

# Determination the Causes of Neonatal Mortality during the Last 3 Years Ago in Al-Kut City

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## Abstract

**Background:** Nearly 3 million babies die each year in their first month of life and a similar number die at birth. Notably, the first month of life of these children. That a quarter to half deaths occur in the first 24 hours and that 75% of them occur in the first week. The study aims: determine the causes of neonatal mortality in Kut City.

**Methodology:** A non-probability a convenience sample of (N=406) was collected through a review of NCUS records which were selected out from the main hospitals. The data were collected from a retrospective secondary data from death certificates, medical records and death records using the questionnaire deals with neonate age, gender, birth weight, and cause of death. Data are analyzed through the application of descriptive and inferential statistical data analysis approach that includes, frequencies and percentages; Chi-squared test. **Results:** The study results indicate that the (77.8%) of neonate aged less than five days and die. Regarding gender, most of them were male and their weight 1000-2000. There were a significant association between neonate age, and gender with the causes of their morbidity at p-value <0.05.

**Conclusion:** A less than five days of life male neonate weighted 1000-2000 kg die by respiratory distress syndrome affected by age and their gender. Health care providers need to be trained on neonatal resuscitation. All nurses and doctors involved in obstetrics and neonatal care should be trained in at least immediate care of the newborn.

**Key words:** Determination, Neonate, Morbidity, Al-Kut City.

## Introduction

Newborn baby is the first live stage within 28 days after birth, which is considered the most important period of age as an indicator of physiological adjustment to life outside the womb. This period is very sensitive where comes the high rates of child mortality newborns from high susceptibility of exposure to disease and death in infants<sup>[1]</sup>. It was noted that the death of neonatal can be classified as an early age occur during the first seven days, while the late stage occurs after the seventh day but before 28 days of age, and therefore considered to be the most dangerous period due to the face of many diseases problems that lead to high rates of morbidity and mortality <sup>[2]</sup>. Wherever children who reported that prematurity, severely malformed, childbirth

complications or bad hygiene practices were issues lead to inflammation, which ends with the death of the newborn die <sup>[3]</sup>. On the other hand, the large majority of newborns do not develop any problems or only serious difficulties requiring only the minimum, which can be provided by the parent with proper supervision by health workers take care of <sup>[2]</sup>. While mothers at high risk who were unsupervised and preterm or infants low birth weight is an experience to address where they are faced with a series of events likely to be life-changing as their children transition from fetal life newborn that the consequences could affect the health of the individual on their lives <sup>[4]</sup>. Pregnant women can be exposed innocently to the physical, psychological and behavioral conditions, or environmental harmful potential that can increase the risk of pregnancy. Even with optimal care

before birth, the fetus can suffer results in perinatal negative, such as premature birth, low birth weight, congenital malformations, and neonatal morbidity, or neonatal deaths. After birth, the risk factors related to the same mother to put newborns at risk of illness or injury may continue<sup>[6]</sup>. Preterm birth according to the World Health Organization, which referred to the birth before 37 weeks of termination of pregnancy. Is divided somewhat mildly that the completed pregnancy from 32 to less than 37 weeks, which includes late premature defined as 34 to less than 27 weeks of pregnancy <sup>[7]</sup>. Birth asphyxia also failed to start and maintain breathing at birth, can choke at birth resulting from inadequate O2 directly supply also before, during or after birth. It is estimated that the world be more important reason for the 2/3 neonatal death accounting for about 29% of deaths <sup>[8]</sup>. Birth weight less than 2.5 kg is called low birth weight is one of the most important determinants of neonatal mortality. It generates 15.5 per cent of all children with low birth weight, 95.6 per cent of them children in developing countries, all over the world <sup>[9]</sup>. Respiratory distress is the name applied to the weakness of the respiratory system in newborns, which are related to the delay in the growth of lung maturity. The death of nearly 20% of the deaths of newborn infants with 40,000 of dye each year in the United States accounts <sup>[10]</sup>. Most deaths fall of neonatal sepsis in Eastern Europe, where between the ages of 0-6 days and 7-27 days.

### Methodology

**Study design:** A descriptive analytic study design aimed at determine the neonatal mortality during the last 3 years ago in Kut City.

**Study Sample:** A non-probability a convenience sample of (N=406) was collected through a review of

NCUs records which were selected out from the main hospitals.

**Study Instrument:** Through a comprehensive review of the literature related to, the study design tool for the purpose of the study by the researcher, which were based on the causes of neonatal deaths. The instrument was examined by the supervisors and experts in the field who is knowledgeable about the issues around the care of the mother and newborn.

