



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3271148>Available online at: <http://www.iajps.com>

Research Article

**GROUP B STREPTOCOCCAL INFECTIONS AMONGST  
OBSTETRICAL PATIENTS PRESENTING TO LADY  
WILLINGDON HOSPITAL, LAHORE**<sup>1</sup>Dr. Maryam Saleem, <sup>2</sup>Dr. Fizzah Anjum, <sup>3</sup>Dr. Mah Noor<sup>1,2</sup>MBBS; King Edward Medical University, Lahore., <sup>3</sup>MBBS; Fatima Memorial Hospital  
College of Medicine and Dentistry.

Article Received: May 2019

Accepted: June 2019

Published: July 2019

**Abstract:**

**Objective:** This study aims to evaluate the risk factors for group B streptococcal infection and their frequency amongst obstetrical patients during last trimester.

**Methods:** It is a cross sectional, prospective study conducted at Lady Willingdon Hospital, Lahore during October 2015 to March 2016. 200 patients were selected with age group more than 20 years, their lower vaginal swabs were taken. Those taking antibiotics, ruptured membranes, chronic infection or disease and vaginal bleeding were excluded. Swab cultures for GBS (group B streptococci) was performed and frequency of positive swab cultures was noted. SPSS 20 was used for data analysis. Chi square test was applied for association. P value of less than 0.05 was considered significant.

**Results:** All cases had mean age between  $26.3 \pm 4.3$  years and gestational age was  $35.5 \pm 2.6$  weeks. Infection frequency was 14%. There was a strong association between abortions ratio and parity with p value of 0.01 and 0.03 respectively. The association between vaginal discharge and GBS infection had p value of 0.02 which was statistically significant.

**Key words:** Group b streptococcal infection, Vaginal discharge, Last trimester, obstetric.

**Corresponding author:****Dr. Maryam Saleem,**

MBBS; King Edward Medical University, Lahore.

QR code



Please cite this article in press Maryam Saleem et al., **Group B Streptococcal Infections Amongst Obstetrical Patients Presenting To Lady Willingdon Hospital, Lahore.**, Indo Am. J. P. Sci, 2019; 06(07).

**INTRODUCTION:**

Group B streptococci were notorious for causing infections like endometritis, cystitis, premature labor and chorio-amnionitis amongst obstetrical patients. Group B streptococci, (*Strep. agalactiae*) is gram negative facultative anaerobe which exists in form of cocci and form chains. It is facultative anaerobe. In humans it exists as normal gastrointestinal or genitourinary flora. It most commonly cause infection amongst immunocompromised patients which makes it an opportunistic organism. [1] The organism affects pregnant females or newborns or elderly population.

The obstetrical patients affected with GBS can transmit the bacteria to newborns who suffer early or late onset symptoms like floppy, moaning, tachycardia or bradycardia, hypoglycemia or hyperglycemia, poor neonatal reflexes, intolerance to oral feed etc. <sup>4</sup>In case of severe infection, complications like delayed developmental milestones, meningitis, sepsis, pneumonia, or other long term abnormalities can occur.

[2] Disease is called early onset if it occurs during first 6 days of life and late onset disease occurs after 7 days after birth. WHO survey shows GBS infection frequency to be 40% in different populations. [3] There are many factors responsible for change in frequency of infections like maternal age, socio-economic status, parity, previous history of infections, generalised nutritional status of patient.

[6] Early maternal screening for group B streptococci can prevent the neonatal diseases and complications. In developing countries like Pakistan, the antenatal screening for GBS is not in practice and presentation of neonates with early or late onset sepsis is very common. This study aims in determining GBS infection load in Pakistani obstetrics department so that early screening and immunization can be done to prevent neonatal or obstetrical complications associated with it.

Associations between GBS infection and parity was 0.03 and abortions 0.01, vaginal discharge was 0.02.

Table:1. Association between GBS and vaginal discharge.

	Group b streptococci culture positive	Grop B streptococci culture negative	P value
No vaginal discharge	32.1% (9)	54.7% (94)	0.02
Vaginal discharge present	67.9% (19)	45.3% (78)	

**METHODOLOGY:**

This research was conducted at Lady Willingdon Hospital, Lahore following cross sectional, prospective study design. The study duration was from October 2015 to March 2016. There were 200 patients enrolled in this research after taking informed written consent. The no ethical issue certificate was taken from hospital ethical committee. Inclusion criteria was pregnant females with gestational age of  $35.5 \pm 2.6$  weeks and with maternal age above 20 years. The exclusion criteria was those patients suffering from any chronic illness, per vaginal bleeding, ruptured membranes, or those who were taking antibiotics.

Low vaginal swabs were taken from all patients and were cultured for the group B streptococci. The swabs were studied in pathology department within 2 hours after collection. The swabs were taken following standard sterilization method. Blood agar was used for culture and aerobic incubation was done for 24 hours at 37°C. If culture found negative after 24 hours study then 48 hours incubated sample was re-evaluated. The identification point was  $\beta$  hemolytic colonies, catalase test and gram positive staining results. Swabs were taken by a single physician and were tested in a single laboratory to avoid any error. Patients' biodata was collected on a questionnaire.

SPSS 20 was used for data analysis. Chi square test was applied for association. P value of less than 0.05 was considered significant.

