

## A Case study of Group B Streptococcus Associated with Women in Antepartum Period and their Neonates, Ile Ife South-western Nigeria

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### Abstract

Streptococcus agalactiae colonizes the genital and alimentary canal. In pregnancy, vertical transmission of GBS to the new-born can cause neonatal sepsis, pneumonia and meningitis. The aim of this study was to work out the prevalence of GBS in pregnant women in their trimester, frequency of neonatal colonization and Antibiotics Susceptibility of the isolates recovered at the Obafemi Awolowo University Teaching Hospital Complex (OAUTHC) Ile- Ife, Osun State, Nigeria. Rectum and vaginal swabs were collected from a complete number of 24 trimester pregnant women between 35 - 37 weeks of gestation and their neonate delivered at OAUTHC both at labour ward and labour ward theatre. The samples were cultured in Todd Hewitt Broth and sub cultured on sheep agar and Chromogenic Strepto BID agar and incubated at 37°C for twenty-four hours.

Identification was supported the Gram staining, presence of  $\beta$ -haemolysis and absence of catalase production. Antimicrobial susceptibility testing was performed using the Kirby-Bauer disk-diffusion methods. GBS colonization on the average was confirmed in 27.8% of pregnant women and their neonate and proportion of GBS isolated from the vagina 6 (30%) as compared to rectum 7(35%), neonates 4 (20%), vaginal and neonate 1(5%), rectum and neonate 1(5%), and both vagina, rectum and neonate 1 (5%). All isolates were found vulnerable to 40% clindamycin 35% vancomycin, 90% ciprofloxacin 40% erythromycin and 100% resistance to penicillin

used. there's need for correct handling of neonates by the health care practitioner and screening of pregnant women attending antenatal care, including known antibiotic Powered by Editorial Manager® and ProduXion Manager® from Aries Systems Corporation susceptibility for an appropriate antepartum antimicrobial prophylaxis are often offered.

### Keywords

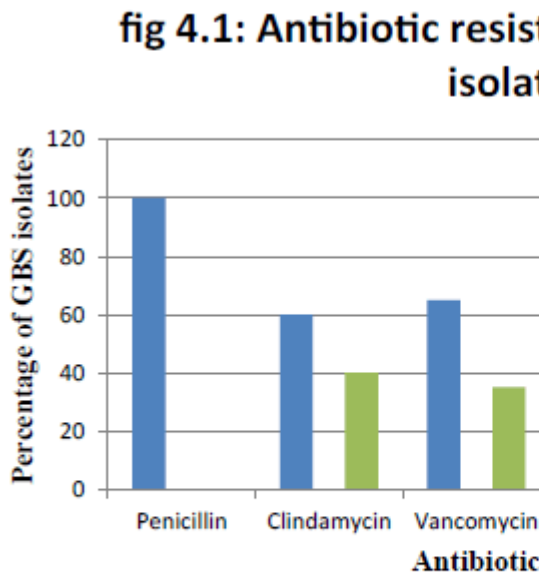
Antepartum; Neonate; Group B Streptococcus; Maternal morbidity; Postpartum; Antibiotics

### Introduction

Group B Streptococcus or Streptococcus agalactiae is one among the leading preventable causes of mortality and morbidity especially in neonate whose mothers are carrier worldwide B Streptococcus (GBS) may be a Gram positive Bacterium regarded mainly as pathogen of pregnant or post-partum women and neonates. It is also a big explanation for mortality and morbidity in nonpregnant adult, particularly those with underlying medical condition and in elderly patient like stroke, kidney failure, carcinoma, DM, nervous disorder and other disease, but with most incidence occurring among neonates. Group B Streptococcus (GBS) may be a normal flora or commensal of the genitourinary and alimentary canal of 15%-50% of healthy woman. Neonate can acquire GBS from their mother during the passage through the passage or through aspiration of infected amniotic fluid. Vertical acquisition of GBS involving colonization of the skin or mucus

membrane occurs in 15-50% new born to GBS colonized mother. In Adult, B Streptococcus causes tract Infection, osteomyelitis, pneumonia, meningitis, bacteremia, skin and soft tissue infection and Streptococcal toxic shock syndrome Syndrome . The bacterium also causes high risk of preterm deliveries in pregnant woman . Infections in new-borns occurring within the primary week of life are designated Early-onset disease. Late-onset infections occur in infants aged >1 week, with most infections evident during the primary 3 months of life (CDC, 2010)

