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RESEARCH ARTICLE

KNOWLEDGE AND ATTITUDE OF CARE GIVERS ABOUT MANAGING FEBRILE CHILD IN MADINA REGION.

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Abstract

Introduction: Fever is a very common and basic symptom in pediatric population. Parents reaction to fever might put their child under risk of chronic hepatic toxicity in case of inappropriate use of antipyretics. We aimed to evaluate knowledge and attitude of care givers in Madina region toward a febrile child to determine if there is a risk of chronic acetaminophen hepatic toxicity.

Methodology: A cross sectional study was conducted , questionnaire was used as a collecting tool (electronic and paper based)Pilot study and pre-test has been done to clarify any ambiguous question. Specific coding mechanism was set, data were analyzed using the Statistical Package for the Social Sciences (SPSS) program.

Results: The vast majority of parents know their children's weight and they know the exact definition of fever. However, their knowledge about antipyretics in different routs of administration, duration between different doses regardless of the route and their action in case of persistence of fever in terms of the use of cold compression, are not satisfactory for a symptom which is very common like fever.

Conclusion and Recommendations: Physicians and pharmacists must explain to parents the appropriate dosing method of over the counter antipyretics.

It is preferable that these medications are suspended based on physician's prescription. Otherwise, Preparations which might lead to chronic liver toxicity should be replaced by other safe medications.

Introduction:-

Fever is a very common and basic symptom in pediatric population. Although it is a reflection of a good immune system to some extent, it might be a red flag for a serious condition.

Over counter antipyretics are common all over the world. However, reaction of care givers toward a child with fever are variable, their definition of fever is not necessarily clear specially with different measuring scale options. Doses and intervals in between might vary as well particularly if they use different routes of administration.

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Chronic liver toxicity in children whom are exposed to higher doses of acetaminophen is a significant health care issue that seems to be under investigated. We aimed to evaluate the current attitude of parents towards a febrile child. This is to highlight the importance of increasing the awareness of the society about the proper ways to control fever in children.

Acetaminophen doses of 10 to 15 mg/kg per dose given every 4 to 6 hours orally are generally safe and effective.

Ibuprofen (10 mg/kg per dose) is at least as effective as or more effective than, acetaminophen (15 mg/kg per dose) in lowering body temperature when either drug is used as a single or repetitive dose. (1)

There is no evidence to indicate a significant difference in the safety of standard doses of ibuprofen and acetaminophen in healthy children between 6 months and 12 years of age with fever.

However, Data are inadequate to support a specific recommendation for the use of ibuprofen for fever or pain in infants younger than 6 months. (1)

No consistent evidence has indicated that the use of an initial loading dose of acetaminophen by either the oral (30 mg/kg per dose) or rectal (40 mg/kg per dose) route improves antipyretic efficacy. (2)

Although hepatotoxicity with acetaminophen at recommended doses has been reported rarely, hepatoxicity is most commonly seen in the setting of an acute overdose. However, there is a significant concern of acetaminophen-related hepatitis in chronic acetaminophen overdose. The most commonly reported scenarios are those of children receiving multiple supratherapeutic doses or frequent administration of appropriate single doses at intervals of less than 4 hours (ie, >15 mg/kg per dose or more than 90 mg/kg per day for several days).

In 1 case series, half of the children with hepatotoxicity had received adult preparations of acetaminophen. (3,4)
On the other hand, nephrotoxicity is reported in numerous case reports in children with fever who treated with ibuprofen. Thus, caution is encouraged when using ibuprofen in children with dehydration or with complex medical illnesses.(5,6)

Although there is some evidence that combination therapy may result in a lower body temperature for a greater period of time, there is no evidence that combination therapy results in overall improvement in other clinical outcomes.

The possibility that parents will either not receive or not understand dosing instructions, combined with the wide array of formulations that contain these drugs, increases the potential for inaccurate dosing or overdosing. Finally, this practice may only promote the fever phobia that already exists. (7,8)

Methods:-

A cross sectional study was conducted in Madina Region, Saudi Arabia, on February-April 2016. We chose our sample using random sampling method. We excluded people living outside Madina region. We used the questionnaire as a collecting tool (electronic and paper based questionnaire). This questionnaire reached to our target group through social media as well as, in the public places and waiting areas of pediatric hospitals in Madina.

Before starting with our observation process, we explained the purpose of our study. Validity and reliability has been taken into account. Pilot study and pre-test has been done to clarify any ambiguous question.

Ambiguous questions were explained to parents who were interviewed in the waiting areas and a contact number of the research supervisor was added to the electronic form in order to answer any question parents might have.

First paper of the questionnaire was a consent form to accept the participation in the study.
The variables were the (age ,sex ,weight, level of parent's education and questions about how do parents deal with a febrile child).
By using specific coding mechanism we will collect the data suitable for analysis using the Statistical Package for the Social Sciences (SPSS) program.

Study was approved by the ethical committee at Taibah University.

Results:-

Table 1:- Sociodemographic data. n (316).

Child's Age (mean)	4 years
Child's Sex: (%)	
Male	56.3
Female	43.7
Child's Risk Factors to Develop Hepatic Toxicity: (%)	
Obesity.	
Liver Disease	5.1
Type 1 Diabets Millitus	1.6
Family History of Liver Disease	4.4
	6.3

Parents who measure their children's temperature were (80.7 %), on the other hand (19.3 %) of them do not,(6.59%)of parents, measure their children's temperature by under the tongue measuring method, (56.98%) by armpit and (36.43%) by auricle.

