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# Effectiveness of Tepid Sponging and Paracetamol Versus Paracetamol Alone in the Management of Fever in Children Between 1 to 5 Years

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**Abstract**

*Objective:* To compare the effectiveness of Paracetamol versus Paracetamol and Tepid sponging in the management of fever.

*Methods:* Children admitted with fever randomly grouped into two groups. PCM was given in the dose of 15-20mg/kg, 6hrly in Group 1 (odd number group) and PCM plus TS was given in even number group (Group 2). Temperature was measured after half an hour and after one hour. Fischer exact test was done to compare the relief of temperature between the two groups.

*Results:* Total 34 children were included in both the groups. 38 children were between I2 mo to 36 months 30 were above 3 years.38 males and 30 females included in the study. Commonest cause for fever was viral fever, upper and lower respiratory tract infections. Fever was absent after 30 mts in 26 children in Group 1 (PCM alone ) and in 31 children a in Group II. At the end of one hour 33 out of 34 chidren had no fever in Group 2, where as in group 1 27/34 had no fever. It was observed that there was a statistically significant difference in temperature relief rates in the PCM plus TS group (Group 2) when compare to PCM alone (p value-0.027). That is the PCM plus TS had a significantly faster relief than the PCM only group. At the end of one hour also, it was observed that 33 out of 34 children in combination group had relief of high temperature when compared to PCM alone group. This difference was also found to be statistically significant (p value-0.011).

*Conclusion:* PCM with TS is more effective in controlling fever than PCM alone. No adverse effects noted with TS. TS well tolerated when it is done properly under supervision and no adverse effects noted.

**Keywords:** Fever; Paracetamol; Tepid sponging; Temperature

## Introduction

Fever is a common childhood problem faced by the pediatricians in both hospital and community settings. However, the nursing management of fever in children is often not based on research and remains inconsistent in practice.[1,2] Several methods have been recommended to reduce fever in children, which include tepid sponging, fanning and antipyretics. However, controversy surrounds the use of tepid sponge for reduction of fever. The effectiveness of tepid sponging as a treatment alongside antipyretic varies between studies, with some finding that it is of no benefit[3] and others suggesting that it is helpful.[4]

Paracetamol (PCM) is the time tested and safe and effective antipyretic in children. Tepid sponge (TS) when we do it properly, very effective in reducing temperature. It has no extra cost, no adverse effect and parent involvements is great. Paracetamol alone is widely practiced everywhere where as comparison of paracetamol alone with paracetamol plus tepid sponging is less.[5,6]

Therefore, we conducted a study to compare the effectiveness of tepid sponging and paracetamol versus paracetamol alone in the management of fever among children.

**Table 1:** Clinical Profile of Children Treated with Paracetamol Vs Paracetamol Plus Tepid Sponging.

| Clinical Profile | Group 1 (PCM alone) | Group 2 (PCM plus TS) |
|---|---|---|
| Number | 34 | 36 |
| Sex M:F | 18:16 | 20:14 |
| Age: 12mo-36mo | 20 | 18 |
| 37mo-60yr | 14 | 16 |
| Diagnosis | | |
| VF | 11 | 16 |
| UTI | 4 | 2 |
| URTI/LRTI | 11 | 16 |
| ADD | 4 | 3 |
| Others | 4 | 7 |
| No Fever at 30mts | 26 | 31 |
| No fever at 60 mts | 27 | 33 |

## Objectives

To compare the effectiveness of Paracetamol versus Paracetamol and Tepid sponging in the management of fever

## Methodology

Children aged between one to five years were included in the study. Children admitted in our tertiary care hospital with infection like pneumonia, UTI, viral fever etc are included in the study.

Children below one year is not included due to practical difficulty in this age group. Also children with serious illness that require ICU admission also excluded from the study.

All Children admitted with fever are randomly grouped into two g oups.on alternative number basis. PCM was given in the dose of 15-20mg /kg, 6 hrly in Group 1 (odd number group) and PCM plus TS was given in even number group (Group 2). Tepid sponge was done under supervision. Luke warm water with large cloth was used. Dress was removed and sponging was done all over the body except head.

Temperature was measured using digital thermometer at half an hour and at one hour. Any adverse effects were also noted. All the children were treated with other drugs in usual manner eg: bacterial pneumonia with antibiotics. Normal temperature was considered as 98.6F.

Fischer exact test was done to compare the relief of temperature between the two groups at the end of half an hour and also at the end of 1 hr.

## Results

Total 34 children were included in both the groups. 38 children were between I2 mo to 36 months 30 were above 3 years.38 males and 30 females included in the study. Commonest cause for fever was viral fever, upper and lower respiratory tract infections. Other clinical profile is given in Table 1.

Fever was absent after 30 mts in 26 children in Group 1(PCM alone) and in 31 children a in Group II. At the end of one hour 33 out of 34 children had no fever in Group 2, where as in group 1,27/34 had no fever.

Fischer exact test was done to compare the relief of temperature between the two groups at the end of half an hour and also at the end of 1 hour after administration.

It was seen that there was a statistically significant difference in temperature relief rates in the PCM plus TS group (Group 2) when compare to PCM alone(p value-0.027). That is the PCM plus TS had a significantly faster relief than the PCM only group, at the end f 30 mts.

Similarly when examined at the end of one hour of PCM/PCM plus TS administration, it was observed that 33 out of 34 children in combination group had relief of high temperature when compared to PCM alone group. This difference was also found to be statistically significant (p value-0.011).

## Discussion

This study was to find out whether paracetamol

alone or paracetamol along with tepid sponging is more effective in controlling febrile episode in children. The main reason for decreasing the temperature in children is to reduce the risk of febrile convulsions, o reduce the discomfort to the children and relieve parental anxiety. Fever is just a manifestation of a disease but it causes significant discomfort in children. Hence reducing the temperature is important along with finding its etiology.[7,8]

It was seen that there was a statistically significant difference in temperature relief rates in the paracetamol and tepid sponging group when compared with paracetamol alone group. Similarly when examined at the end of one hour of paracetamol/paracetamol and tepid sponging administration, it was seen that all patients in the combination group had relief of high temperature when compared to the paracetamol alone group.

Paracetamol will reduce the temperature in first few minutes and later by tepid sponging. No adverse reaction in any of the children were noted in tepid sponging group. We could not find out any side effects due to Paracetamol also.

## Conclusion

PCM with TS is more effective in controlling fever than PCM alone. No adverse effects noted with TS. TS well tolerated when it is done properly under supervision and is more effective in conditions like febrile seizures, and other serious conditions were cardiopulmonary compromise is a problem due to high rise in temperature.

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