





GLOBAL JOURNAL OF HEALTHCARE

Short Communication

Profile of Infant deaths: Study of Three Years' Data at Rural Health Training Centre of AMC MET Medical College, Ahmedabad

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Abstract:

Background: Infant Mortality Rate (IMR) is one of the most sensitive indicators of health & one of the indicators for Millennium Development Goal on child survival. It is affected quickly & directly by the health programmes owing to its peculiar set of diseases & conditions.

Objectives: To study the profile, causes, trend of infant mortality and correlate them with various variables.

Methodology: It was a secondary data analysis conducted at Rural Health Training Centre, Jetalpur of AMC MET Medical College. Data were collected by studying the 'Infant death report forms' from the year 2008 to 2011. The variables of the format were entered in the Microsoft Excel and data was analysed.

Results: Total 65 infant deaths were reported during the study period.Infant mortality rates for 2008-09, 2009-10 and 2010-11 were 25, 20.8 and 24.5per 1000 live births respectively. Ratio of neonatal to post neonatal deaths was 4.3:1. Male: Female was 1.7:1. In about 4.9% deaths, place of delivery was home. In 80.3% of deaths delivery was full term while 19.7% were preterm. Caesarean section delivery was in 14.8%. Mean birth weight of the babies was 2.43 kg. Proportion of low birth weight babies was 49.05%. Most common cause of death was infection in about 24.5%. Other causes found were congenital abnormality, prematurity, foetal distress, asphyxia etc.

Conclusion: Though the target of IMR has been achieved, the high proportion of deaths during neonatal period points

towards need to have better services during intranatal and neonatal period. Problem of LBW also requires to be taken care of. **Key words**: Infant, Infection, LBW, Mortality, Neonatal, Prematurity

Introduction

Infant Mortality Rate (IMR) is one of the most sensitive indicators of health and living standard of a community. It quantifies the efforts directed towards mother & child health¹. Death at this age is due to a peculiar set of diseases & condition to which adult population is less exposed. It is affected quickly & directly by the health programmes hence it changes more rapidly than general death rate².

Global scenario shows that IMR of developed nations is less than 10 per 1000 live births while that of underdeveloped nations is 90 and above¹. As per SRS report, IMR of India is 42 per 1000 live births for 2012³.However, there are regional as well as urban- rural differences in the IMR. For India, IMR of rural area is 46 & that for urban is 28 per 1000 live births. For Gujarat, it is 38 per 1000 live births with 45 & 24 in rural & urban area respectively³. As per the Millennium Development Goal-4 on child survival; target IMR for India is 27 per 1000 live births in 2015⁴.

In developed countries, leading causes of infant deaths are congenital anomaly and anoxia while in developing countries they are Low Birth Weight (LBW) and infections which are largely preventable causes. In India, the causes of infant mortality includes LBW (57%), respiratory infection (17%), congenital malformation (5%), diarrhoeal diseases (4%), birth injury (3%), cord infection (2%) and other causes $(18\%)^2$.

With this background, the present study was conducted to study the profile of Infant deaths, the causes & trend of infant mortality and to correlate cause & time of infant death with various variables.

Materials & Methods

The present study was a secondary data analysis carried out at PHC Jetalpur which is Rural Health Training Centre (RHTC) of AMC MET Medical College which is about 15 kilometres from Ahmedabad catering population of 37,211 (2010-11).All the infant deaths which occurred in the field practice area from April, 2008 to March, 2011 were studied. Total 65 deaths were recorded during the study period.

For each infant death, 'Infant death report form' is filled up at all PHCs. So, for the above mentioned period, all such forms were collected from the RHTC. The numbers of infant deaths registered were 23, 19 & 23 during years 2008-09, 2009-10 & 2010-11 respectively. Out of these 65 deaths, 61 deaths could be studied. The variables of the reporting format were entered in Microsoft excel and data was analysed for means, proportions & difference between standard error of two proportions.

Results

Table 1 Age and Sex wise distribution ofInfant deaths

Age	Sex		
•	Male	Female	Total (%)
Within 24			
hours	10	7	17 (27.9)
1 to 7 days	16	б	22 (36.0)
8 to 28 days	5	5	10 (16.4)
>28 days	7	5	12 (19.7)
		23	
Total	38 (62.3)	(37.7)	61 (100.0)

of which there were 38 (62.3%) males & 23 (37.7%) females. The difference was

statistically significant (p < 0.001). Neonatal deaths were 49 (80.3%) and rest were post neonatal. The difference statistically between the two was significant (p <0.001). There were 39 (63.9%) deaths in the early neonatal period. There was no significant difference between sex of the infant and time of infant death (p > 0.05). (Table 1)

