



## ORIGINAL ARTICLE

### AUDIT OF NEONATAL DISEASES IN CHRISTIAN MEMORIAL MISSION HOSPITAL SIALKOT IN THE LAST 06 MONTHS

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#### Abstract:

**Objectives:** To assess the disease pattern and occurrence among patients of 1 day to 28<sup>th</sup> days of age.

**Methodology;** Our study was conducted in June 2023 in Christian Memorial Mission Hospital Sialkot. Data collected from the record book to see the pattern of diseases among neonates in last six months from December 2022 to May 2023. Frequency of diseases was noted from age of 1 day to 28th day in each month.

**Results:** Out of collected data of 2123 patients in last six months from December 2022 to May 2023, there were total 1494 patients (70%) of Respiratory distress syndrome (RDS), only 164 cases of meconium aspiration (7.7%), 154 cases of sepsis (7.2%), 140 cases of nuchal cord asphyxia (6.59%), 88 cases of prematurity (4.14%), 58 cases of oligohydramnios (2.73%), 18 cases of cephalopelvic disproportion (0.8%), 8 cases of neonatal jaundice (0.3%) and 6 cases of obstructed cholestasis (0.28%), , , .

**Conclusion:** Study concluded the Prematurity, Low Birth Weight (LBW), birth asphyxia and Neonatal Jaundice (NNJ) were the major causes of neonatal admissions in this study.

**Keywords:** Neonates, Meconium Aspiration, Low Birth Weight, Neonatal Jaundice, Respiratory Distress Syndrome, Prematurity.

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#### Introduction

Neonatal disorders mean disturbance of normal state of body organs and abnormal function of a newborn. Obstetricians play a major role to minimize the number of neonatal disorders.<sup>1</sup>

Neonatal diseases are the most common cause of death in newborns especially in pre-term birth or low birth weight babies.<sup>1</sup>

Meconium aspiration syndrome (MAS) happens when a newborn faces trouble in breathing due to meconium aspiration in lungs.<sup>2</sup>

Preterm is defined as babies born alive before 37 weeks of pregnancy, in moderate to late preterm are babies born between 32-36 weeks gestational age. Very preterm ranges between 28 to 32 weeks and extremely preterm are less than 28 weeks. A newborn less than 2.5 kg birth weight is considered as low birth weight and less than 1.5 kg is very low birth weight and less than 1 kg is very very low birth weight and less than 750 grams is labeled as extremely low birth weight.<sup>3</sup>

Neonatal infections are primarily bacterial in origin, and include pneumonia, sepsis, and

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meningitis. Neonatal infections result in over 5,50,000 neonatal deaths every year. Most of these deaths can be averted by preventive measures, early diagnosis, by year; however, this can be prevented by timely care-seeking, treatment with appropriate antibiotics, and follow up. Early diagnosis requires early recognition of clinical signs, symptoms and syndromes. Possible serious bacterial infection (PSBI) is the most important clinical syndrome in low and middle income countries (LMICs). An estimated 6.9 million episodes of PSBI occur in young infants aged 0-59 days in LMICs every year.<sup>6</sup>

Around 65% of all neonatal deaths occur in just 10 countries. Most of these countries are in Asia. Among these top ten nations, Pakistan ranks third where there are an estimated 300 000 infant deaths annually in the country. According to the most up-to-date data available, the neonatal mortality rate is 42 per 1000 live births which accounts for almost 7% of all newborn deaths globally.<sup>7</sup>

Common Neonatal problems in Pakistan n secondary care hospital are Fever, Jaundice, Respiratory distress syndrome, anemia, peripheral cyanosis, patent ductus arteriosus, infactious diarrhea, pneumonia, meningitis, neonatal sepsis, meconium aspiration, cough, and small vessel disease.<sup>7</sup>

A study was conducted at Neonatal Unit of Sir Gangaram Hospital Lahore from 1<sup>st</sup> January 2007 to 31<sup>st</sup> December 2007, to know the disease pattern and causes of mortality of newborns admitted in neonatal unit. Total of 1391 patients were admitted during study period.

