

Frequency of the causes of mortality among infants in Pediatrics Unit II, Civil Hospital, Karachi, Pakistan

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COVERING LETTER

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UNDERTAKING:

The whole manuscript is reviewed and approved by all investigators and there is not any conflict of interest between us. This whole study or any part of manuscript never sent for any publication.

This study has been ethically approved by the office of the director research (DUHS).

IMPORTANCE OF ARTICLE:

Our study focuses on determining the most common causes of mortality among infants which can help pediatricians to know about different causes of mortality among infants. Reducing the prevalence of these causes we can decrease the frequency of infant mortality in our society.

The International Journal of Research is well-known for its high standard and authenticity, which attracts people involved in all lines of medical profession to submit their research articles to it. Furthermore, publication in a recognized journal is both a source of honor, dignity and produces positive results in professional future.

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UNDERTAKING

I, Abubakar tauseef, and my below mentioned colleagues are submitting our original research titled "**Frequency of the causes of mortality among infants in Pediatrics Unit II, Civil Hospital, Karachi, Pakistan.**" to the International journal of Research for publication.

We agree that upon acceptance by International journal of Research, all copyright ownership for the article is transferred to the journal. We, the co-authors of this article, have contributed significantly to and share in the responsibility for above. We assure that the material submitted to Journal is new, original and has not been submitted to another publication for concurrent consideration.

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We further attest that we have herein disclosed any and all financial or other relationships which could be construed as a conflict of interest and that all sources of financial support for this study have been disclosed and are indicated in the acknowledgement.

Yours' sincerely,

ABUBAKAR TAUSEEF and the CO AUTHORS.

ABSTRACT:

Objective: Frequency of the causes of mortality among infants in Pediatrics Unit II, Civil Hospital, Karachi, Pakistan.

Participants and Method: It was a statistical study, conducted at Pediatrics Unit II, Civil Hospital, KARACHI. In this study all data was collected by the co-investigators during a period of 1st May 2015 to 1st August 2015, 90 infants were considered as mortality

among infants in the year 2014 was found to be equal to this and in the end data was analyzed by using SPSS 16.0 version.

Results: Out of 90 infants, 36(40%) were baby boy and 54(60%) were baby girls. Among baby Sepsis and Malnutrition has outnumbered all other causes of infant mortalities among baby boys, same is the case for baby girls, that is that among Sepsis and Malnutrition has outnumbered all other causes of infant mortalities among baby girls.

Conclusion: A variety of causes of mortalities exist among infants. Special attention should be paid to Sepsis and Malnutrition, two of most common causes of mortalities among infancy among both baby boys and baby girls. One should understand this fact and try to reduce prevalence of these causes, as by reducing these causes we can reduce the number of mortalities among infants-a very important and precious group of one's family as well as society.

Key words: Frequency; mortality; infants; pediatrics; hospital; Karachi

Frequency of the causes of mortality among infants in Pediatrics Unit II, Civil Hospital, Karachi, Pakistan.

INTRODUCTION:-

INFANT MORTALITY literally means death of the baby from birth up to one year of age. Infant mortality in United States has long been of interest always to demographers, but the pace of research on its determinants has increased over the last decade following recognition of an attenuation in the rates of decline, higher rates in this country related to other nations

and persistence of infant mortality among different population groups (1) it's not only a problem of United States but it had a worldwide impact, also had great impact on socioeconomic wellbeing of developing countries like Pakistan.

There are multiple causes few of which although are not much lethal among adults but are highly fatal in infancy like diarrheal disease as diarrhea is one of the principal causes of morbidity and mortality among children in the developing world. Despite improving trends in mortality rates, diarrhea accounted for a median of 21% of all deaths of children aged under 5 years in these areas and countries, being responsible for 2.5 million deaths per year(2,3).