In about 5% deaths, place of delivery was home while in the rest, it was institutional delivery. Birth was by Caesarean Section (CS) delivery in about 15% of infants & in rest 85%, it was by vaginal delivery. In about 20%, delivery of the infant was Preterm. (Table 2)

 Table 2 Details of Delivery

	Number	
Variable	(N=61)	%
Place of Delivery		
Home	3	4.9
Hospital	58	95.1
Type of Delivery		
Full term	49	80.3
Pre term	12	19.7
Mode of Delivery		
Vaginal	52	85.2
Caesarean Section	9	14.8

Mean birth weight of the babies was 2.43 ± 0.69 kg. Proportion of low birth weight (LBW) babies was 45.9% (28/61) of which 72% were full term babies. In males, the proportion of LBW was 42.1% (16/38) while in females; it 52.2% (12/23). However, the was difference was not statistically significant (p>0.05). 92.8% of LBW babies (26/28) died in neonatal period as compared to normal weight babies, of which 69.7% (23/33) died during neonatal period (p<0.05).

In 8 forms, cause of death was not mentioned. Most common cause of infant death (n=53) was infection /sepsis /septicaemia in about 24.5% followed by congenital abnormality (18.9%), prematurity (15.1%) & foetal distress (15.1%). Other causes found in descending order, were asphyxia (9.4%), LBW & malnutrition (5.7), aspiration of breast feeding (3.8%) and cyanosis, cord around neck, twins & sudden death each in 2.0% (Figure 1). Causes of neonatal deaths (n=44) in descending order were congenital abnormality (20.5%), foetal distress (18.2%), prematurity (15.9%), infection/sepsis (15.9%), asphyxia (11.4%), aspiration (4.5%), LBW (4.5%) and cyanosis, cord around neck & twins each in 2.3%.

Figure 1 Causes of Infant Deaths (n= 53)



Live births for the years 2008-09, 2009-10 and 2010-11 were 920, 915 & 937 respectively and infant mortality rates for these years were 25, 20.8 and 24.5 per 1000 live births respectively with no significant difference (p>0.05).

Discussion:

In the present study, out of 61 infant deaths, more than 60% were males. Around 80% deaths occurred in Neonatal period which was higher as compared to study by M. Salman et al in Aligarh⁵ & a systematic review in India by Lahariya C et al⁶, which showed contribution of neonatal deaths amongst infant deaths as about 60% & 48.5% respectively.There was no significant difference found

between sex of the infant and time of infant death. However, M. Salman et al found higher female deaths in both the periods⁵.

In the present study, most common cause of infant death was infection /sepsis/ septicaemia in about 24.5% followed by congenital abnormality (18.9%), prematurity (15.1%) & foetal distress (15.1%) with overall, proportion of LBW in the study was 45.9%. A systematic review in India showed that, amongst infants, sepsis/pneumonia, asphyxia, and prematurity/LBW remain substantial causes of deaths⁶. In a study in Delhi, 22%of infant deaths were attributed to diarrhoea, 14% to birth asphyxia, 12% to and 11% to respiratory immaturity, infection⁷.

In the present study, most common causes of neonatal deaths were congenital distress abnormality (20.5%), foetal prematurity (18.2%).(15.9%),infection/sepsis (15.9%) and & asphyxia (11.4%). While the study by M. Salman et al found the major causes of deaths during the neonatal period were birth asphyxia (40.9%), prematurity (including LBW) (27.27%) and pneumonia, diarrhoea, tetanus, neonatal sepsis, neonatal jaundice & congenital malformation 4.55% each⁵. A systematic review on causes of child deaths in India showed that the median percentage of causes of deaths in neonatal period were sepsis/pneumonia: 24.9%; asphyxia: 18.5% and pre-maturity/LBW: $16.8\%^{6}$.

IMR in the study area for the year 2008-09, 2009-10 and 2010-11 were 25, 20.8 and 24.5 per 1000 live births respectively which is consistently lower than the national & state average³. However, no definite trend of reduction was seen.

Problem of LBW in full term delivery requires to be taken care of being an important determinant of neonatal /infant mortality. Training and retraining of the staff is required for proper filling of

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reporting forms mainly mention of cause of death as per MCCD.

Limitations

Being a secondary data analysis, only variables & information provided in the formats could be studied.

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Activities

In pursuing the goal and objectives of the IAPSM-GC, the organization is carrying out different activities like annual conferences, training & capacity building, exposure visits, research, Monitoring & Evaluation, PG meets, PG Study Support Progams and many more innovative and academically productive ventures. It also felicitates distinguished personalities in the field Community Medicine field/Public Health who are our "guiding angels". Orations are organized for encouragement of the young budding experts in the field and many awards are also constituted as incentives.