**Figure 1.**



**Figure 1** Antibiotics susceptibi recovered in Ile Ife, Sou

**Figure 1:** Antibiotics susceptibility profile of GBS isolates recovered in Ile Ife, South western Nigeria.

GBS transmission rate from moms to youngsters through vaginal conveyance is around half, just 1-2% of colonized children create intrusive gathering B streptococcal ailment . The pace of beginning stage disease has diminished from 1.7 cases per 1,000 live births in 1993 to 0.28 cases for every 1,000 live births in the ongoing years (CDC, 2010). GBS colonization in ladies changes among

age bunches relying upon study populace, destinations examined and technique for location. About 25% of pregnant ladies (CDC, 2010) and 35% youthful, non-pregnant lady convey GBS in the rectum or vagina.

GBS keeps on being helpless to penicillin, ampicillin, and original cephalosporins . Under these conditions, the elective anti-toxin decisions have customarily been erythromycin or clindamycin. In any case, protection from these two anti-toxins has been strikingly expanding. As a result of conceivable obstruction issues with erythromycin and clindamycin, vancomycin is currently the underlying suggested treatment of GBS disease in patients who are hypersensitive to penicillin.

**Test Collection**

An aggregate of 24 pregnant ladies tests were gathered from each investigation site. Two sterile swab sticks were utilized to take two distinct examples from every patient. Vaginal examining was completed by embeddings and turning the sterile swab stick against the vaginal divider at the mid bit of the vault and the swab was painstakingly pulled back to forestall defilement with the microflora of the vulva. Another sterile swab stick was embedded 1.5-2.0 cm past the butt-centric sphincter and tenderly turned to contact the butt-centric sepulchers lastly sterile swab was utilized to clean the umbilical string of the recently brought into the world following conveyance.

All examples were gathered by Midwifery/Gynecologist and the swab examples were put in Stuart transport media and were shipped to Department of Microbiology Laboratory of OAU for Laboratory examination.

**Screening for individual disengages**

After examples assortment under aseptic conditions, the swab sticks were vaccinated into particular improvement stock medium (Todd-Hewitt stock enhanced with 10 µg/ml Colistinand 15 µg/ml Nalidixicacid, Oxoid England)

under aseptic condition and were brooded vigorously at 37°C for 24 hours. Following 24 hours hatching, stock societies were watched for development (Turbidity) and afterward sub refined onto 5% sheep Blood Agar and brooded for 18-24 hours at 37°C to increment the recuperation pace of GBS. The plates that had no development were re brooded for the time being once again. Where there were development, the states were inspected for their attributes frontier morphology and beta-haemolysis and non beta-haemolysis were additionally thought of. The presumed settlements were Gram recolored (Gram positive) and tried for (catalase negative).

### **Results**

An aggregate of 72 swabs were taken from 24 pregnant ladies at 35-37 weeks of incubation and their children at OAUTHC, 20 (27.8%) were refined positive for GBS dependent on Bergy's manual Biochemical

test and methodical bacteriology. Morphological appearance of the considerable number of GBS positive separates on chromogenic agar and the capacity to lyse blood (from 5% sheep blood agar) were watched.

Most separates were pink or cream in shading, round fit as a fiddle, there mistiness is either obscure or clear, whole in edges and have smooth surfaces. Catalase test were done on all the disconnects to affirm that they were GBS, and all tried catalase negative. The separates Gram recolored and saw under magnifying instrument utilizing submersion oil, likewise totally seemed purple cocci in chains. The segregates were distinguished dependent on Bergy's Manual of efficient Bacteriology.

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