ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 03 | March - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

COMPARATIVE STUDY OF MONOTHERAPY AND ALTERNATING PARACETAMOL AND IBUPROFEN THERAPY FOR FEBRILE CHILDREN(1-12YEARS).

Paediatrics

Dr. Mahesh M. Jani 3rd Year Pediatric Resident.
Dr. Maulik Shah* Associate Professor, Pediatrics Dept. *Corresponding Author
Dr. Gunjan Ramani 3rd Year Pediatric resident.

ABSTRACT

This is a Comparative Prospective cohort type of study carried out at GGH hospital, Jamnagar from April 2022 to November 2022. Total 360 patients aged 1-12 years of age were recruited in the study as per the inclusion and exclusion criteria. Total 360 patients were divided in three groups. each group contains 120 patients. Group A received paracetamol orally 6 hourly, Group B received ibuprofen orally 6 hourly, and Group C received paracetamol and ibuprofen alternately orally 6 hourly for 48 hours with continuous temperature monitoring using a digital axillary thermometer. ethical clearance and consent were taken before inclusion in the study as per format within duration of 8 months. Out of 360 patients, 197(54.7%) males and 163(45.3%) females were studied. Out of 360 patients, aged 1-5 years 224(62.2%) patients, 5-10 years 102(28.3%) patients and 10-12 years 34(9.44%) patients were studied. Out of 360 patients, the mean time to subside fever for Group A was 6.31 hr, for Group B was 5.38 hr and Group C was 6.03 hr. out of 360 patients, the mean afebrile period over 48 hrs for Group A was 34.56 hr, for Group B was 30.13 hr and for Group C was 34.68 hr. we could conclude that ibuprofen subsides fever faster compared to paracetamol and alternate paracetamol and ibuprofen, but paracetamol and alternate paracetamol and ibuprofen are better than ibuprofen for maintaining afebrile period over 48 hours.

KEYWORDS

Fever, Antipyretic drug, Paracetamol, Ibuprofen.

INTRODUCTION:

Fever is a normal part of childhood illness affecting around 70% of children yearly. it can be miserable for a child, cause anxiety for parents and be expensive for health services. Although fever is considered by many advantageous evolutionary by product of the host response to infection. the reason for treating fever is contested and necessarily evidence-based but includes minimizing discomfort, controlling fever, and preventing febrile convulsions. Options for treating fever include physical measures (taking cool fluids and dressing lightly) and the antipyretic drugs paracetamol and ibuprofen. Generally, we are using paracetamol and ibuprofen as antipyretics in children. so, the study involves investigating alternate therapy of paracetamol and ibuprofen or monotherapy of antipyretic alone better for treating fever in children.

AIMS and OBJECTIVES:

To Study the Efficacy of Alternating Therapy vs Monotherapy using Paracetamol and Ibuprofen for Antipyretic Treatment in Febrile Children(1-12years).

To Investigate whether Alternate Paracetamol and Ibuprofen is Superior to Either drug alone for increased Time Without Fever (Afebrile period) and Relief of Fever Associated Discomfort in Febrile Children(1-12years) at Hospital and Home settings.

MATERIALAND METHOD:

This is a Comparative Prospective study involving all patients who have fever present. This study conducted over a duration of 8 months from April 2022 to November 2022 at the G. G. hospital, Jamnagar.

Inclusion criteria:

1) Children aged 1-12 years in indoor hospitalized and Opd patients. 2) Axillary temperature at least 37.8 C(100.0 F) and up to 41 C(105.8 F).

Exclusion Criteria:

1) previously participated in another trial. 2) drug contraindications and drug allergy. 3) chronic illnesses like renal failure and liver failure. 4) bleeding disorder like thrombocytopenia. 5)loss of follow up or expired.

Ethical approval was obtained from the institutional ethics committee before the inclusion. After the informed consent total 360 patients divided in three groups as per inclusion criteria. Relevant history including epidemiological data, complaints, past history and any pre-existing medical condition was taken. Temperature monitoring over 48 hours done, recorded and group appropriate antipyretic drugs given every 6 hourly and laboratory investigations like CBC, RFT, SGPT etc. done.

Intervention:

1) Group A given Paracetamol 15 mg/kg every 6 hourly orally. 2) Group B given Ibuprofen 10 mg/kg every 6 hourly orally. 3) Group C given Paracetamol and Ibuprofen alternate 6 hourly orally(in the same dose as mentioned).

Outcome:

1) Time taken for temperature to reach baseline (98.6 F). 2) Time period for which patient remained without fever in 48 hours. 3) Adverse events.

Results were Analysed using standard statistical tests. P value<0.05 was considered significant.

RESULTS:

1) Distribution based on their gender:

In this study, Out of 360 patients 197(54.7%) Males and 163(45.3%) Females were studied.

Table- 1: Distribution Of Study Subjects Based On Their Gender

Gender	Frequency	Percentage
Male	197	54.7%
Female	163	45.3%
Total	360	100.0

2) Age Wise Distribution:

In this Study, Out of 360 patients aged 1-5years 224(62.2%), 5-10years102(28.3%) and 10-12years 34(9.44%) patients were studied. Maximum patients were between 1-5 years and Minimum were between 10-12years.