945 (67.9%) were admitted at the age of less than 24 hours. 595 (42.8%) were preterm babies, 686 (49.3%) were low birth weight, 1124 (80.8%) were delivered in Sir Gangaram Hospital. Main causes of admission were prematurity 327 (23.5%), sepsis 305 (21.9%), and birth asphyxia 250

(18%), JNN 157 (11.3%). Neonatal mortality was 430 (30.9%). The main causes of neonatal mortality were prematurity 159 (11.4%), birth asphyxia 97 (7%) and sepsis 58 (4.2%). Study concluded that causes of neonatal morbidity and mortality were preventable like prematurity, birth asphyxia and sepsis. A lot more effort needs to be put in order to increase public awareness as well as improving neonatal services.<sup>8</sup>

In Peshawar, a study was carried out at neonatal ICU of Rehman Medical Institute, from June, 2006 to June, 2012. A total of 4900 patients were admitted in the study period. Among them males to female ratio was 63.3%/ 36.71%. Sepsis neonatorum (NNS) accounted for 2027 (41.36%), Neonatal Jaundice (NNJ) 1777 (36.2%), intrauterine growth retardation (IUGR) 941 (19.2%), prematurity 515 (10.5%), birth asphyxia (BA) 446 (9.1%) and meconium aspiration syndrome (MAS) 362 (7.3%) accounted of total admissions. Among total admissions 4331 (88.4%) were sent home after complete recovery. However in 407 i.e. (8.3%) fatality was seen, while 162 (3.3%) left against medical advice. Study concluded that there is a need for timely referral to a tertiary care hospital from peripheral and non-tertiary setups to prevent and control neonatal mortality and morbidity.<sup>9</sup>

Another study was conducted from January to December 2009 at the neonatal unit of the AKMCC in Hyderabad, the second largest city in the Sindh province, Pakistan. The study was approved by the Ethical Review Committee of the Aga Khan University Hospital. The total number of neonates admitted during the study period were 1,554. There were 979 males (63%) and 575 (37%) were females. The majority of the newborns (51.3%) were admitted during the first 24 hours of life. Regarding the birth weight of these babies, 13 patients were categorized as having ELBW (0.8%), 85 as VLBW (5.4%) and 587 as LBW

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(37.8%). Prematurity and infections were the main causes of admission to the neonatal unit, at 27.9% and 20.33%, respectively.<sup>10</sup>

The major causes of infections were sepsis (70.8%), pneumonia (12.6%) and acute gastroenteritis (8.22%). There were 115 neonates admitted for observation due to other causes (7.4%). Among them, 23.4% had feeding issues, 19.1% had a history of meconium-stained liquor and 16.5% of babies had a history of maternal complications related to pregnancy and admitted for observation in the neonatal unit. The leading causes of death were prematurity, birth asphyxia and neonatal infections.<sup>11</sup>

**Objective;** To evaluate the frequency and occurrence of diseases among the newborns of age 1 day to 28<sup>th</sup> day.

**Methodology;** Our study was conducted in June 2023 in Christian Memorial Mission Hospital Sialkot. We collected data of last six months, from December 2022 to May 2023 to see the frequency of disease from age of 1 day to 28<sup>th</sup> day in each month.

**Inclusion Criteria;** Patients of 1 day to 28<sup>th</sup> day of age.

**Exclusion Criteria;** Patients of Age above 1 month.

**Results**

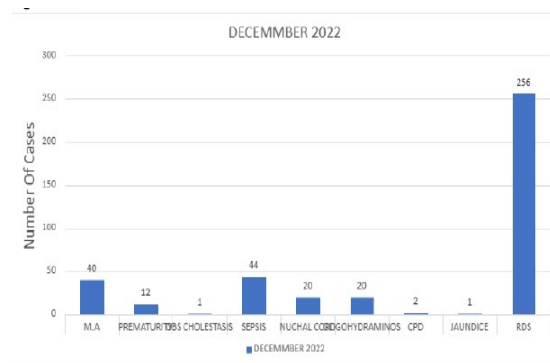
We collected data of 2130 patients in last six months from December 2022 to May 2023. Out of these 2123 patients there were total 1494 patients (70%) of Respiratory distress syndrome (RDS).

