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Comprehensive midwifery care for a 14-day-old term neonate with severe dehydration and pneumonia at Gambiran Regional Hospital, Kediri City

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***Abstract*:**
Severe dehydration in neonates is a medical emergency that can lead to hypovolemic shock, kidney failure, and even death. The combination of dehydration and pneumonia worsens the prognosis and increases infant mortality. The purpose of this article is to describe comprehensive midwifery care for a 14-day-old term neonate with severe dehydration and pneumonia at Gambiran Regional Hospital, Kediri City. This study used a case study method with the Varney midwifery management approach and SOAP documentation. Data were obtained through case observation, medical record review, family interviews, and literature review. The results showed that a 14-day-old infant was referred with recurrent vomiting, weight loss, chest wall intractability, and signs of severe dehydration. Midwifery care included intravenous rehydration according to WHO protocol, nasal oxygen administration, close monitoring of vital signs, and collaboration with a pediatrician for antibiotic administration. Evaluation showed improved consciousness and hemodynamic stabilization. Therefore, early detection, rapid rehydration according to protocol, and interprofessional collaboration are needed to reduce morbidity and mortality in infants with severe dehydration and pneumonia.

Keywords
severe dehydration; pneumonia; neonate

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INTRODUCTION

The neonatal period is a highly vulnerable period for health problems because the baby's organs are still adjusting from intrauterine to extrauterine function. In the first weeks of life, babies are highly dependent on maintaining fluid homeostasis, receiving adequate nutrition, and developing an immature immune system (Kliegman et al., 2023). This condition makes neonates vulnerable to serious problems, one of which is dehydration. Dehydration in infants can develop rapidly due to their low body fluid reserves, high basal metabolic rate, relatively large body surface area, and immature kidney function for concentrating urine (Chaudhary et al., 2024). Zakerihamidi et al. (2024) found that breastfeeding frequency of less than eight times a day was significantly associated with

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the incidence of neonatal hypernatremic dehydration, accompanied by inadequate elimination and increased serum sodium levels.

According to the WHO (2023), dehydration due to diarrhea remains one of the leading causes of death in infants worldwide, with the number of deaths reaching more than 525,000 annually. In developing countries, including Indonesia, diarrhea remains a major public health problem and often causes severe dehydration in infants and toddlers. Dehydration in neonates is even more dangerous when accompanied by lower respiratory tract infections such as pneumonia.

Lutpiatina et al. (2024) showed that acute respiratory infections in toddlers have the potential to develop into pneumonia if not treated promptly, especially in areas with a high prevalence of infectious diseases. Pneumonia is one of the leading causes of morbidity and mortality in infants and toddlers worldwide and is estimated to contribute around 15% of total infant deaths annually (Irawan et al., 2019). Ananda and Budyanra (2024) found that nutritional status, immunization, and environmental conditions are closely related to the high prevalence of pneumonia in children in Indonesia. Low coverage of exclusive breastfeeding, poor nutritional status, and population density are significant factors that increase cases of pneumonia in toddlers (Wigunawanti et al., 2024).

A study by Jayaprakash et al. (2025) showed that hypernatremic dehydration in neonates can lead to serious complications such as seizures, severe electrolyte disturbances, and even death if not promptly treated with appropriate fluid therapy. Management of neonates with severe dehydration and pneumonia requires comprehensive and collaborative care. Midwifery care plays a crucial role in early detection, stabilization of the infant's condition, close monitoring, and educating the family about potential danger signs. Saha et al. (2025) emphasized that severe dehydration in infants can worsen respiratory tract infections, including pneumonia, thereby increasing the risk of complications and death.

The case reported by Venkatesh et al. (2023) shows that hypernatremic dehydration in neonates can lead to serious neurological complications in the form of refractory seizures that are difficult to manage. Therefore, midwives also have a role in interprofessional collaboration with pediatricians and nurses to ensure that infants receive intravenous fluid therapy, oxygenation, and antibiotics according to protocol. This case study aims to provide a realistic portrayal of the implementation of comprehensive midwifery care for neonates with severe dehydration and pneumonia, highlighting the importance of midwives in reducing neonatal morbidity and mortality through an evidence-based approach. In addition, (Arora et al. 2024) found that low breastfeeding frequency and less intensive weight monitoring were strongly associated with the occurrence of NHD, thus reinforcing the importance of early intervention.