(4.11%) consider 37 degrees centigrade as a fever, (28.48%) consider 37.5 degrees centigrade and (67.41)% consider the child febrile when his temperature reaches 38 degrees centigrade. (79.75%) give antipyretic orally first and (42.1 %) start with suppository antipyretic.
(37.97%) seek medical advice when fever persists despite antipyretics, while (62.03%) they don't.

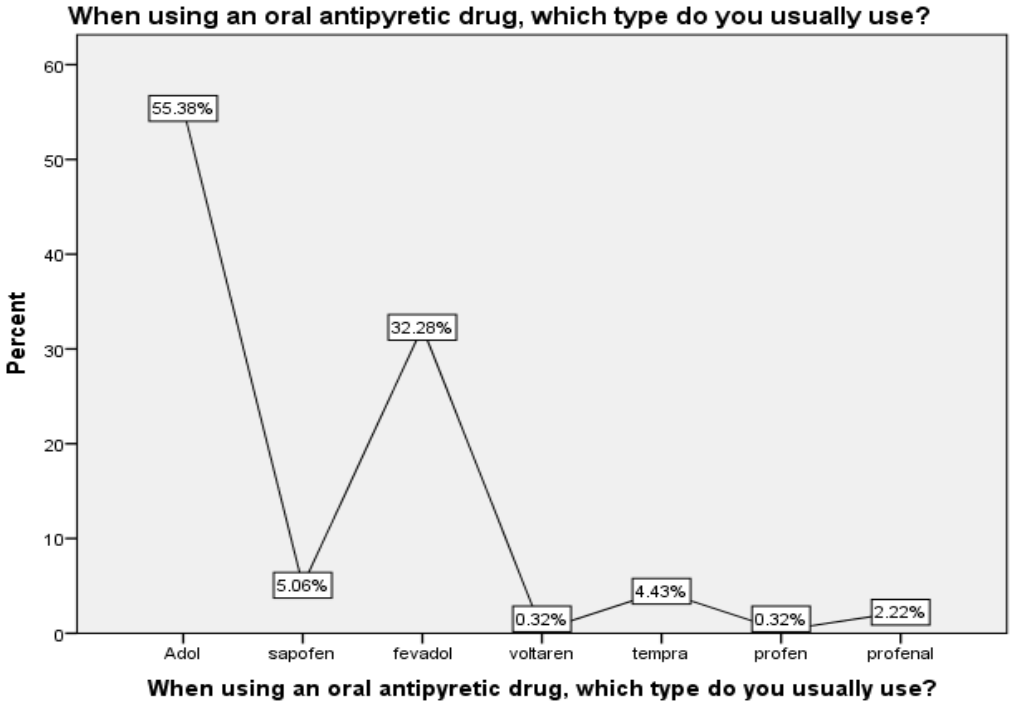

Figure 1:- Type of oral antipyretic using trade name.

Dose of antipyretic was determined in(57.59%) by the pediatrician,(17.41%) by the pharmacist and (25%)of parents determine it by themselves.(65.82%) of parents determine the dose based on the age of their children, (24.37%) determine it based on the weight and (9.81%) they determine it based on degree of the temperature. (13.9%) of parents don't know their children's weight.

In case of persistence of fever despite the use of oral antipyretics, (84%) of parents give their children anal suppository and (16%) add another type of oral antipyretic.(19.94%) of parents give the next dose of antipyretic after less than 4 hours from last dose and (80.08%) give them after more than 4 hours .

(79.1%) of children receive an antibiotic when the fever doesn't subside. While (20.9%) of children don't receive an antibiotic. (14.13%) of parents that give their children an antibiotic when the fever continues without prescription , while (85.87%) seek medical advice before giving an antibiotic.

(85.44%) of parents use cold compresses to reduce their children's body temperature, while (14.56%) they don't.(68.52%) in case of using cold compresses use a room temperature water . While (31.48%) use a cold water or ice.

Discussion:-

The vast majority of parents know their children's weight and they know the exact definition of fever. However, their knowledge about antipyretics in different routs of administration, duration between different doses regardless of the route and their action in case of persistence of fever in terms of the use of cold compression, are not satisfactory for a symptom which is very common like fever.

Although most of the parents answered the question of who describe the medication appropriately, they answered the next question of based on what inappropriately. That might indicate either parents selected the ideal answer or physicians didn't explain the importance of prescribing antipyretics based on patient's weight.

The good thing that the majority who selected the option of antibiotics answered the next question of prescribe it appropriately.

The other good thing is that most of the children who are exposed to frequent inappropriate doses of antipyretics have in majority no risk factors of chronic liver disease but still chronic acetaminophen toxicity is a major concern.

Conclusion and Recommendations:-

Physicians and pharmacists must explain to parents the appropriate dosing method of over the counter antipyretics.

It is preferable that these medications are suspended based on physician's prescription. Otherwise, Preparations which might lead to chronic liver toxicity should be replaced by other safe medications.

Education about actions when fever persists must be encouraged in every mean as the knowledge about dealing with febrile patient is less than the expected level.

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