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Overview of Neonatal Death in Semarang City Central Java Province in 2018

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ABSTRACT
Neonatal death is a worldwide concern. Sustainable Development Goal targets by 2030 reduce neonatal mortality to below 12 per 1000 live births. Indonesia Demographic Health Survey in 2017 show that neonatal mortality is 15 per 1,000 live births. Semarang city is one of the provinces in Central Java. Infant mortality rate Semarang city is 7.6 per 1,000 live births in 2017 and 7.63 per 1,000 live births in 2016. Semarang data of neonatal mortality rate is 5.8 per 1,000 live births in 2017 and 5.73 per 1,000 live birth in 2016. Ranking of neonatal mortality rates in Central Java, Semarang city rankings dropped to number 12 in 2017 compared to 2016, which was ranked 10th. The purpose of this research is to determine factors that cause neonatal death in Semarang City year 2018. This study is descriptive with using secondary data from Health City Service of Semarang. Characteristics of most cases are multigravida, low birth weight, mothers have a history of high risk, place of birth in the hospital, place of death in the hospital, and ANC frequency more than 4 times. The causes of neonatal death were asphyxia (27.63%), congenital abnormalities (17.11%), respiratory distress syndrome (14.47%), and low birth weight (11.84%). Asphyxia is the highest cause of neonatal death. Continuous training in handling asphyxia in health workers is needed. Supervision of high-risk pregnant women needs to be improved in quality and increase of family planning.

Keywords: *Neonatal, Mortality, Semarang.*

1. INTRODUCTION

Globally 2.5 million children died in neonatal age which in the first month of life. The majority of all neonatal deaths occurs during the first week of life, and about 1 million newborns die within the first 24 hours [1]. Point number three of Sustainable Development Goal, by 2030, will prevent deaths of newborns and children under 5 years of age, targeted to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births [2]. The major causes of newborn mortality are prematurity, birth asphyxia and birth trauma, neonatal sepsis, and congenital anomalies [3]. Indonesia Demographic Health Survey in 2017 show that neonatal mortality is 15 per 1,000 live births [4]. Semarang city is one of the provinces in Central Java. Semarang city infant mortality rate is 7.6 per 1,000 live births in 2017 [5] and 7.63 per 1,000 live births in 2016 [6]. Semarang's neonatal mortality rate is 5.8 per 1,000 live births in 2017 and 5.73 per 1,000 live birth in 2016. Ranking of neonatal mortality rates in Central Java, Semarang city rankings dropped to number 12 in 2017 [7] compared to 2016, which was ranked 10th [8].

2. METHOD

This study is descriptive analysis with using secondary data from Maternal and Child Health Section, Public Health Sector, Health City Service of Semarang. Number of neonatal deaths is 76 cases. Sample in this study is total sampling. Result will be presented in tables and percentages.

3. RESULTS

3.1. Respondent Characteristics

There were 76 cases of neonatal deaths during 2018. Mean birth weight was 2344±839 grams. Mean neonatal age was 4±5.1 days. Mean gestational age was 35.5±4.5 weeks. Mean mothers age was 30±5.6 years.

Most cases of neonatal death are in the first week of birth. Most cases experience low birth weight. Most

place of deaths in the hospital. Most neonatal birth places in the hospital (Table 1).

Table 1. Respondent characteristics

Characteristics	n	%
Age		
Perinatal (0-7 days)	62	81.6
Neonatal (8-28 days)	14	18.4
Birth Weight		
Low Birth Weight	40	52.63
Normal	36	47.37
Place of birth		
Hospital	68	89.5
Midwife practice	4	5.3
Clinics	3	3.9
Home	1	1.3
Place of Death		
Hospital	73	96.1
Home	2	2.6
Clinics	1	1.3
Mothers Age		
Too Young	4	5.6
Normal	53	73.6
Too Old	15	20.8
Gravida		
Multigravida	56	74.7
Primigravida	19	25.3

3.2. Cause of Neonatal Mortality

The most cause of neonatal death is asphyxia, congenital abnormalities, respiratory distress syndrome, low birth weight, and premature (Table 2). Others are aspirations for milk, hepatitis, jaundice, tuberculosis, and rubella.

