



STUDY OF CHILDHOOD ATTENDANCE AT EMERGENCY DEPARTMENT IN KKH,
TABUK, KSA

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ARTICLE INFO

Article History:

Received 9th April, 2017
Received in revised form 3rd
May, 2017
Accepted 7th June, 2017
Published online 28th July, 2017

Key words:

Emergency, department, pediatric,
Tabuk, Saudi Arabia, Fever

ABSTRACT

Introduction: Research into childhood attendance at emergency department in the UK has focused mainly on injury related conditions. The first study in the UK looking at the common pediatric presentations to the emergency department they identified that high quality data regarding pediatric attendances is required in order to plan services. The emergency admission rate (EAR) per thousand population for breathing difficulty, feverish illness and diarrhea varies substantially between children living in different Primary Care Trusts (PCTs).

Objectives and Methods: The aim of this study is to determine the nature and frequency of problems in children presenting with medical condition. Data on all 1 month -10 years old attending pediatric emergency department of king Khaled hospital in Tabuk city with acute medical problem were collected prospectively over a four month- period during the day time shift.

Results: The study sample is 52 cases, all of them are 10 years old and below, (32.7%) are infants. Fever is the most common pediatric presentation at emergency department (25%); may be because it is an external well-known diagnosis parents notice, followed by convulsion (19.2%).

Conclusions: Fever and abnormal movements are the most common symptoms make parents seek medical advice for. Future recommendations for a similar studies regarding surgical cases presented to A&E at Tabuk hospitals.

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INTRODUCTION

Research into childhood attendance at emergency department in the UK has focused mainly on injury related conditions. Many of these have looked at specific types of injury, such as sports injury and fractures. There have been few studies focusing on attendances for medical conditions such as breathing difficulty, fever, diarrhea and vomiting and were accounted the most common medical conditions in 0-15 year old (Kyle *et al.*2012). Adolescence is commonly regarded as a healthy period of life and consequently there is a paucity of data regarding the health of young people and how they access healthcare .The first study in the UK looking at the common pediatric presentations to the emergency department. They identified that high quality data regarding pediatric attendances is required in order to plan services (Armon *et al.* 2001). There is limited published English data on the reasons for young people being admitted to hospital, reasons why they attend hospital services, or healthcare utilization in general. There has also been a rise in hospital admissions for all specialties including pediatrics. Child attendance at A&E has

risen but not been quantified accurately, with few data available (Downing *et al.*2010; Al-Ayed *et al.* 1997).

The Pediatric Emergency Department is an important part of hospital services. Details of pediatric emergency services have been previously reported from many centers around the world. There is a lack of information regarding the users of pediatric emergency services in Saudi Arabia (Al- Tabbal *et al.*2017).

Objectives

The aim of this study is to determine the nature and frequency of problems in children presenting with medical conditions. Data of all 1 month - 10 years old attending pediatric A&E were collected prospectively from September to December during the day shift.

METHODS

This study is a prospective research that was conducted in the pediatric accident and emergency department at king Khaled hospital (KKH), in Tabuk city.

A sample size of 52 cases were collected haphazardly over a period of four month duration, during the day-shift time and

was analyzed using the SPSS program. All children attenders aged 1month-10 years and presented to emergency department with acute medical problem whether self or general practitioner referred, were seen within the pediatric A&E department.

Data were collected and entered into SPSS sheet and analysis was done through descriptive measures mostly.

Data analysis

Out of the 52 cases 32.7 % are infants and 25% are toddlers. Two third of which are males. Tables (1) shows that (57.7 %) of the sample are toddlers and infants and nearly about (79%) are aged 5 years and below. In addition there is predominance of males being the most attenders to E.R department with a percent of (67.3%)

Table 1 Frequencies of cases according to age of presentation

Age group	Frequency	Valid Percent	Cumulative Percent	Number of Males	Number of females
1month-12 month	17	32.7	32.7	11	6
1-3 years	13	25.0	57.7	8	5
3-6 years	11	21.2	78.8	8	3
6-10 years	11	21.2	100.0	8	3
Total	52	100.0		35(0.673)	17(0.327)

94% of the sample were Saudi children and approximately 6% were non-Saudi. This percent is expected somehow as most of non-Saudi nationalities will be seen at the primary health centers or the maternal and children hospital as most of them are insured there. Looking for the risk of having different medical illnesses in childhood in regard to different nationalities and studying health care utilization in general needs a comparison study involving all hospitals in Tabuk city.