Pneumonia, infection of the respiratory tract, although it seems to be a milder disease in case of adults, which can easily be treated by antibiotics and analgesics but on the other hand same disease has shown devastating results among infancy. Pneumonia still caused around two million deaths among children annually (20% of all child deaths), a great threat for our infants(4,5), Newborns typically have sterile respiratory mucosa at birth, with subsequent uncontested colonization by microorganisms from the mother or environment and because of this sterility of mucosa, foreign organisms can easily enter the respiratory tract and as immune system of infants is not much well established these foreign agents can produce devastating signs and symptoms among infants which ultimately can lead to death of infants(6).

Sepsis is also a common cause of mortality among infants especially in preterm babies(7). Pediatric sepsis, is generally considered to comprise a spectrum of

disorders that result from infection by microorganisms which have introduced into the infant circulation and as immune system of infant is not much developed in contrast to that of adult, sepsis can prove itself to be one of the common cause of mortality among infancy(8).

Prematurity also has great impact on mortality among infants as two thirds of infant deaths in the United States occur among infants born preterm, i.e.: <37 weeks of gestation (9,10), this high rate of mortalities are of course due to prematurity but in addition to it they are also due to other conditions like multiple infections ultimately leading to sepsis, respiratory distress secondary to prematurity and so on and so forth, all conditions that are usually associated with prematurity(11,12,13).

Birth Asphyxia Birth Asphyxia is one of the commonest cause of infant mortality, globally estimates of asphyxia related death are around 0.7 to 1.2 million but fortunately it is one of the reversible causes of mortality in newborns which can easily be preventable (14,15,16).

Malnutrition is associated with about 50% of all deaths among children as Malnutrition affects virtually every organ system. Dietary protein is needed to provide amino acids for synthesis of body proteins and other compounds that have various functional roles. Energy is essential for all biochemical and physiologic functions in the body. Furthermore, micronutrients are essential in many metabolic functions in the body as components and cofactors in enzymatic processes. it causes decreased immunity secondarily causing infections leading to death among infants (17,18)

Congenital malformations became a more prominent cause of infant mortality in 1997 and accounted for 22.1% of all infant deaths compared with 15.1% in 1970. Congenital malformations of nervous, cardiovascular, and respiratory systems accounted for more than 60% of all malformations associated deaths(19,20), congenital cardiac malformations are the most common developmental anomalies, occurring in approximately 8 per 1000 live births(21,22,23), Congenital Cardiac Malformation had outnumbered all other congenital malformations in the United States.

Measles although seems to be a viral infection which infants or young children often encounters in their early years of life, this infection had a great impact on infant mortality but it can easily be prevented on giving vitamin A supplements which prevent infant from encountering this infection(24).

Convulsions in infants as well as in adults are of great importance. Poor prognosis for premature infants with seizures is reflected in high rates of subsequent long-term disability and mortality. The severity and timing of the pathologic process continue to be the major determinants for outcome (25).

Malaria although seems to be a milder disease among adults but in infants this disease may also prove itself to be fatal (26,27).

Chronic liver disease like autoimmune hepatitis, Caroli Disease and other types chronic liver diseases may lead to mortality among infants or young children (28).

Meningitis in first year of life is associated with severe disabilities among children which may lead to their death (29).

The objective of our study is to evaluate the causes of death among infants in Pediatrics Unit II, Civil Hospital, Karachi, and to find out the most common cause of death among infants in Pediatrics Unit II, Civil Hospital, KARACHI.

METHOD AND METHODOLOGY:-

The study was conducted at PEDIATRICS unit II of civil hospital Karachi, one of the leading and top rated institute providing health facilities to patients visiting the premises. It's a questionnaire based statistical study conducted during a period of 1st May 2015 to 1st August 2015.

Initially this topic was decided and Performa was designed with the help of our supervisor and cooperation of all the co investigators .After all ifs and buts we finalized the per forma which was divided into two sections ,first section includes bio data containing name(as optional), age(in months), location and ethnicity of the subjects of the study. Second section includes causes of infant mortality i.e: Diarrheal disease, Pneumonia, Sepsis, Prematurity, Birth asphyxia, Malnutrition, Congenital Malformations, Measles and Malaria. Study was ethically approved by institute of research board (I.R.B).Subjects for this cohort study were not selected, inspite of this, data for our study will be taken from register that contains all the data of the above mentioned unit.Sample size for this study will be equal to the number of deaths among infants in the year 2014 in this department which was found to be equal to ninety (90)infants.

