

## PREVALENCE AND ISOLATION OF GROUP B *STREPTOCOCCUS* FROM UROGENITAL TRACT OF PREGNANT WOMEN

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### ABSTRACT

Group  $\beta$  *Streptococcus* (GBS) is the major causative agent of vaginal infection in pregnant women. In many cases, this infection is transferred to the newborn during childbirth and proves fatal to the baby. Here, the prevalence of GBS in pregnant women is studied and their antibiogram and MAR Index were checked.

**KEYWORDS:** GBS, antibiogram, MAR Index.

### INTRODUCTION

Group  $\beta$  *Streptococcus* has been and continues to be one of the most common cause of neonatal and perinatal sepsis worldwide (Davis *et al.*, 2001). Although the rate of colonization has not reduced, the mortality rate of the newborns has been highly reduced considerably due to the improved knowledge on infections (William *et al.*).  $\beta$  *Streptococcus* is present in the lower vaginal tract of 15- 20% pregnant women (Hoogkamp-Korstanje *et al.*, 1982), which acts as the reservoir for the neonates to get infected during the time of birth (Franciosi *et al.*, 1973). Vaginal colonization by GBS during pregnancy is associated with premature rupture of membrane, still birth & low birth weight babies (Wheelver *et al.*, 1966). This may lead to purulent meningitis in new borns & neonatal sepsis in extreme cases (Baker *et al.*, 1973). Such colonization is the result of gastrointestinal colonization, which is prevalent in many adults though no symptoms are seen (Regan *et al.*, 1991).

### MATERIALS AND METHODS

Vaginal swabs were collected from 100 pregnant women seeking medical assistance from a tertiary care hospital in Coimbatore area. The swabs were collected from women in the age

group 19- 34 years. The collected swabs were transported to the laboratory in transport medium and were inoculated onto 5% sheep blood agar with 5% CO<sub>2</sub> and incubated at 37°C for 24. The plates were observed for presence of hemolysis (Madhavi *et al.*, 2011).

The bacterial isolates were subjected to Gram Staining and the slides were observed under a microscope. To confirm that the isolates are *Streptococcus sp.*, catalase test was done by adding a loopful of the culture onto a drop of hydrogen peroxide on a clean glass slide.

The Antibiogram of the Streptococcal isolates were done using Kirby-Bauer disc diffusion method (de Lourdes *et al.*, 1981). Further the MAR Index of the isolates were calculated using the formula  $a/b$  (where  $a$  represents the number of antibiotics the isolate was resistant to,  $b$  represents the total number of antibiotics the isolates were tested against) (Elmanama Abdelraouf *et al.*, 2016). A MAR index value  $\leq 0.2$  is observed when isolates are exhibit high risk (Sevil Toroglu *et al.*, 2014).

## RESULTS AND DISCUSSION

Inoculation onto blood agar gave small grey mucoid colonies surrounded by a zone of beta hemolysis. The organisms isolated gave positive result for catalase test, evident by the presence of efferverscence when added to a drop of hydrogen peroxide.

The antibiogram result of the isolates has been tabulated in Table 1.

S.No.	Sample No.	Antibiotics Used											
		Amikacin	Erythromycin	Gentamycin	Levofloxacin	Imipenem	Piperacillin/Tazobactam	Norfloxacine	Ofloxacin	Ciprofloxacin	Linezolid	Cefoxitin	Vancomycin
1	VS05	S	R	R	S	S	S	S	S	S	S	S	S
2	VS17	S	R	R	S	S	S	S	S	S	S	S	S
3	VS37	R	R	R	S	S	S	S	S	S	S	S	R
4	VS46	S	R	R	S	S	S	S	S	S	S	S	S
5	VS50	S	R	R	S	R	S	S	S	S	S	S	S
6	VS6-	S	R	R	S	S	S	S	S	S	S	S	S
7	VS67	S	R	R	S	S	S	S	S	S	S	S	R
8	VS74	R	R	R	S	S	S	S	R	S	S	S	S
9	VS77	S	R	R	S	S	S	S	S	S	S	S	S
10	VS82	S	R	R	S	S	S	S	S	S	S	S	S
11	VS91	S	R	R	S	S	S	R	S	R	S	S	R

The table shows the antibiogram of the isolates. While the isolates are completely resistant to Erythromycin (100%) and Gentamycin (100%), all of them show sensitivity to Levofloxacin (0%), Piperacillin/ Tazobactam (0%), Linezolid (0%) and Cefoxitin (0%). Only two isolates resisted Amikacin (VS37 and VS 74) (18.18%) and one each was resistant to Imipenem (VS50) (9.09%), Norfloxacin (VS91) (9.09%), Ofloxacin (VS74) (9.09%) and Ciprofloxacin (VS91) (9.09%). All except three isolates were sensitive to Vancomycin (72.72%).

The MAR Index value of all the isolates were  $> 0.2$ , showing they belonged to the low risk range.

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