Disease	Cases	%
RDS	1494	70.14
Meconium Aspiration	164	7.7
Sepsis	154	7.23
Birth Asphyxia	140	6.57
Prematurity	88	4.13

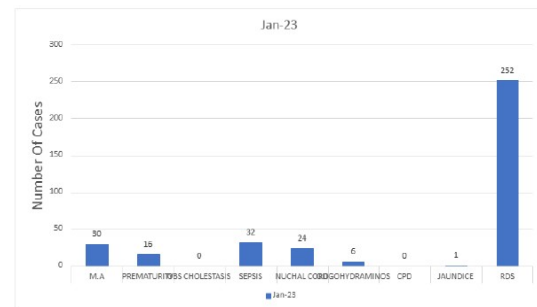
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Oligohydramnios	58	2.72
Cephalopelvic Disproportion	18	0.85
Neonatal Jaundice (physiological)	8	0.38
Obstetrics cholestasis	6	0.28
Total	2130	100

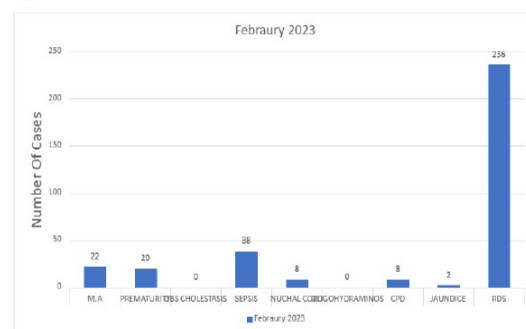
**Table-I Frequency of Diseases**



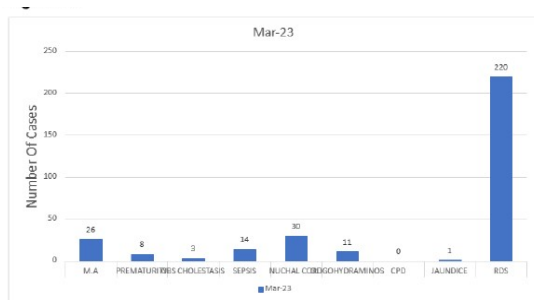
**Figure-I,** frequency and pattern of neonatal cases held in December, 2022



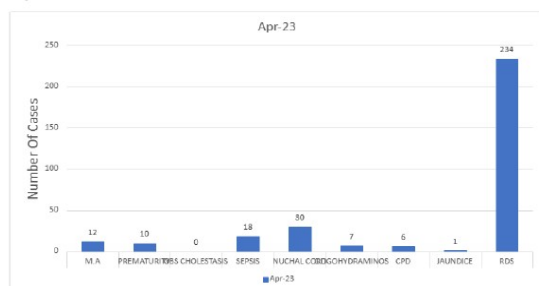
**Figure-II,** frequency and pattern of neonatal cases seen in January, 2023



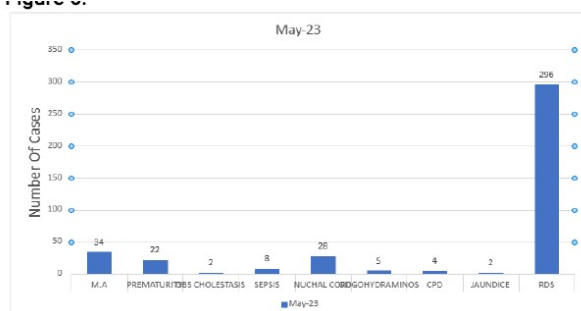
**Figure-III,** frequency and pattern of neonatal cases occurred in February, 2023



**Figure-IV,** frequency and pattern of neonatal cases happened in March, 2023



**Figure-V,** frequency and pattern of neonatal cases diagnosed in April, 2023



**Figure-VI,** frequency and pattern of neonatal cases found in May, 2023

## Discussion:

Different studies expressed and revealed the facts that Meconim aspritia syndrome (MAS), preterm birth, low birth weight, birth asphyxia, Respiratory distress syndrome (RDS) and sepsis are the major causes of deaths.<sup>1, 6</sup>

Our study narrates the same truth, we have the same figures as published in other 3<sup>rd</sup> world countries as far as neonatal deaths are concerned.

## Conclusion

Study concluded the Prematurity, LBW, birth asphyxia and NNJ were the major causes of neonatal admissions in this study.

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The study shows that Respiratory distress syndrome Sepsis, Meconium aspiration and birth asphyxia were the major causes of neonatal admission in our study.

## Recommendation

Reducing admissions for pregnancy-related concerns and preventing deaths from infections can be achieved through various approaches. Encouraging adequate antenatal care and timely referral of high-risk pregnancies to tertiary care centers are crucial steps. Additionally, ensuring thorough antenatal checkups, prompt interventions, and proper referrals for high-risk deliveries contribute to this effort. Conducting sterile and safe deliveries at home can also help. It's essential to raise awareness among all health workers dealing with pregnant women to facilitate timely referrals for high-risk pregnancies. Moreover, emphasizing the importance of proper hand-washing can play a significant role in preventing infection-related deaths.

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