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METHODS

This study employed a descriptive case study design, incorporating a comprehensive midwifery care approach. The purpose of this method is to provide an in-depth overview of the implementation of midwifery care for a 14-day-old neonate diagnosed with severe dehydration and pneumonia. The study was conducted in the Neonatal Care Room (Panji Room) of Gambiran Regional Hospital, Kediri City, from June 16–28, 2025. The subject of the study was Mrs. N's 14-day-old baby with severe dehydration and pneumonia, while the object of the study was the midwifery care process provided to the baby.

Data were collected through direct observation of the patient's condition, interviews with family members and healthcare professionals, review of medical records, and a literature review to strengthen the theory and foundation of management. The research instruments included maternal and neonatal assessment formats, a midwifery management format based on Varney's seven-step approach, and patient progress notes using the SOAP (Subjective, Objective, Assessment, Plan) approach. The analysis was conducted using a qualitative descriptive approach, outlining the assessment results, diagnosis, intervention planning, implementation, and evaluation, all of which were aligned with midwifery practice standards and current literature.

RESULTS

The infant presented to the emergency room (ER) with complaints of repeated vomiting, weight loss, and shortness of breath. Examination revealed a temperature of 36.8°C, a pulse rate of 146 beats/minute, a respiratory rate of 56 breaths/minute, sunken eyes, dry oral mucosa, poor skin turgor, and chest indrawing. The diagnosis was made as severe dehydration with pneumonia. Interventions included intravenous fluid administration of Ringer's lactate according to protocol, nasal oxygen at 1–2 L/minute, monitoring of vital signs and urine output, and collaboration with the pediatrician for antibiotic administration. Education was also provided to parents regarding the danger signs of dehydration and pneumonia. Following the intervention, the infant demonstrated improvement, with stabilization of vital signs and increased consciousness.

DISCUSSION

Isotonic intravenous fluids are safer and more effective than hypotonic fluids in neonates, as they can reduce the risk of iatrogenic hyponatremia without increasing other complications. Midwifery

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care in this case involved both collaborative and independent actions (Ozkan et al. 2024). Collaborative actions were carried out with a pediatrician for antibiotic administration and supporting examinations. This is important because neonatal pneumonia can be caused by various pathogens, so empiric antibiotic administration must be initiated immediately (Irawan et al., 2019). Independent actions by the midwife included monitoring vital signs, administering nasal oxygen to prevent hypoxia, assessing urine output to evaluate fluid status, and educating the family about potential danger signs. Low-flow nasal oxygen has been shown to help maintain oxygen saturation above 92% in neonates with respiratory distress (Anigilaje, 2018). In this case, the use of nasal oxygen at 1–2 L/minute successfully helped stabilize the baby's condition. A study conducted by Tanwar, P. et al. (2024) reported that hypernatremia dehydration in young infants (≤ 2 months) was found in ~4.89% of cases, with high mortality, especially when accompanied by acute renal failure, sepsis, or the need for ventilator support. Family education is also an important part of care because it increases parental involvement in monitoring the baby after discharge from the hospital. Kotloff et al. (2024) reported that rapid and appropriate intravenous rehydration intervention in infants with severe dehydration can reduce mortality by more than 50%, making it a key step in neonatal emergency management. Ashraf et al. (2022) found that neonates with hypernatremia dehydration have a clinical profile characterized by significant weight loss, irritability, and a high risk of neurological complications.

Compared with other literature, this case demonstrates a common pattern: the combination of severe dehydration and pneumonia increases the risk of complications such as acute kidney failure, metabolic acidosis, and hypovolemic shock (Lamberti et al., 2024). Therefore, multidisciplinary involvement, including pediatricians, nurses, and midwives, is key to successful case management. Therefore, this case study highlights the importance of early detection, rapid and appropriate fluid administration, adequate oxygenation, close monitoring, and family education as key strategies to reduce morbidity and mortality associated with severe dehydration and pneumonia in neonates.

CONCLUSION

The results of this case study demonstrate that comprehensive midwifery care for a 14-day-old neonate with severe dehydration and pneumonia requires prompt, precise, and integrated management. Intravenous fluid rehydration, as per WHO protocols, has been shown to effectively improve hemodynamic conditions, while nasal oxygen administration helps prevent hypoxia. Multidisciplinary collaboration with pediatricians is essential for appropriate antibiotic administration and follow-up monitoring. The midwife's role extends beyond clinical assessment and monitoring to

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providing family education on recognizing danger signs and administering home care. With a holistic, evidence-based approach, morbidity and mortality due to severe dehydration and pneumonia in neonates can be reduced.

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