et al stated that research literature confirmed that sponge bathing is ineffective and causes shivering, which increases the body's temperature, as the hypothalamus attempts to offset the decrease in body temperature produced by sponging[4]. Recent NICE guidelines suggested that sponging is not effective in fever management[19]. Majority of parents (59%) in this study, claimed to have derived this information from doctors, 31% from relatives and 5% each from their own parents and reading material. Similar results were seen from the Italian study by Chiappeni et al, in which

majority of parents (67%) reported to consider their paediatrician as their primary resource for information about fever [20]. Another study from Kanpur, India noted majority of parent's (62.80%) main source of information about fever were health education talks at clinics and hospitals during previous illnesses and vaccination[21].

Conclusion

Undue concern about rising temperature may be heightened by the lack of knowledge regarding fever's role in illness. Parents need to be educated that fever is a physiologic response to an insult that stimulates the body's inflammatory defences. Hence based on our study findings and various references we recommend highlighting the following points during counselling of the parent regarding fever during OPD visit.

1. Fever is *not a disease* by itself. It is due to some underlying illness which may be due to either infectious or non-infectious etiology.
2. *Single antipyretic drug* with appropriate dose should be used for the management of fever if child is distressed due to fever. *Paracetamol* is preferred drug.
3. Antipyretic agents do not prevent febrile convulsions and should not be used specifically for this purpose.
4. Parent should consult paediatrician/ doctor immediately avoiding unnecessary home based remedies.

There were some limitations to this study. Our study may not be generalised to whole of the Indian population and sample size in this study was small. There requires population based studies.

Contributors

Planning and writing of manuscript was done by UCR and SSW. Study was done by SSK.

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Conflict of interest None

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References

1. Linda S, Nield., Kamath D. Fever In Nelson Textbook of pediatrics. 19th ed. Kliegman RM, Behrman RE, Jenson HB, Stanton BF, editors. Philadelphia: Saunders; 2011. 896-98 p.
2. Adam D, Stankov G. Treatment of fever in childhood. European journal of pediatrics. 1994; 153(6):394-402.
3. Schmitt BD. Fever in childhood. Pediatrics. 1984; 74(5 Pt 2):929-36.
4. Jalil H, Jumah NA, Al-Baghli AA. Mothers' Knowledge, fears and self management of fever: a cross sectional study from the capital governorate in Kuwait. Kwt Med J. 2007; 39(4):349–54.
5. Schmitt BD. Fever phobia: misconceptions of parents about fevers. American journal of diseases of children. 1980; 134(2):176-81.
6. Crocetti M, Moghbeli N, Serwint J. Fever phobia revisited: have parental misconceptions about fever changed in 20 years? Pediatrics. 2001; 107(6):1241-6.
7. Blumenthal I. What parents think of fever. Family practice. 1998; 15(6):513-8.
8. Singhi S, Padmini P, Sood V. Urban parents' understanding of fever in children: its dangers, and treatment practices. Indian pediatrics. 1991;28(5):501-5.
9. Eskerud JR, Hoftvedt BO, Laerum E. Fever: knowledge, perception and attitudes. Results from a Norwegian population study. Family practice. 1991; 8(1):32-6.
10. Youssef A, Abdullah M, Suleiman A, Mohammed A, Sameeh S, Amal H, et al. Parental perception of fever in children. Ann Saudi Med 2000; 20((3-4)):202-5.
11. Karwowska A, Nijssen-Jordan C, Johnson D, Davies HD. Parental and health care provider understanding of childhood fever: a Canadian perspective. Cjem. 2002; 4(6):394-400.
12. Jensen JF, Tonnesen LL, Soderstrom M, Thorsen H, Siersma V. Paracetamol for feverish children: parental motives and experiences. Scandinavian journal of primary health care. 2010; 28(2):115-20.
13. al-Eissa YA, al-Zamil FA, al-Sanie AM, al-Salloum AA, al-Tuwaijri HM, al-Abdali NM, et al. Home management of fever in children: rational or ritual? International journal of clinical practice. 2000; 54(3):138-42.
14. Linder N, Raz M, Sirota L, Reichman B, Lubin D, Kuint J, et al. Unexplained fever in neonates may be associated with hepatitis B vaccine. Archives of disease in childhood Fetal and neonatal edition. 1999; 81(3):F206-7.
15. Mason S, Thorp S, Burke D. Prehospital use of paracetamol among children attending the accident and emergency department. Emergency medicine journal: EMJ. 2003; 20(1):88-9.
16. Zyoud SH, Al-Jabi SW, Sweileh WM, Nabulsi MM, Tubaila MF, Awang R, et al. Beliefs and practices regarding childhood fever among parents: a cross-sectional study from Palestine. BMC pediatrics. 2013; 13:66.
17. Mackowiak PA. Assaulting a physiological response. Clinical infectious diseases: an official publication of the Infectious Diseases Society of America. 1997; 24(6):1214-6.
18. Meremikwu M, Oyo-Ita A. Physical methods for treating fever in children. The Cochrane database of systematic reviews. 2003(2):CD004264.
19. Feverish illness in children: Assessment and initial management in children younger than 5 years: NICE clinical guidelines [Internet]. May 2013. Available from: guidance.nice.org.uk/cg160.
20. Chiappini E, Parretti A, Becherucci P, Pierattelli M, Bonsignori F, Galli L, et al. Parental and medical knowledge and management of fever in Italian pre-school children. BMC pediatrics. 2012; 12:97.
21. Agrawal RP, Bhatia SS, Kaushik A, Sharma CM. Perception of fever and management practices by parents of pediatric patients. Int J Res Med Sci. 2013; 1(4):397-400.