ORIGINAL ARTICLE

COMPARISON BETWEEN ANTIPYRETIC AND COLD SPONGING VERSUS ONLY ANTIPYRETIC IN TREATMENT OF FEVER IN PEDIATRICS AGE GROUP

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ABSTRACT

Objective: To compare the antipyretic and cold sponging versus only antipyretic for treatment of fever.

Material and Methods: This Randomize control trial was conducted at pediatrics department Khyber Teaching Hospital Peshawar - Pakistan, from August 2017 to December 2017.Total sample of 100 patients were selected randomly for study, written informed consent were taken from parents. Patients were divided into two groups. Group A was given only paracetamol while group B was given paracetamol and cold sponging was also applied, then temperature was checked at 0, 30, 60, 90 and 120 minutes, discomfort was also noted at these intervals . Data was collected by predesigned questionnaire and processed by SPSS 17.

Results: Out of total 100 patients 53(53%) were males while 47(47%) females. Mean age was 6.4±2.8 years with minimum of 2 and maximum of 13 years. We had noted that in group B i.e. those who were given antipyretics and applied cold sponging, the decrease of temperature was rapid than those who were given only antipyretics ie. Group A especially in first 30 minutes. Moreover after 2 hours the temperature reached to normal range in both groups but the decrease was more rapid in group B than group A.

Conclusion: Fever treated with antipyretic and cold sponging fall faster in the first 30 mint and those treated with only antipyretic the temperature drop was a bit slower but at the end of two hours both reached the same level.

Key Words: Fever, Cold sponging, Antipyretics, pediatric age group.

This article may be cited as: Khaliq A, Zeb R, Khan S, Tahir M, Ahmed I, S IAM. Comparison between antipyretic and cold sponging versus only antipyretic in treatment of fever in pediatrics age group. J Med Sci 2019; 27: (1) 3-6.

INTODUCTION

Fever is one of the commonest symptoms presenting to doctors. It is a result of wide range of infections, inflammations, rheumatologic and immunological conditions[1]. It occurs because of actions of pyrogens, both endogenous or exogenous, on the thermoregulatory centre in the Hypothalamous[2,3]. Because of pyrogens effect the set point of normal temperature is disturbed. It is set at level higher than normal. As a result the thermoregulatory centre of the brain feels that the body temperature is lower than the set point, and it turns on the heat producing processes, so that the body temperature can be raised to the set point. As a result the body temperature is raised, which is called feve[4-6]. In the literature, there is a large discussion regarding the beneficial and harmful effects of fever. Some researchers consider it helpful in combating the disease process[3,7]. While others are concerned about the dangerous effects upon the body[8,9].

Different doctors use different methods to treat fever symptomatically. An antipyretic medication is the main stay of treatments that inhibit prostaglandin production and thus decrease the body temperature[10-13]. Cold sponging and most of the other physical methods do not act on the temperature set point of hypothalamus, and thus decrease body temperature only by its cooling effect[14,15].

Different physical modalities are use to decrease fever that includes removing clothing, bathing, exposing child to cold air and cold sponging. Physical methods of decreasing body temperature is less expensive, easily

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Date Received: 25 December 2018
Date Revised: 16 January 2019
Date Accepted: 20 February 2019

available, can be given by anyone but on the other hand it is not clear that either it is beneficial or not when compared with antipyretic medication. Some researches are in favor of physical methods of decrease fever while others are not because it can lead to discomfort, crying, bed wetting and shivering of child[7].

As cold sponging as well as antipyretics are commonly used to decrease temperature. We conducted this study to compare the antipyretic and cold sponging verses only antipyretic for treatment of fever.

MATERIAL AND METHODS

It was a randomized controlled trial conducted at Department of Pediatric Medicine, MTI, Khyber Teaching Hospital, Peshawar, Pakistan. A total of 100 patients were selected, 50 in each group, non-probability consecutive sampling. was done. All those patients with age more than one year and less than 14 years, axillary temperature of ≥101oF, those parents agreed and giving informed consent were included in the study.