**Data Collection the Methods:** The data were collected from a retrospective secondary data from death certificates, medical records and death records using the questionnaire deals with neonate age, gender, birth weight, and cause of death.

**Statistical analysis:** The SPSS-ver.20 methodology is used to analyze and evaluate data from the study. A descriptive approach analysis of statistical data used to describe the study variables: frequencies and percentages; Statistical data deductive analysis approach: used by applying the Chi square test.

They obs. < crit. = insignificantly. They obs. > crit. = significantly,

Shortcuts for measuring important compared to the level, are used as follows:

- (1) NS : Non significantly at probability-value > 0.05.
- (2) S : Significantly at probability-value < 0.05.
- (3) HS : Highly significantly at probability-value < 0.01.

**Results****Table (1): The Neonatal Characteristics**

Variables	Rating	No.	%
Neonatal Age	<5 days	316	77.8
	5-10 days	67	16.5
	11-15 days	12	3.0
	16-20 days	6	1.5
	>20 days	5	1.2
Gender	Male	235	57.9
	Female	171	42.1
Birth Weight	<900	39	9.6
	1000-2000	190	46.8
	2100-3100	142	35.0
	3200-4200	32	7.9
	4300-5300	2	0.5
	>5400	1	0.2

This table indicate that the a male gender neonate death aged less than five days and weighted 1000-2000 kg.

**Table (2): The Causes of Neonatal Mortality During Last 3 Years ago**

	Rating	No.	%
Causes of Neonatal Mortality	Congenital emphysema	65	16.0
	Sepsis	84	20.7
	Weight loss and age	32	7.9
	Congenital Anomalies	37	9.1
	Respiratory distress syndrome	158	38.9
	Jaundice	3	0.7
	Birth Defect	1	0.2
	Inhalation of uterine fluids	1	0.2
	Renal Failure	1	0.2
	Acute Weight Lose	1	0.2
	Pneumonia	3	0.7
	Heart abnormalities	3	0.7
	Brain Malformation	9	2.2
	Brian Hypoxia	1	0.2
	Congenital malformations of the respiratory system	5	1.2
	Platelet inflammation	1	0.2
	Underweight with low gestational age	1	0.2

The respiratory distress syndrome were records the majority among causes of neonatal death.

**Table (3): Relationship between the causes of neonatal mortality and neonatal age**

	Rating	Age					Total	d.f		
		<5 days	5-10 days	11-15 days	16-20 days	>20 days				
Causes of Neonatal Deaths	Congenital emphysema	54	9	1	1	0	65	64	obs.= 152.408 crit.= 83.675 P-value=0.000	HS
	Sepsis	42	30	3	4	5	84			
	Weight loss and age	28	3	1	0	0	32			
	Congenital Anomalies	35	2	0	0	0	37			
	Respiratory distress syndrome	137	18	3	0	0	158			
	Jaundice	2	1	0	0	0	3			
	Birth Defect	1	0	0	0	0	1			
	Inhalation of uterine fluids	1	0	0	0	0	1			
	Renal Failure	0	0	1	0	0	1			
	Acute Weight Lose	1	0	0	0	0	1			
	Pneumonia	3	0	0	0	0	3			
	Heart abnormalities	1	0	1	1	0	3			
	Brain Malformation	7	1	1	0	0	9			
	Brian Hypoxia	1	0	0	0	0	1			
	Congenital malformations of the respiratory	3	1	1	0	0	5			
	Platelet inflammation	0	1	0	0	0	1			
	Underweight with low gestational age	0	1	0	0	0	1			
Total	316	67	12	6	5	406				

“ Chi-square observer, Chi-square critical, Df= Degree of freedom, “P-value= Probability value”, “S= significant”, “NS= non-significant”, “HS= high significant”

This table depicts there were a high significant association between neonatal age and causes of their mortality at p-value <0.01.

**Table (4): Relationship between the causes of neonatal mortality and neonatal Gender**

Causes of Neonatal Deaths	Rating	Gender		Total	d.f		
		Male	Female				
Congenital emphysema		35	30	65	16	obs.= 26.482 crit.= 26.296 P-value=0.048	S
Sepsis		42	42	84			
Weight loss and age		22	10	32			
Congenital Anomalies		15	22	37			
Respiratory distress syndrome		102	56	158			
Jaundice		0	3	3			
Birth Defect		1	0	1			
Inhalation of uterine fluids		1	0	1			
Renal Failure		1	0	1			
Acute Weight Lose		0	1	1			
Pneumonia		3	0	3			
Heart abnormalities		1	2	3			
Brain Malformation		7	2	9			
Brian Hypoxia		0	1	1			
Congenital malformations of the respiratory		3	2	5			
Platelet inflammation		1	0	1			
Underweight with low gestational age		1	0	1			
Total		235	171	406			

” Chi-square observer, Chi-square critical, Df= Degree of freedom, “P-value= Probability value”, “S= significant”, “NS= non-significant”, “HS= high significant”

This table depicts there were a significant association between neonatal gender and causes of their mortality at p-value <0.05.