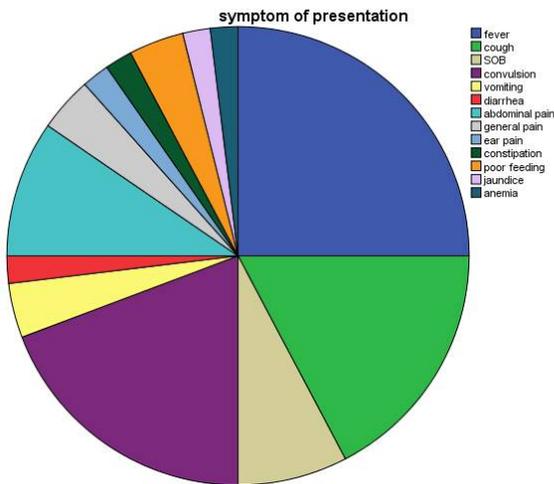


Figure 1 Frequencies of clinical manifestations lead to E.R attendance in pediatrics

Studying the frequencies of symptoms commonly seen in the pediatric emergency department shows that fever was number one presentation at emergency (fig. 1) with a percent of 25%, followed by convulsion by (19.2%), then cough by (17.3 %), abdominal pain (9.6%), Shortness of breathing and breathing difficulties by (7.7%), poor of feeding and vomiting with the same equality in frequency of showing up in the emergency department (3.8%). Other presentations even though not frequently causing child to present to emergency department but still they show up in emergency for example jaundice, ear

pain, constipation and others. Possibly because these symptoms are mostly seen and present in the outpatient clinic. GI tract manifestations like vomiting and diarrhea are not a common symptoms making parents seek emergency treatment for their off springs even though acute gastroenteritis is the single most common cause of pediatric hospitalization below the age of 5 years (6).

In a comparison between both genders in different pediatric age groups regarding their clinical presentations to emergency department it was noticed that abnormal movements are the most common symptom in infancy life make the parents seek emergent medical advice for treating their sons, while it is fever that lead to emergency attendance in case of female infants. On the other hand male toddlers have increased frequency of showing up in the E.R department because of fever. Female toddlers more been brought to E.R because of abnormal movements. At late childhood male patients more brought to E.R because of cough while females brought to E.R because of abdominal pain. (Fig.2)

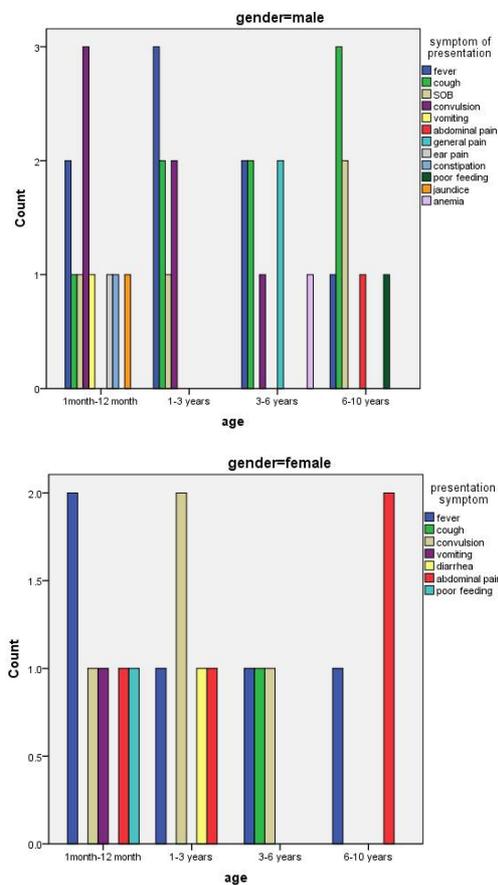


Figure 2 comparable figure showing the frequency of symptoms at E.R presentation in both males and females