Table 2. Neonatal mortality profile

Cause of Neonatal Death	n	%
Asphyxia	21	27.6
Congenital abnormalities	13	17.1
Respiratory Distress Syndrom	11	14.5
Low Birth Weight	9	11.8
Premature	8	10.5
Sepsis	4	5.3
Birth trauma	2	2.7
Others	8	10.5
Total	76	100

3.3. Cause of Neonatal Mortality on Age

Analyzing the deaths based on neonatal age showed about deaths in first week of birth (0-7 days) cause asphyxia (30.6%). At a month of life, high cause deaths are asphyxia and congenital abnormalities (14.3%). Neonatal deaths occur in many cases at the age of 0-7 days (Table 3).

Table 3. Mortality profle based on age

Cause of Neonatal Death	Age	
	Perinatal (%) 0-7 days	Neonatal (%) 8-28 days
Asphyxia	19 (30.6)	2 (14.3)
Congenital abnormalities	11 (17.7)	2 (14.3)
RDS	10 (16.1)	1 (7.1)
Low Birth Weight	5 (8.1)	4 (28.6)
Premature	6 (9.7)	2 (14.3)
Sepsis	3 (4.8)	1 (7.1)
Birth trauma	2 (3.2)	0
Others	6 (9.7)	2 (14.3)

4. DISCUSSION

Neonatal deaths occur most often in the early weeks of life. Most place of neonatal death in hospital. Other study show almost all (88%) neonatus who died received treatment and more than 75% died in the hospital [9]. The average birth weight indicates less birth weight. Underweight birth is also one of the causes of infant death. Most of pregnancy are preterm. Preterm is a risk factor for infant death. Preterm births will get higher risk of perinatal death than term babies [10]. Prematurity is condition that make preterm infant at high risk. Prematurity that happen to premature infant can be primary cause of death. And secondary cause of death to specific conditions such as RDS, Necrotizing entero colitis, Intra ventricular hemorrhage. Asphyxia and congenital anomalies including infection due to various organisms, it has rarely been determined [11].

Asphyxia may occur in infants, which is term or preterm. Asphyxia and sepsis that happen in early neonatal can be major causes of neonatal death [10]. Deaths caused by asphyxia generally occur within the first 2 days of life [11]. Second cause of death is respiratory distress syndrome. The complication of hyaline membrane disease or respiratory distress syndrome has steadily increased across the decades [12]. In this study RDS became the third cause at the perinatal age. Respiratory distress syndrome (RDS) is the major cause of respiratory failure in preterm neonates and very closely related to gestational age and birth weight [13]. Most mothers in this research are multigravida. Being multigravida can increase family resources, needs for more attention and also can increase exposure to infections in children [14].

Handling in the early weeks of birth, one of them with neonatal visits. Neonatal visits aim to improve

neonatus access to basic health services, knowing as early as possible if there are abnormalities / health problems in neonates [15]. Semarang City Health Department recruits health surveillance personnel with minimum background in Midwifery known as the GASURKES KIA [5]. Gasurkes is a health surveillance officer under the command of the Health Services Section of the Mother and Child Health Section of the Semarang City Health Office. The main task of Gasurkes is to conduct regular data collection and assistance to all pregnant women in their respective work areas to reduce maternal and child mortality. In addition to data collection and assistance, Gasurkes is also tasked with providing counseling on maternal and child health.

The Government of Semarang City through the Semarang City Health Service seeks to reduce maternal mortality. This was realized with the establishment of PONED Puskesmas (Basic Obstetric and Neonatal Services) and PONEK Hospital (Comprehensive Obstetric and Neonatal Services) in 2013. In addition, there was also an increase in the referral network from basic level health services to higher health services with Ambulances Hebat. Other efforts that have been made are the formation of cooperation / MOU between PONEK Hospital to aside provides guidance to PONED Puskesmas. PONEK Hospital was fostered by dr. Kariadi Hospital. Commit commitments with professional organizations such as POGI, IDI, IDAI, IBI and also provide guidance to hospitals and midvifery practice. In addition, in the upstream sector there are also roles of other stakeholders, for example from Women Empowerment Community (PKK), GOW, and universities to assist high-risk and post-partum pregnant women. In terms of regulations, there is a Regional Regulation No. 2 of 2015 concerning the Safety of Mothers and Children concerning Mother and Child Safety.

5. CONCLUSION

The causes of neonatal death were asphyxia (27.63%), congenital abnormalities (17.11%), respiratory distress syndrome (14.47%), and low birth weight (11.84%). Asphyxia is the highest cause of neonatal death which is happen in first week of life. Continuous training in handling asphyxia in health workers is needed. Supervision of high-risk pregnant women needs to be improved in quality and increase of family planning.

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