AUDIT OF PEDIATRIC SURGICAL EMERGENCY: NEED FOR SELF EVALUATION

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ABSTRACT

Background: The clinical or surgical audit is a systematic process in which the standard of clinical care being provided to the patients is sought through review of clinical records against specific criteria. The clinical or surgical audit is a mandatory element of the professional competence in many countries. **Objective:** To evaluate the yearly performance and to establish the pattern and frequency of various Pediatric Surgical emergencies encountered. **Methodology:** This was an observational, descriptive study covering the year 2016 with retrospective data collection was carried out in the Department of Pediatric Surgery Emergency Mayo Hospital/King Edward Medical University, Lahore. **Results:** A total of 3880 patients including 2350(60.6%) males and 1530(39.4%) females were admitted during the study period. The highest number of admissions were Burn Patients with the percentage of 37.8%, followed by trauma cases 23.9%, and acute appendicitis 18.6%. There had been 86 deaths which gave rise to 2.2% Mortality. **Conclusion:** Burn injuries and trauma are common injuries in pediatric surgery ward. It is suggested that audit must be conducted routinely and should be officially declared as a compulsory action to provide vision and feedback to the working of surgeons.

Keywords: Surgical Audit, Clinical audit, Elective Admissions, Emergency Admissions, Burns, Trauma.

INTRODUCTION

An audit is a process which systematically collects records, statements of facts or other relevant information and these are objectively used against the set of goals, standards or policies.[1] Clinical audit is helpful to evaluate if improvements are required in the healthcare being provided to the patients. The aim of the surgical audit is to ultimately improve the patient's quality of life. Regular clinical audits are crucial for self-criticism and improvement, and are used since long.[2] Unfortunately, there is no regular practice of conducting routine clinical audits in surgical emergencies in Pakistan. So no proper clinical data regarding pediatric surgical emergency audits are available in Pakistan, which could be studied and evaluated in relation to morbidity, death rate and other clinical consequences with a purpose to enhance the clinical care. The literature shows the surgical audit of a surgery wards of a hospitals in Karachi.[3,4] We can find several zones of concern where clinical audits had been carried out locally like head trauma,[5] acute appendicitis,[6] and thoracic surgery[7] are a few of them. But regular clinical audits of pediatric surgical units are a crucial requirement. Keeping in view the significance of surgical-audits, our study had been conducted and is based on the surgical audit cycle which comprises of five steps;[8]

Determine the scope of audit, selection of standards, data collection, present and interpret results with peer review finally, make changes and monitor progress. This study was an audit of pediatric surgical emergency of a tertiary care hospital.

METHODOLOGY

This was a cross sectional study, conducted at Department of Pediatric Surgery, Mayo Hospital, Lahore which comprises of 106 beds. Study duration: 1st January to 31st December 2016. There are 3 out-patient days and 3 major elective operation lists (days) in the Department of Pediatric Surgery. The Pediatric Surgery Department also provides round the clock emergency services to its patients. Pediatrics Surgery is affiliated with King Edward Medical University Lahore. An average of 80-100 patients come to Pediatric Surgery Emergency on daily basis. The patients with minor injuries and road traffic accident cases with minor injuries are referred to Minor operation theater (MOT) where the patients are applied stitches and/or dressings. While the patients who require major and immediate surgical intervention are admitted and referred to main operation theater where there is definitive management for the said patients. Major cases may include blunt trauma cases and road traffic accidents with major injuries.

A data collection performa had been designed and prescribed for the collection of relevant data. Detailed information about patients including the diagnosis, date and reason of patient's admission, demographic data of the patients and operation findings and outcome were noted from records of all the patients admitted during study period. Data was entered and analyzed by means of the statistical software SPSS 16.

RESULTS

The total number of patients admitted to Pediatric Surgical Emergency, were 3880. There were 2350

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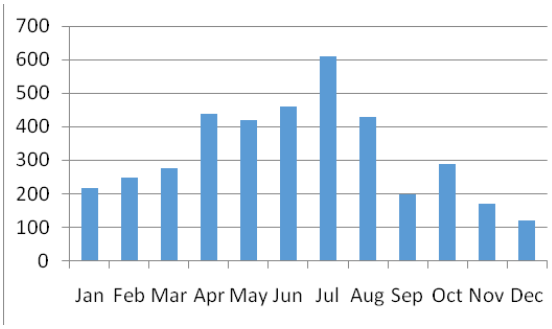
(60.6%) male patients and 1530 (39.4%) female. Age-wise distribution of patients showed that 880 (22.7%) were of 0-1 year age, 1134 (29.2%) were of 2 - 5 years age, 873(22.5%) of 6 -9 years and 993 (25.6%) were of 10 -12 years of age.

Month-wise distribution of pediatric surgical emergency patients over the course of one year is shown in figure I.