**RESULTS:**

The mean age of patients was between 17 to 38 years with median age of  $26.3 \pm 4.3$  years. 48.5% patients gave history of vaginal discharge i.e. 97 out of 200. Previous stillbirth history was positive in six patients i.e 3%, past neonatal sepsis history in 0.5% cases, recurrent abortions history in 1.5% patients was positive. Frequency of GBS was 14% i.e 28 cases.

Table:2. Association between biological data and past history with GBS infection and its statistical significance.

	GBS culture negative	GBS culture positive	P value
Age			
Less than 20 years	2.3% (4)	7.1%(2)	0.346
21 to 30 years	70.9% (122)	71.4%(20)	
31 to 40 years	26.7% (46)	21.4%(6)	
Parity			
0	39.5% (680)	46.4%(13)	0.033
1	22.1% (38)	35.7%(10)	
2	20.9% (36)	3.6%(1)	
3	9.3%(16)	3.6%(1)	
4	2.9%(5)	10.7%(3)	
5 or more	5.2%(9)	0	
Gestational age			
30 to 35 weeks	44.8%(77)	39.3%(11)	0.77
35 to 40 weeks	50.6%(87)	53.3%(15)	
More than 40 weeks	4.7%(8)	7.1%(2)	
Past obstetrical history			
Abortions	1.7%(3)	10.7%(3)	0.01
Still births	3.7%(6)	0	0.31

### DISCUSSION:

In the understudy topic the frequency of GBS in pregnant females was found to be 14 percent during third trimester. There are many research studies conducted on this topic the association with different risk factors have been evaluated. [7] Different authors use different detection techniques and different laboratory conditions are used which can cause variation in results.

In the recent study there is no statistically significant association found between age, socio-economic status and gestational age. But there is statistically significant association between vaginal discharge, previous abortions history and parity of patients. Similar results have been found out in other studies as well.

[8] Darabi R, et al in a research study published in 2017 elaborated that 11.8% patients had GBS infection and no statistically significant association with age, socioeconomic status and maternal health was noticed. [9] Santhanam S, et al studied the GBS prevalence amongst pregnant women by using different culture media in India in 2017, results of his research were; on blood agar 2.6% were positive for GBS out of 305 while 7.6% was positivity rate on enriched media. <sup>10</sup>Russell NJ, et al studied the GBS frequency amongst pregnant women and early neonatal infections.

The purpose of this study is to find out the risk factors responsible of GBS infection during last trimester so that neonatal sepsis and other

complications as a result of vertical transmission can be reduced. In this way neonatal mortality can be reduced. The research also aims in bringing into notice the need for introducing antenatal GBS screening and its timely diagnosis and cure to prevent serious complications in mother and neonate.

### CONCLUSION:

14% patients had GBS infection and there is significant association between abortions history, vaginal discharge and parity.

### REFERENCES:

1. Sigauque B, Kobayashi M, Vubil D, Nhacolo A, Chauque A, Moaine B, et al. Invasive bacterial disease trends and characterization of group B streptococcal isolates among young infants in Southern Mozambique, 2001-2015. *PLOS ONE* 2018.
2. Jauneikaite E, Kapatai G, Davies F, Gozar I, Coelho J, Bamford KB, et al. serial clustering of late onset group B streptococcal infections in the neonatal unit- a genomic re-evaluation of causality. *Clinical Infectious Diseases* 2018; 174.
3. Emameini, Mohammad, Jabalameli, Fereshteh, Leeuwen V, willem B, et al. Prevalence of group B streptococcus in pregnant women in iran: a systemic review and meta-analysis. *The Paediatric Infectious Disease Journal*. 2018; 37(2): 186-190.
4. Stafford IA, Rodrigue E, Berra A, Adams W, Heard AJ, Hagan JL, et al. The strong correlation between neonatal early onset group b

- streptococcal disease and necrotizing enterocolitis. *European Journal of Obstetrics and Gynecology and reproductive Biology* 2018; 223: 93-97.
5. Sabaini de Mailo SCC, Costa AB, Ribeiro da Silva FT, et al. Prevalence of streptococcal agalactiae colonization in pregnant women from the 18<sup>th</sup> health region of Parana State. *Revista Do Instituto de Medicina Topical de Sao Paulo* 2018
  6. Vekemans J, Moorthy V, Friede M, Alderson MR, Meulen AS, Baker CJ, et al. Maternal immunization against group B streptococcus: World Health Organization research and development technologist roadmap and preferred products characteristics. *Vaccine* 2018.
  7. Curry A, Bookless G, Donaldson K, Knowles SJ. Evaluation of hibergene loop mediated isothermal amplification assay for detection of group B streptococcus in recto-vaginal swabs: a prospective diagnostic accuracy study. *Clinical Microbiology and Infection* 2018.
  8. Darabi R, Tadi S, Mohit M, Sadeghi E, Hatemizadeh G, Kardeh B, et al. The prevalence and risk factors for group B streptococcal colonization in Iranian pregnant women. *Electronic Physician* 2017;9(5): 4399-4409.
  9. Santhanam S, Jose R, Sahni RD, Thomas N, et al. Prevalence of group B streptococcal colonization in pregnant women and neonates in a tertiary care hospital in India. *Turkish German Gynecological Association* 2017; 18(4): 181-184.
  10. Russell NJ, Seale AC, O'Sullivan C, et al. Risk of early onset group B streptococcal disease with maternal colonization worldwide: systematic review and meta-analysis. *Clinical Infectious Diseases* 2017;65(2): 152-159.