Convulsion, asthma and acute gastroenteritis are the most common medical illnesses causing a child to be brought to emergency department for medical advice (table 2). Other serious illnesses still have the count of all E.R presentations among pediatric age groups such as meningitis and diabetic ketoacidosis but of the least percent, this may indicate a better health care provision in the primary health care centers and outpatient clinics to control such presentations of illnesses.

Table 2 Frequency of pediatric clinical diagnosis mostly seen in the emergency department

Diagnosis at emergency department	Frequency	Valid Percent
Convulsion	11	21.2
Asthma	8	15.4
AGE	7	13.5
URTI	6	11.5
chest infection	3	5.8
sickle cell crisis	3	5.8
malnourishment	3	5.8
febrile convulsion	2	3.8
sepsis	2	3.8
bronchiolitis	2	3.8
immunodeficiency	2	3.8
meningitis	1	1.9
neonatal jaundice	1	1.9
DKA	1	1.9
Total	52	100.0

Table 3 recurrence rate among all presentation symptoms in general

Previous presentation to ER	Frequency	Valid Percent
Valid first time	20	38.5
recurrent time more than one time	32	61.5
Total	52	100.0

two fifth of all presentations at E.R show up for the first time in comparison with (60%) being not their first time to present at emergency department with the same symptom. children with recurrent attendance to E.R mostly are with chronic disease like asthma or diabetes. Table (3) and (fig.3)

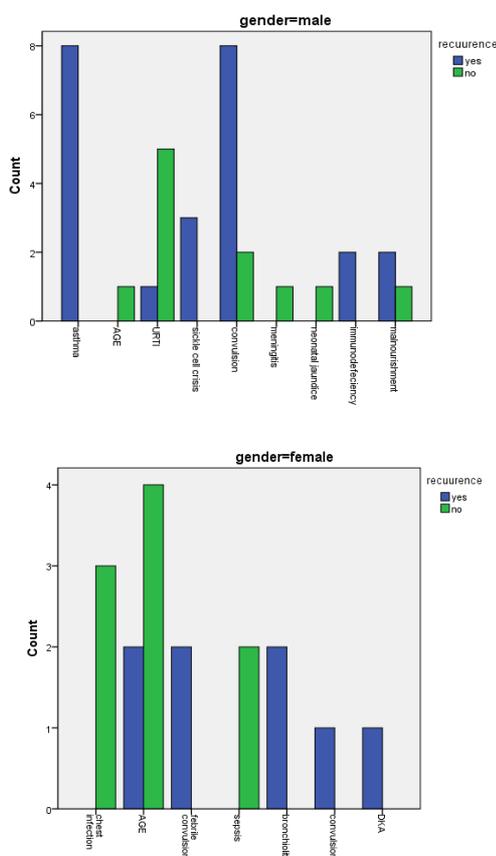


Figure 3 recurrence rates of different medical illnesses diagnosed at emergency department and comparison in regard to gender

In males mostly recurrent attendance to emergency department is because of asthma exacerbations and complications and also it is noticed that uncontrolled convulsion is a frequent cause of recurrent attendance to E.R among male children. On the other hand females attend emergency room recurrently because of uncontrolled diabetes and convulsion.(p value= 0.06)

Almost all the children were admitted at hospital by 90% and about 10% were discharged. This may indicate that children showing up to emergency department are actually at a real critical situation and need emergent care, and for those with usual no emergent conditions are seen in the primary health centers which is distributed in every area of Tabuk city. This is one good indicator for how much a good health care's provision and accessibility is in Tabuk city in Saudi Arabia. (table 4)

