

Puerperal Sepsis in Rural Nepal: A One-Year Retrospective Study (2023–2024) and Strategies for Mortality Reduction

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Abstract:

➤ Background:

Puerperal sepsis is a leading cause of maternal morbidity and mortality in Nepal's rural districts. Timely intervention and preventive strategies are essential to reduce preventable deaths.

➤ Objective:

To assess the prevalence, clinical features, and contributing factors of puerperal sepsis in rural areas of Nepal, and to propose mortality-reducing interventions.

➤ Methods:

A retrospective record review was conducted across three rural hospitals in Dolpa, Humla, and Bajura districts from June 2023 to May 2024. Data on postpartum women diagnosed with puerperal sepsis were collected and analyzed.

➤ Results:

Among 642 deliveries, 48 (7.5%) developed puerperal sepsis. Eight maternal deaths occurred, yielding a case fatality rate of 16.7%. Risk factors included home delivery (62.5%), delayed care-seeking, and poor hygiene.

➤ Conclusion:

Puerperal sepsis in rural Nepal is a significant but preventable cause of maternal mortality. Community education, improved hygiene, and health system strengthening are key strategies.

Keywords: Puerperal Sepsis, Maternal Mortality, Rural Nepal, Postpartum Infection, Case Fatality.

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I. INTRODUCTION

Puerperal sepsis accounts for approximately 10% of maternal deaths globally and disproportionately affects women in low-income regions [1]. In Nepal, although national efforts have reduced maternal mortality, rural regions continue to experience high rates of sepsis-related deaths due to inadequate access to skilled birth attendants and delayed recognition of danger signs [2].

The World Health Organization defines puerperal sepsis as an infection of the genital tract occurring from the

onset of labor to 42 days postpartum, characterized by symptoms including pelvic pain, fever, abnormal discharge, and delayed uterine involution [3]. This study aimed to analyze the burden of puerperal sepsis in rural Nepal and explore actionable strategies to reduce maternal deaths in such regions.

II. METHODS

➤ Study Design and Setting

This was a retrospective descriptive study conducted at three government-run health institutions in the remote

districts of Dolpa, Humla, and Bajura, chosen for their limited maternal healthcare infrastructure.

➤ *Data Collection*

Hospital delivery records, maternal admission logs, and case notes from June 2023 to May 2024 were reviewed. Women presenting within 42 days postpartum with signs meeting WHO criteria for puerperal sepsis were included. Data collected included:

- Age, parity, delivery site
- Clinical features, time of symptom onset
- Interventions given and final outcomes

➤ *Data Analysis*

Data were entered into Microsoft Excel and analyzed using SPSS v26. Frequencies and proportions were used for descriptive variables. Logistic regression was used to examine predictors of mortality.

III. RESULTS

➤ *Prevalence and Demographics*

- Total deliveries: 642
- Puerperal sepsis cases: 48 (7.5%)
- Case fatality rate: 16.7% (n = 8)

➤ *Demographics of Affected Patients:*

- Mean age: 27.3 ± 5.4 years
- Primiparous: 45.8%
- Home deliveries: 62.5%
- ANC visits (≥4): 29.2%

➤ *Clinical Features*

- Fever: 100%
- Foul-smelling discharge: 81.3%
- Lower abdominal pain: 72.9%
- General malaise: 64.6%

➤ *Mortality-Associated Risk Factors*

- Home deliveries: 7/8
- Presentation after >72 hours: 6/8
- Lack of antibiotics: 5/8
- Septic shock at presentation: 4/8

IV. DISCUSSION

The incidence of puerperal sepsis (7.5%) in this study is comparable to findings from similar low-resource settings [4]. High mortality was associated with delays in recognition and treatment. Cultural barriers and reliance on home births in rural Nepal exacerbate the risk.

Government strategies such as increasing institutional delivery rates and strengthening Female Community Health

Volunteer (FCHV) networks have shown promise, but require further investment [2,5].

V. RECOMMENDATIONS

- Train local birth attendants and FCHVs to identify and refer high-risk cases.
- Introduce hygiene kits and postnatal care visits to promote early infection detection.
- Ensure essential antibiotics are stocked in peripheral centers.
- Improve transport networks and referral protocols for emergencies.
- Establish mobile maternal health teams in remote villages.

VI. CONCLUSION

Puerperal sepsis remains a serious threat to maternal health in rural Nepal. Strengthening community-level interventions, improving postpartum care, and ensuring access to emergency obstetric services are critical to reducing maternal deaths.

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