Figure I: Month-wise distribution of pediatric emergency patients



In table I, the disease pattern among pediatric emergency patients is shown. Burn injury was the most common 1465 (37.8%) condition observed in the study. Followed by trauma cases 925 (23.9%), and acute appendicitis 720 (18.6%).

Table I: Disease pattern and outcome among pediatric emergency patients.

Disease	**Number**	**Percentage**
Burn	1465	37.8
Trauma	925	23.9
Acute Appendicitis	720	18.6
Dog Bite	11	0.3
Obstructed Hernia	24	0.6
Intestinal Obstruction	188	4.8
Intestinal Perforation	525	13.5
Fire Arm Injury	22	0.5
Outcome of pediatric emergency patients		
Outcome	**Frequency**	**Percentage**
Discharged	3630	93.5**%**
Referred	26	0.7**%**
Death	86	2.2**%**
Left Against Medical Advice (LAMA)	11	0.3**%**
Discharge on Request	127	3.3**%**

Regarding the outcome of patients, 3630 (93.5%) of patients were discharged home, 127 patients (3.3%) were discharged on request, 26 patients (0.7%) were referred to other specialties and 11 patients (0.3%) got LAMA (Left Against Medical Advice). The mortality noted was in 86 (2.2%) of patients.

DISCUSSION

The pattern of diseases change as there is a change in the terrestrial region, ethnicity, and age of the patients. In Pakistan, there are very limited studies on surgical audits that can be used for comparing the pattern of diseases in pediatric surgery emergency. While in the technologically advanced countries, they have well organized national systems for clinical audits and the comparable audit studies are existing.[8,9]

We had 3880 emergency admissions in a year during the study. This can be compared to an emergency surgical audit study carried out in North Surgical Unit, Mayo Hospital Lahore in the year 2006 with a total number of 730 emergency admissions.[10] Another study was conducted in in Department of ENT unit-I Mayo Hospital Lahore with 5860 admissions of patients [11] and 5917 admissions of patients in the emergency department of ENT unit II Mayo Hospital Lahore.[12] Sadaf Khalid all[13] conducted a study on 11140 surgical emergency admissions at Lahore General Hospital Lahore. In another study in Karachi,[14] total 501 patients were studied for a clinical audit in 2004, while a previous study from Lyari, Karachi in 2000 included 563 admissions of patients.[3] These studies showed that the number of admissions is dissimilar from one area to another at diverse time periods.

At the international level, AD-DIN Women's Medical College Hospital, Dhakah[15] carried out a surgical audit in its pediatric surgical emergency unit with a patient number of 4613. While British Columbia Children's Hospital London[16]carried out a surgical audit in its pediatric surgical emergency unit with 225 admissions.

In our study male patients were significantly higher in number as compared to female patients. We had the maximum number of admissions during the summer season as compared to winter in our study time frame. This resembles to a national study that had been carried out in Ayub Medical College Abbottabad by the surgical emergency department.[17]

Most common disease was burns 1465 (37.8%), followed by trauma cases (23.9%) and acute

appendicitis (18.6%) in the study.

Our results showed that Burn injury was the commonest condition observed in the study. The high occurrence of burn injuries is possibly due to the absence of any other specialized Pediatric Burn Unit in Lahore. Mariira-Mukasa, conducted a study over a two years duration and found that 73.5% pediatric surgical emergency cases out of 5907 admissions were trauma cases[18] but our study reported burn injury as the most prevalent injury while trauma was the second most common reason for admission (23.9%) in our surgical audit. Qureshi et al[19] stated acute appendicitis as the commonest emergency admission case in their report on surgical emergency audit, but our surgical emergency study shows that acute appendicitis comprises 18.6% of total emergency admissions.

In our pediatric surgical emergency audit, obstructed hernia counts for only 0.6% of total emergency admissions while another study on the surgical emergency audit conducted by Shaikh R et al[3] testified 15.9% cases of obstructed hernia in their report. Hospital stay was also an attention-grabbing variable observed during that study. 24 hours was the minimum stay and the maximum was 46 days, observed in a patient with deep burn injury case, septicemia, and poly-trauma. Bhatti et al[20] studied 855 cases and reported 1.2% deaths in a surgical audit. McGuire et al[21] stated 1.8% deaths in their report on the surgical emergency audit as compared to 2.2% mortality was found in our pediatric surgery emergency audit.

CONCLUSION

Clinical Audits must be conducted routinely and must be officially familiarized as a compulsory duty to offer vision and feedback to the performance of surgeon. Clinical audits work as a mean of responsibility on clinical outcomes which can successfully enhance patient care in a surgical emergency. Burn injuries and trauma are preventable among children and found to be most common cause of admission in pediatric emergency department. Any disability due to burn injury or trauma harmfully affects the life of a child. It becomes a giant social issue for the rest of the life of that child.

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