Table- 2: Distribution Of Study Subjects Based On Their Age

Age	Frequency	Percentage
1-5yr	224	62.2%
5-10yr	102	28.3%
10-12yr	34	9.44%
Total	360	100.0

3) Mean time to subside fever:

Out of 360 patients, The Mean time to subside fever for Group A was 6.31 hour, for Group B was 5.38 hour and for Group C was 6.03 hour. Group B(Ibuprofen) subside fever faster as compared to Group A and Group C.

Mean difference between time to subside fever among Group B was significantly (p value-0.0455) different from Group A and Significantly (p value-0.0129) different from Group C. However, there was no significant (p value-0.2877) difference between Group A and Group C.

Table- 3: Distribution Of Study Subjects Based On Their Mean Time In Which Fever Subsides.

Group	Mean time to subside fever
A	6.31 hour
B	5.38 hour
C	6.03 hour

4) Mean afebrile period:

Out of 360 subjects, The Mean Afebrile period over 48 hours for Group A was 34.56 hour, for Group B was 30.13 hour and for Group C was 34.68 hour.

The Mean difference between the Afebrile period over 48 hours among Group B was significantly (p value-0.0001) different from Group A and Significantly (p value-0.0001) different from Group C. However, there was no significant (p value-0.3446) differences between Group A and Group C.

Group A and Group C subjects had more Afebrile periods over 48 hours as compared to Group B.

Table- 4: Distribution Of Study Subjects Based On Their Mean Afebrile Period Over 48 Hours.

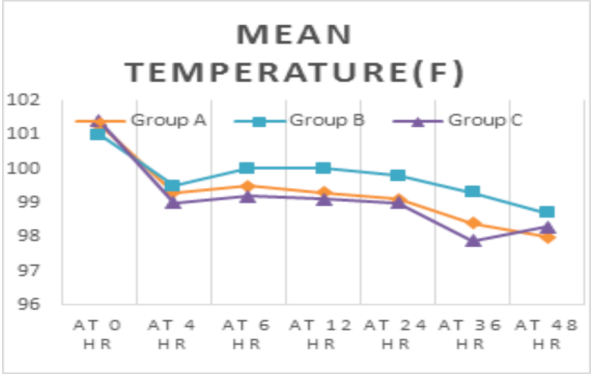
Group	Mean Afebrile period over 48 hours
A	34.56 hour
B	30.13 hour
C	34.68 hour

5) Mean temperature over 48 hours:

In this study, The Mean temperature over 48 hours were highest in Group B and lowest in Group C.

Table- 5: Distribution Of Study Subjects Based On Their Mean Temperature Over 48 Hrs.

Time	Mean Temperature over 48 hours		
	Group A	Group B	Group C
At 0 Hour	101.3 °F	101.0 °F	101.4 °F
At 4 Hour	99.3 °F	99.5 °F	99.0 °F
At 6 Hour	99.5 °F	100.0 °F	99.2 °F
At 12 Hour	99.3 °F	100.0 °F	99.1 °F
At 24 Hour	99.1 °F	99.8 °F	99.0 °F
At 36 Hour	98.4 °F	99.3 °F	97.9 °F
At 48 Hour	98.0 °F	98.7 °F	98.3 °F



CONCLUSION:

Ibuprofen (Group B) subsides fever faster as compared to Paracetamol (Group A) and Paracetamol and Ibuprofen alternately (Group C).

Group C (Paracetamol and Ibuprofen alternately) and Group A (Paracetamol) had a More Afebrile periods over 48 hours as compared to Ibuprofen (Group B). There were no significant Adverse drug effects.

REFERENCES:

1. Paracetamol Plus Ibuprofen for the Treatment of Fever in Children (PITCH) Randomised controlled trial, Alastair D Hay(2008).
2. Hay AD, Heron J, Ness A, The ALSPAC Study Team. The Prevalence of Symptoms and Consultations in Pre-School Children in the Avon Longitudinal Study of Parents and Children (ALSPAC): A Prospective Cohort Study. Fam Pract2005;22:367-74.
3. Eunician Tan. MBChB; Irene Braithwaite. Ph.D; Christopher J.D. McKinlay. Ph.D; Stuart R. Dalziel.Ph.D. Comparison of Acetaminophen with Ibuprofen for The Treatment of Fever or Pain in Children Younger than 2 years, A Systemic Review and Meta-analysis, JAMA network open, 2020; 3(10).
4. KLIEGMAN, ST GEME, BLUM, SHAH, TASKER, WILSON. Chapter- 201-204, Nelson. Textbook of Pediatrics, 21st edition, Page no.5642-5698.
5. Piyush Gupta, Chapter- 28, PG Textbook of Pediatrics,Volume-2, 3rd edition, (2022), page no.1330-1340.
6. KD Tripathi, Chapter-14, NSAIDS, Essentials of Medical Pharmacology, 8th edition (2011), page no. 217, 223, 224.
7. Wong T, Stang AS, Ganshorn H, Hartling L, Maconochie IK, Thomsen AM, Johnson DW, Combined and Alternating Paracetamol and Ibuprofen Therapy for Febrile Children, Cochrane Database of Systemic Reviews 2013, Issue 10.