Original Article

MORTALITY PATTERN OF HOSPITALIZED CHILDREN IN A TERTIARY CARE HOSPITAL IN LATUR: A RECORD BASED RETROSPECTIVE ANALYSIS

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ABSTRACT

Problem statement: Children mortality is one of very important indicators which reflect country's development. In country like India, causes of children mortality are often poorly documented in most of the hospitals. The present study aimed at finding the major causes childhood mortality of inpatients in the Pediatric Department admitted during September 2011 to august 2012.

Methods: A retrospective analysis was done with the medical records of Childrens died in the Peadiatric Department of Government Medical College and Hospital, Latur, from 1 September 2011 to 31 August 2012.

Results- A total of 3910 children were admitted to the Pediatric Department during study period. Total 176 paediatric deaths, 61.15% males and 38.84% females, were recorded. Out of total 176 pediatric deaths, 57.95 % were Neonatal deaths. Among the 139 infant deaths, neonatal deaths were 74%. Birth Asphyxia was most common cause for neonatal deaths while sSepticemia was the leading killer in post neonatal infants.

Conclusion-The childhood mortality pattern in different age groups suggests that we are in need of an effective and more comprehensive improvement in maternal health care along with antenatal and newborn care.

Key Words - Neonate, Medical Records, Paediatric deaths, Birth Asphyxia.

INTRODUCTION

Children mortality is one of the very important indicators which reflect country's development .[1] It is estimated that all over the world, more than 26,000 children under the age of five mostly from developing countries die every day. Causes of death of these childrens are often preventable in their early course.[2] Childhood deaths have been reported mostly from the developing countries where the health facilities are inadequate. Some sociodemographic factors like poor resources, poverty, ignorance of female childrens and social instability are also plays major role in their mortality. Malnutrition and infection-related diseases are still the major killers around the world.[2]

In India causes of children mortality are often poorly documented in most of the hospitals. The Medical Records Department of all teaching hospitals compile and retain the information regarding patients diagnosis, treatment, death records etc, yet the meaningful statistics from these records for health care planning and review is lacking.

Death records preserved by medical record section contains information regarding the causes of deaths, age and sex distribution, which can be used in planning programs of health care services for prevention of children mortality. A better understanding of childhood mortality pattern of a country can enable us for prevention of loss of these important lives. Such epidemiological information is very useful in planning and implementation of public health programmes.

The present study aimed at finding the major mortality causes of inpatient childrens in the Pediatric Department of Government Medical College.

OBJECTIVE

To study the pattern of peadiatric deaths with some socio-demographic factors
To find out the major causes of mortality of Pediatric Patients.

METHOD AND MATERIALS

Latur Government Medical College and Hospital has 60 beds in the Pediatric Department, out of which 25 are in Neonatal Intensive care Unit (NICU). Children under 12 years of age with illness are admitted in the Pediatric Department both from the outpatient and emergency departments.

A retrospective analysis was done with the medical records of Childrens died in the Pediatric Department of Government Medical College and Hospital, Latur over a 12-month period from 1 September 2011 to 31 August 2012. Data was collected and analysed regarding age, gender, cause of death, and duration of hospitalization of all the childrens from Medical Record Section attached to PSM department. Data were analyzed using SPSS 18.0 version and MS Excel.

RESULTS

A total of 3910 children comprising of 2391 (61.15 %) males and 1519 (38.84 %) of females were admitted to the Pediatric Department during September 2011 to August 2012. Out of 1095 total deaths of all ages in Government Medical College and hospital, Latur during one year period, 176 were paediatric death. Proportional mortality rate of peadiatric age group is 16.07 %. Out of total 176 paediatric deaths, 98 (61.15 %) were males and 78 (38.84 %) were females. An overall proportion of peadiatric deaths to total number of admissions are 4.57 % and proportion of deaths in males and females was 4.22 % and 5.13 %, respectively.

Table 1: Important Causes of Mortality in Different Age Groups

Causes of Mortality	Neonates	Post-Neonate Infants	1-4 year Children	5-12 years Children	Total (%)
Septicemia	34	14	03	05	56 (31.82)
Birth Asphyxia	40	00	00	00	40 (22.73)
Meningitis/ Encephalitis	04	03	03	06	16 (09.09)
Prematurity	14	00	00	00	14 (07.95)
ARI	00	10	01	00	11 (06.25)
Congenital Anomaly	03	05	00	02	10 (05.68)
Hepatic Coma	00	00	00	04	04 (02.27)
Miscellaneous*	07	05	03	10	25 (14.21)
Total	102 (57.95)	37 (21.02)	10 (5.68)	27 (15.34)	176 (100)

* no. of death due to Poisoning, Burns, Seizure disorders, surgical causes etc.; Figure in parenthesis indicate percentage

Out of total 176 pediatric deaths, 102 i.e. 57.95 % were Neonatal deaths and of total 139 infant deaths, neonatal deaths were 74 %. i.e. ¾ of infants died in their 1st month of life while post neonatal , 1-4 years childhood and 5-12 yrs childhood deaths were 37 (21.02%) , 10 (5.68%) and 27 (15.34%), respectively (Table 1). Out of total 102 neonatal deaths, the most common cause was Birth Asphyxia and Septicemia was the leading killer in post neonatal infants.