Table 4 outcome rates of pediatric medical illness seen at emergency department

diagnosis at ER	out come		Total
	Hospitalization	send home	
asthma	6(0.75)	2(0.25)	8
chest infection	3(1)	0	3
AGE	7(1)	0	7
febrile convulsion	2(1)	0	2
URTI	5(0.83)	1(0.16)	6
sickle cell crisis	3(1)	0	3
sepsis	2(1)	0	2
bronchiolitis	2(1)	0	2
convulsion	9(0.82)	2(0.18)	11
meningitis	1(1)	0	1
neonatal jaundice	1(1)	0	1
immunodeficiency	2(1)	0	2
DKA	1(1)	0	1
malnourishment	3(1)	0	3
Total(rate)	47(0.904)	5(0.096)	52(1)

DISCUSSION AND RESULTS

Pediatric emergency rooms are commonly used for nonemergency problems by parents who find them to be convenient sources of health care for their children. In our research the patterns of attendance and diseases are comparable to other studies. It also clearly demonstrates that a good number of patients attend the emergency services for simple problems like upper respiratory tract illness (11.5%). This may be because medical treatment is free in this country and patients sometimes seek medical advice from different centers at one time or because of failure of outpatient treatment or being a complicated cases as it seems more sense as the hospitalization rate is (83%).

The sample of the research was 52 cases, collected from KKH governmental hospital in Tabuk city. All of them were up to 10 years of age. More than three quarters are below the age of six years old. This might highlight the need to recruit more efforts to educate parents about different medical illnesses affecting pediatric age groups and also for those whom off springs are suffering from a chronic diseases like asthma or diabetes, it is important to condense the health care educational services to make sure they are aware of all the control and the preventive measures to avoid disease flaring or exacerbations.

It also shows that more than (67.3%) of sick children are boys and (32.7%) are girls. This may be due to the expose of the boys to the outside weather and viruses as they go out more than girls. Moreover, the research showed that fever was the most presentation at emergency one fourth of all presentations

may be because it is an external well-known diagnosis parents notice, or one most symptoms parents terrify from. Followed by convulsion by (19.2%). Then, cough with (17.3%) and abdominal pain (9.6%). Furthermore, doctor diagnosed children upon symptoms-after presentation- and it was noticed that most diagnosis was convulsion and asthma exacerbations and acute gastroenteritis, for which it may be the reason why there was high percent of hospitalization as the percentage of hospitalization of asthmatic exacerbation presented to E.R was (75%) and that for presentations due to gastroenteritis admission rate is (100%).

CONCLUSION AND RECOMMENDATIONS

For children with medical complaints attending a pediatric A&E in a busy general hospital, seven presenting symptoms were found to cover over 86% of all attendances: fever, convulsions, cough, breathing difficulty, abdominal pain, poor feeding, and vomiting. Initial management decisions were made by a pediatrics doctor in 78% of cases without consulting other disciplinary doctor. Guidelines for these common presenting problems should be developed, tested, and agreed for use in A&E by all grades of staff and be particularly aimed at those in training.

In comparison with another study shows Patterns of diagnoses revealed that respiratory diseases were the leading group (66.6%), followed by gastrointestinal diseases (12.0%). URTI was the most common diagnosis encountered (32.47%), followed by bronchial asthma (16.45%). The other frequent diagnoses were acute tonsillitis (8.2%), acute gastroenteritis (7.41%), otitis media (6.61%), pneumonia (2.43%), simple trauma (2.35%), and accidental drug ingestion and poisoning (1%). Analysis of the discharge distribution revealed that 81.5% of patients were discharged from the ER with medication and 7.74% were sent home without any medication. Three percent of cases were referred to other facilities and only 5.23% of cases required admission. The remaining cases (2.39%).

The research recommends to make researches about surgical cases at Tabuk hospital and to apply research at other cities to conclude illnesses related to Tabuk weather.

Acknowledgements

The authors would like to acknowledge financial support for this work especially the most supportive person, Dr Ameinah O. Al Tabbal, Assistant Professor, Pediatric Department, University of Tabuk, KSA for his great efforts, and My Friend who helped in data collection, Dr Sara Naif Sail, Dr Sara Alzahrani and Dr Reham A Albalwi

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