

Vaginal Group B Streptococcus Colonization: Prevalence, Associated Factors and Antimicrobial Susceptibility pattern among Pregnant Women in Jimma, Ethiopia

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Background

Although group B streptococcus (GBS) is usually harmless in healthy pregnant women, it can cause a relatively rare but very serious infection in the newborns. The importance of GBS is that it can be transferred to a neonate from their mother's genital tract during delivery, and cause sepsis and meningitis in newborns [1]. In the absence of maternal chemoprophylaxis, up to 50 % of neonates born to colonized women acquire GBS colonization and 1–2 % of these neonates acquire invasive disease [2].

In Ethiopia, few studies have been done on GBS colonization among pregnant women. Therefore the aim of this study was to determine the prevalence of vaginal GBS colonization, antimicrobial susceptibility patterns and assess risk factors among pregnant women.

Method

A cross-sectional study was conducted from September 2012 to June 2013 among pregnant women attending an antenatal clinic at Jimma University Hospital, Ethiopia. Vaginal swabs were obtained from 200 pregnant women at 35–37 weeks of gestation. The specimens were cultured in Todd-Hewitt broth medium supplemented with gentamicin and nalidixic acid and subsequently sub-cultured on sheep blood agar. GBS identification was made by Gram stain, catalase reaction, hemolytic activity, hippurate and CAMP tests. Antimicrobial susceptibility testing was carried out by modified Kirby–Bauer disk diffusion method.

Ethics Approval

Ethical approvals was obtained from Jimma University Ethical Review Committee.

Result

A total of 200 pregnant women were included in this study. The age of the women ranged from 16 to 40 years with a mean age of 26.3 years (SD ±5). The majority (73.3 %) of the participants was between the ages of 21–30 years.

The vaginal carriage rate of group B streptococci was 13%. In the present study, no statistically significant association was found between the frequency of GBS and age, education, occupation, residence and previous obstetric history. However, GBS colonization rates were significantly higher among multigravida women ($P < 0.05$).

The susceptibility patterns of GBS ($n=26$) isolated from pregnant women against four antimicrobial agents is presented in **Table 1**. Resistance to ampicillin, penicillin, clindamycin, and erythromycin was 30.8%, 23.1%, 19.2% and 15.4%, respectively.

Table 1: Antimicrobial susceptibility pattern of GBS ($n=26$) isolated from pregnant women

Antimicrobials	Susceptible No (%)	Resistant No (%)
Penicillin G	20(76.9)	6(23.1)
Ampicillin	18(69.2)	8(30.8)
Erythromycin	22(84.6)	4(15.4)
Clindamycin	21(80.8)	5(19.2%)

Conclusion

The high frequency of GBS colonization and resistance to the commonly used antibiotics suggests the importance of the screening of GBS colonization and performing susceptibility testing in pregnant women.

Since GBS screening during pregnancy is not yet standard of care in Ethiopia, Furthermore, data on the prevalence of GBS neonatal disease, preventative measures, and outcome of infected infants are greatly needed in Ethiopia.

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Disclosure

No conflict of interest

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