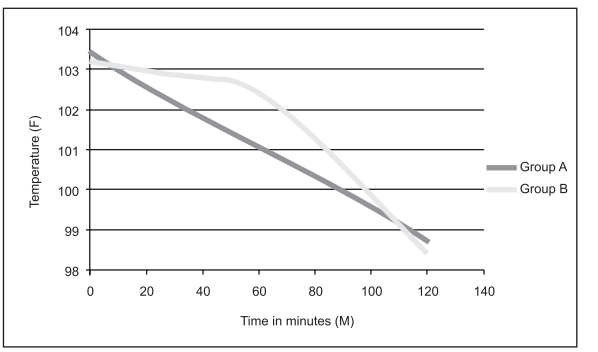
Patients on intensive care i.e. having endotracheal tube, on peritoneal dialysis, catheterized, having nasogastric and/or chest tube, or on oxygen inhalation, axillary temperature of <101°F with major congenital malformation (cardiac, skeletal, renal, dysmorphism etc), critically ill patients(victims of burns and traumas, tachyponic, cayanosed), hemodynemically unstable patients , patients having fits, patients who have received any type of antipyretic or steroids in the last six hours were excluded from the study.

Written informed consent were taken from parents. Patients were randomly divided into two groups (A and B), the first patient presented to emergency pediatric service was included to group A by toss and then alternate patient was included in either group. Group A was given only paracetamol 15 mg/kg and group B was given paracetamol and cold sponging also applied, then temperature was checked at 0, 30, 60, 90 and 120 minutes, discomfort was also noted at these intervals. Data was collected by predesigned questionnaire containing variables of interest by interviewers and processed using SPSS17. Frequency and percentages were calculated for categorical variables while mean and standard deviation were calculated for continuous variables.

RESULTS

Out of total 100 patients 53(53%) were males while 47(47%) females. Mean age was 6.4±2.8 years with minimum of 2 and maximum of 13years.Out of 50 patients in each group, 26 were male & 24 were females in group A while 27 males and 23 females in group B.

We had noted that in group B i.e. those who were given antipyretics and applied cold sponging, the decrease of temperature was rapid than those who were given only antipyretics ie. Group A especially in first 30 minutes as shown in Table 1. Moreover after 2 hours the temperature reached to normal range in both groups but the decrease was more rapid in group B than group A as shown below: Also the figure shows that the only benefit of cold sponging is decrease of temperature in first 30minutes.



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DISCUSSION

Fever is a common complaint at which majority of the patient present to emergency pediatric service and is commonly treated with antipyretic and cold sponging. Our present study showed that fever treated with antipyretic and cold sponging fall faster in the first 30 mint and those treated with only antipyretic the temperature drop was a bit slow but at the end of two hours both reached to normal level. These findings are supported by a study conducted at Brazil by Alves JG and co. who stated that the group which was given antipyretic and applied cold sponging the temperature decrease faster in first fifteen minutes while the other group which was given only antipyretic the temperature decrease slower. Cold sponging decrease the temperature but it produce discomfort and irritability in pediatric age group[8,16-18]. Aluk TM at south Nigeria also stated that cold sponging decrease the fever faster in the first 30 minutes although it produce discomfort and irritability but it is important to decrease the temperature rapidly and to decrease the chances of febrile fits on the other hand paracetamol

Table 1: Temperature record at intervals

Temperature (^{o}F)	Groups	At Presentation	After 30 minutes	After 60 minutes	After 90 minutes	After 120 minutes
98.00-98.99	A	0	0	0	0	15
	B	0	0	0	0	15
99.00-99.99	A	0	0	0	1	35
	B	0	0	1	8	33
100.00-100.99	A	0	0	0	22	0
	B	0	0	2	38	2
101.00-101.99	A	0	0	3	26	0
	B	0	2	40	4	0
102.00-102.99	A	3	7	19	1	0
	B	3	36	7	0	0
103.00-103.99	A	31	36	28	0	0
	B	20	12	0	0	0
104.00-104.99	A	16	7	0	0	0
		27	0	0	0	0

decrease the temperature gradualy[9-19,20]. Also Purssell stated that cold sponging and antipyretic decrease the fever faster than only antipyretic in pediatric age groups[5-21,22]. S Thomas in India also noted that when antipyretic and cold sponging were applied to febrile patient that decrease the fever faster while those who were given only antipyretic the decrease of temperature was slow in the first 15 minutes, but at the end of two hours both reached to same level[10-23,24].

Although in this study we did not include the patient's discomfort, again it was noted that patient's discomfort was very much less in group A. Parents were also comparatively more happy in group A.

CONCLUSION

Fever treated with antipyretic and cold sponging fall faster in the first 30 mint and those treated with only antipyretic the temperature drop was a bit slower, but at the end of two hours both reached to same level.

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CONFLICT OF INTEREST: Authors declare no conflict of interest

GRANT SUPPORT AND FINANCIAL DISCLOSURE NIL

AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Khaliq A: Principal author.

Zeb R: Data Analysis.

Khan S: Supervision.

Tahir M: Data Analysis.

Ahmed I: Supervision.

S IAM: Helped in writing.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.