

Title: Predictors of neonatal sepsis in public referral hospitals, Northwest Ethiopia: A case control study

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Abstract

Background: Despite remarkable progress in the reduction of death in under-five children, neonatal mortality has shown little or no concomitant reduction globally. It is also one of the most common causes of neonatal death in Ethiopia. Little is known on predictors of neonatal sepsis. Risk based screening and commencement of treatment appreciably reduces neonatal death and illness. Therefore, the main aim of this study was to identify predictors of neonatal sepsis in public referral hospitals of Northwest Ethiopia.

Methods: Institutional based unmatched case-control study was conducted among a total of 231 neonates in Debre Markos and Felege Hiwot referral hospitals from March 2018- April 2018. Neonates who fulfill the preset criteria for sepsis were considered as cases and neonates diagnosed with other medical reasons except sepsis were controls. For each case, two consecutive controls were selected by simple random sampling method. Data were collected using structured pretested questionnaire through a face to face interview with index mothers and by reviewing neonatal record using checklist. The collected data were entered into Epi data version 3.1 and exported to STATA/ SE software version 14. Binary and multivariable logistic regression analyses were employed. Statistical significance was declared at $P < 0.05$.

Result: Multivariable logistic regression analysis showed that, duration of rupture of membrane ≥ 18 hours was significantly associated with sepsis (AOR = 10.4, 95%CI = 2.3–46.5). The other independent predictors of neonatal sepsis were number of maternal antenatal care service ≤ 3 (AOR = 4.4, 95%CI = 1.7–11.5), meconium stained amniotic fluid (AOR = 3.9, 95%CI = 1.5–9.8), urinary tract infection during pregnancy (AOR = 10.8, 95% CI = 3.4–33.9), intranatal fever (AOR = 3.2, 95% CI = 1.1–9.5), first minute APGAR score < 7 (AOR = 3.2, 95% CI = 1.3–7.7), resuscitation at birth (AOR = 5.4, 95% CI = 1.9–15.5), nasogastric tube insertion (AOR = 3.7, 95% CI = 1.4–10.2).

Conclusion: Neonatal invasive procedures, ANC follow up during pregnancy, different conditions during birth like meconium stained amniotic fluid, low APGAR score and resuscitation at birth were the independent predictors of neonatal sepsis.

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