Septicemia 56 (31.82 %) out of 176 deaths was the leading cause of death among all peadiatric age groups followed by Birth Asphyxia i.e. 40 (22.73 %). Meningitis/encephalitis and ARI were responsible for 9.09 % (16) and 6.25 % (11) of total deaths respectively. Prematurity 14 (7.95 %) and congenital anomaly 10 (5.68 %) are also important causes in childhood mortality seen in this study.

Table 2: Age & Sex Distribution of Pediatric Deaths

Age group	Male Deaths	Female deaths	Total Deaths
Neonates	62(63.27)	40(51.28)	102(57.95)
Post Neonate Infants	21(21.43)	16(20.51)	37(21.02)
1-4 yrs Children	03(03.06)	07(08.97)	10(5.68)
5-12 yrs Children	12(12.24)	15(19.24)	27(15.34)
Total	98 (100)	78 (100)	176 (100)

Figure in parenthesis indicate percentage

Table 2 shows that 63.27 % i.e. 62 of male deaths were neonates as compaired to 51.28 % i.e. 40 female neonatal deaths. The risk of death was found more in 1-4 yrs and 5-12 yrs female children's as compaired to males which is evident by the figures in table 2.

The mean time interval between admissions and deaths was around 74.76 hrs (Approximately 3 days) with standard deviation (SD) of about 68.76. 49.43 % i.e. 87 of children deaths occurred within 24 hrs of admission i.e. nearly 50% of deaths occurred within 24 hrs of admission because of late referral of patient and referral in critical/ moribund condition. The intervals between admissions and deaths were 24-48 hrs, 49-120 hrs and more than 120 hrs in 28 (15.90 %), 41 (23.29 %) and 20 (11.36 %) of deaths, respectively (Table 3).

Table 3: Mean time interval between Admission and Deaths of Children

Time Interval	Deaths (%)
<24 Hrs	87 (49.43)
24 – 48 Hrs	28 (15.90)
48 – 120 Hrs	41 (23.29)
>120 Hrs	20 (11.36)
Total	176 (100)

DISCUSSION

The number of admissions was more in males (2391) than females (1519), Roy R. Et. al [3] and Singhi S. Et. al [4] studies reported greater male admission rate in hospitals than females children. Afolabi et.al.[5] also found same statistics in their study.

The risk of death in peadiatric age group is highest during neonatal period.[1] In the present study, approximately 57.95 % neonatal cases died out of total of 176 deaths in all age groups, indicating that the risk of death was highest in the neonatal period followed by deaths in the post-neonatal period which was around 37(21.02%) of total child deaths. Gulati P. Et. al [6] and Deivanayagam N. Et. al [7] also had similar finding that children mortality is higher within one year of age.

In present study, peadiatric deaths (176) in relation to total pediatric admissions (3910) in one year period showed overall mortality of pediatric patient in present study was 4.57 %, which was higher than that observed in the Singhi S. Et. al [4] study (2.7%) at PGIMER, Chandigarh. Higher mortality in the present study may be due to the large number of admissions in critical conditions, late referring of pregnant mothers and children in tertiary care hospitals. But this statistics was lower than the Roy R. Et. al [3] study (9.87%) conducted in 2008.

Current study shows that the early neonatal deaths in males (63.27 %) were more than the females (51.28 %), this shows biological vulnerability of males to infection is more than females as they are biologically stronger in their early ages. Godale L. Et. al[8] reported the same statistics in their study.

Present study shows that the mortality is comparatively more in female after 1st year of their life. This may be due to the gender discrimination and female child negligence. Godale L. Et. al [8] in their study also found more female child mortality but Roy R. Et. al [3] and Singhi S. Et. al [4] studies show no such significant difference between two sexes.

About 50% of pediatric deaths occurred within 24 h of admission, which could be attributed to delay transportation of patients and referral in critical conditions. Roy R. Et. al [3] and Deivanayagam N. Et. al [7] supported this finding in their studies.

In present study, the salient causes of deaths in different peadiatric age groups were studied and birth asphyxia and septicaemia were two most common causes of deaths in 39.22 % and 33.34 % of all neonatal deaths respectively. Roy R. Et. al [3] study conducted in 2008 shows the same causes of neonatal mortality. Singh M. Et. al [9] from hospital-based data shows that bacterial sepsis was a major cause of neonatal mortality in India.

Acute Respiratory Infections (ARI) proved to be the leading cause of death in pediatric age group worldwide but in the present study, septicemia, birth asphyxia, meningitis and prematurity is leading causes for children mortality.

CONCLUSION AND RECOMMENDATIONS

The pattern of mortality in different peadiatric age group found in the present study showed that yet the trend of death in children has not changed as birth asphyxia, ARI, meningitis, septicemia were the common causes of deaths in them which suggests that we are in need of more comprehensive antenatal and newborn care and up gradation of facilities in the tertiary care hospitals for prevention of neonatal deaths and strengthening of the services given under National Rural Health Mission (NRHM). There is need to strengthen Information, Education and Communication (IEC) activities so that the health cervices given are fully utilize. The deaths of the childrens within short duration after admission in most of the cases high lighten the need of timely referral and early transportation of cases for prevention of loss of important lives.

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