**Table (5): Relationship between the causes of neonatal mortality and neonatal Birth Weight**

	Rating	Birth Weight						Total	D.f		
		<900	1000-2000	2100-3100	3200-4200	4300-5300	>5400				
Causes of Neonatal Deaths	Congenital emphysema	12	37	15	0	1	0	65	80	obs.= 26.482 crit.= 101.879 P-value=0.064	NS
	Sepsis	7	37	31	9	0	0	84			
	Weight loss and age	2	14	14	2	0	0	32			
	Congenital Anomalies	5	20	10	2	0	0	37			
	Respiratory distress syndrome	12	69	58	18	1	0	158			
	Jaundice	0	1	2	0	0	0	3			
	Birth Defect	1	0	0	0	0	0	1			
	Inhalation of uterine fluids	0	1	0	0	0	0	1			
	Renal Failure	0	1	0	0	0	0	1			
	Acute Weight Lose	0	1	0	0	0	0	1			
	Pneumonia	0	3	0	0	0	0	3			
	Heart abnormalities	0	1	2	0	0	0	3			
	Brain Malformation	0	2	5	1	0	1	9			
	Brian Hypoxia	0	1	0	0	0	0	1			
	Congenital malformations of the respiratory	0	1	4	0	0	0	5			
	Platelet inflammation	0	0	1	0	0	0	1			
	Underweight with low gestational age	0	1	0	0	0	0	1			
	Total	39	190	142	32	2	1	406			

“ Chi-square observer, Chi-square critical, Df= Degree of freedom, “P-value= Probability value”, “S= significant”, “NS= non-significant”, “HS= high significant”

This table depicts there were a non significant association between neonatal wieght and causes of their mortality at p-value >0.05.

**Discussion**

The risk of neonate mortality peaks in the recent birth period, in the first 28 days of life. Therefore, it is essential to ensure the safety of childbirth and to provide

effective care for newborns in order to prevent such deaths. It is noteworthy that about 44% of the deaths of children under the age of five occur during the recent birth. The findings of this study depicts that the a male gender neonate death aged less than five days weighted

1000-2000 kg. This results came in the same line with study conducted in Babylon governorate deals with causes of neonatal mortality.

Our findings depicts the respiratory distress syndrome were records the majority among causes of neonatal death. This results come in the same line with study conducted in Babylon Governorate as a (41.6%) of neonate die by the respiratory distress syndrome as considered the greatest causes of neonate mortality<sup>[16]</sup>.

In Thi-Qar, Iraq studied reasons of newborn deaths in NICU, concluded that the most common reasons of neonatal mortality were RDS<sup>[20]</sup>.

A descriptive-across sectional analytical and retrospective study and the population of the study involved whole babies hospitalized in NICU and neonatal intensive care unit of Sari Bu Ali Hospital. Entitled "A Study of Frequency and Causes of Neonatal Mortality", conducted by Zafari and others at (2012). He founds that there was "not significant relationship" between age at mortality and baby death, results consistent with the current study findings<sup>[21]</sup>.

While the retrospective study which inconsistent with the present finding, conducted by (Azize et al.,2017) at Sulaimani's Maternity Teaching Hospital, achieved in the NICU to investigate the effects of various danger factors such as (newborn gender, expected date of delivery, childbirth weight, mother's age and reasons of mortality. Found that there was no statistically "significant relationship" between neonatal cause and newborn weight because of p-value ( $> 0.05$ )<sup>[25]</sup>.

### Conclusions

A less than five days of life male neonate weighted 1000-2000 kg die by respiratory distress syndrome affected by age and their gender. Health care providers need to be trained on neonatal resuscitation. All nurses and doctors involved in obstetrics and neonatal care should be trained in at least immediate care of the newborn.

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**Conflict of Interest:** None to declare.

**Ethical Clearance:** All experimental protocols

were approved under the College of Nursing and all experiments were carried out in accordance with approved guidelines.

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