Only those infants who died while admitted to pediatric unit II were included while all

those who were admitted to other pediatric units of Civil hospital and to other hospitals and died there were excluded from our study. Neonates are also not included in our study as they are a special group. Performa were to be filled by all the members of the study by information given to us in the register of above mentioned unit.After complete filling of the per forma data is entered and statistically analyzing by using SPSS 16.0 version and results were obtained through it as per given below in results.

RESULTS:

A total of ninety infants had lost their lives in pediatrics unit II in the year of 2014 so our sample turns out to be ninety(90 infants),out of which thirty six(40%) were baby boy and fifty four(60%) were baby girl which shows a twenty percent more mortalities among baby girls in comparison to baby boys.

Among baby boysconsidered in our study, sepsis has outnumbered all other causes with a frequency of 11(30%),being seconded by malnutrition with a frequency of 8(22%).Remaining of the 54 infants considered in our study were baby girls among whom results found were the same as that of baby boys showing that sepsis has outnumbered all other causes with a frequency of 19(35%),being seconded by malnutrition with a frequency of 14(26%).(TABLE).

The similaritiesamong baby boy and baby girls causes of mortalities shows that gender don't have much influence on the mortalities but on one side is due to poor financial support of the mother and on the other side is due to lack of good nursing care to be given

by the hospitals, so by providing it we can reduce the mortalities among infants and save their precious lives.

DISCUSSION:

Our study has shown a couple of interesting results but few of these needs a light of discussion as given below:

A study was conducted by David Marsh and his team to find the cause of deaths in pediatric population in Oshikhandass, a remote mountainous community in Pakistan's Northern Areas during the years 1988 and 1991 and found out the most common cause being diarrhea in infant deaths (68%) but in our population the most common cause of death was sepsis(30). The reason might be due to better health care facilities available in civil hospitals for management of diarrhea compared to mountain areas.

Suprabha Shukla and his fellows conducted a hospital based study in tertiary care hospital in the eastern part of India during November 2009 to September 2011 in which they found out that most common cause of infant mortality was septicemia present in 26.5% infants which is little low compared to our study and it was followed by respiratory infections and diarrhea being a minor contributor to infant mortality contrary to our study(31).

In a study conducted by Laura and her team they concluded that undernutrition contributes to about 52.5% of infant deaths secondary to variable diseases whereas in our study malnutrition was present in only 22% of boys and 26% of girls who suffered death during their infantile period(32).

Roger and his colleagues conducted a study in which they concluded diarrhea as the cause of 10% infant deaths in United States which is approximately comparable to our study in which 8% boys and 13% girls suffered from diarrhea(33).

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TABLE:-

Causes :-		Gender of infants	
		Baby boy N (%)	Baby girl N (%)
Diarrhea	present	3(8%)	7(13%)
	absent	33(92%)	47(87%)
Pneumonia	present	5(13%)	4(7%)
	absent	31(87%)	50(93%)
Sepsis	present	11(30%)*	19(35%)*
	absent	25(70%)	35(65%)
Prematurity	present	1(3%)	0(0%)
	absent	35(97%)	54(100%)
Birth asphyxia	present	0(0%)	0(0%)
	absent	36(100%)	54(100%)
Malnutrition	present	8(22%)**	14(26%)**
	absent	28(78%)	40(74%)
Congenital malformations	present	1(3%)	2(4%)
	absent	35(97%)	52(96%)
Measles	Present	1(3%)	0(0%)
	Absent	35(97%)	54(100%)
Convulsions	Present	2(6%)	7(13%)
	Absent	34(94%)	47(87%)
Malaria	Present	0(0%)	1(2%)
	Absent	36(100%)	53(98%)
Chronic liver disease	Present	3(8%)	1(2%)
	Absent	33(92%)	53(98%)
Meningitis	Present	5(13%)	5(9%)
	absent	31(87%)	49(91%)

*most common cause in both genders

**Second most frequent cause in both genders