

**ROLE OF VAGINAL CYTOLOGY IN WOMEN WITH PRETERM LABOUR: A DESCRIPTIVE STUDY**Shwetha<sup>1</sup>, Deepthi H. R<sup>2</sup>, Lalitha Shivanna<sup>3</sup>, Ravi Kumar M. S<sup>4</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT OBJECTIVE:** To assess the role of lower genital tract infections in preterm labour by studying the vaginal cytology among the women who got admitted with complaints of preterm labour. **INTRODUCTION:** Preterm delivery remains a leading cause of perinatal morbidity and mortality.<sup>1</sup> Preterm labour is defined as one where the labour starts before 37<sup>th</sup> completed week of gestation counting from the first day of the last menstrual period. Vaginal infection during pregnancy leads to premature rupture of membrane and preterm labour leading to low birth weight and thus in turn causes increase in perinatal mortality.<sup>2</sup> Among the various maternal and fetal factors, vaginal infections during pregnancy is important cause for preterm labour.<sup>3</sup> Studies have found a high prevalence of reproductive tract infections during pregnancy.<sup>4</sup> Tolosa et al. reported a 24.4% prevalence of reproductive tract infections among pregnant women.<sup>5</sup> 90% of reproductive tract infections were caused by *Candida albicans*, bacterial vaginosis, and *Trichomonas vaginalis*.<sup>6</sup> This study is done to determine the association between preterm labour and lower genital tract infections among the women who came with history of threatened preterm labour to MIMS from August 2013 to February 2014. **METHODOLOGY: TYPE OF STUDY:** Record based analytical study. **STUDY SETTING:** Mandya Institute of Medical Sciences, Mandya. **SAMPLE SIZE:** All records of patients admitted for preterm labour from August 2013 to February 2014. **DATA COLLECTION:** The data of all the patients admitted with complaints of preterm labour from August 2013 to February 2014 was collected from the records available at MIMS, Mandya after taking ethical clearance from the institutional ethical committee. **RESULTS:** The average age of mothers was 23.17 and the mean age was 23.17 ± 3.9 years. Among 147 mothers, 115(84.4%) mothers crossed 28 weeks of gestation and 23(15.6%) mothers presented before 28 weeks. Among 147 mothers 40(27.2%) of the cytology report came out to be positive for clue cells and 107(72.8%) were negative for clue cells and 29(19.7%) were positive for presence of yeast cells and 118(80.3%) were negative for presence of yeast cells and 40(27.2%) vaginal smears were positive for both clue cells and inflammatory cell. **KEYWORDS:** Pre-term labour, vaginal cytology, lower genital tract infections.

**INTRODUCTION:** Preterm labour is defined as one where the labour starts before 37<sup>th</sup> completed week of gestation counting from the first day of the last menstrual period. Preterm birth occurs in 5% to 10% of all pregnancies and is the most common cause of perinatal morbidity and mortality in the world. Moreover, preterm birth is implicated in at least two-thirds of early infant deaths and causes 60% of perinatal mortality and nearly half of long-term neurologic disability, including cerebral palsy, and is associated with admission to neonatal intensive care, severe morbidity in the first weeks of life, prolonged hospital stay after birth.

Vaginal infection during pregnancy leads to premature rupture of membrane and preterm labour leading to low birth weight and thus in turn causes increase in perinatal mortality.<sup>5</sup>

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Reproductive tract infections are one of the most serious public health issues in both developed and developing countries. Around 150,000,000 cases of reproductive tract infections in Southeast Asia and 65,000,000 cases in African countries occur annually.<sup>2</sup> Many of the women who visit ambulatory care facilities suffer from vaginal infections. Studies have found a high prevalence of reproductive tract infections.

Tolosa et al. reported a 24.4% prevalence of reproductive tract infections among pregnant women.<sup>3</sup> Several hormonal changes are produced during pregnancy that can increasingly predispose to infections of the lower genital tract. These infections are associated with a great number of gynecologic and obstetric complications, such as preterm birth, premature rupture of the membrane, chorioamnionitis, postpartum endometritis, inflammatory pelvic disease, intrauterine growth.<sup>4</sup>

Among the various maternal and fetal factors, vaginal infections during pregnancy is important cause for preterm labour.<sup>6</sup> Increased risk of adverse pregnancy outcome include young (<17 years) and advanced (>35 years) maternal age, low socioeconomic status, black race, single marital status, low weight prior to pregnancy, a history of adverse pregnancy outcome, three or more abortions, antepartum hemorrhage, history of previous sexually transmitted diseases, antenatal urinary tract infection, cigarette smoking during pregnancy, fetal gender, and multiple gestation.<sup>7</sup>

**RESULTS:** Demographic data. Most of the mothers belonged to low socio economic status (82%).

Mean age of the mothers	23.17 ± 3.9 years (19-25 years)
Mothers who are in this age group	78.2 %

Table 1: Maternal age

Primigravida	71 (48.3%)
2 <sup>nd</sup> gravida	02 (32.6%)
3 <sup>rd</sup> gravida	03 (11.6%)
Multigravida	09 (7.3%)

Table 2: Gravida score among the admitted mothers

More than 28 completed weeks	115 (84.4%)
Less than 28 completed weeks	23 (15.6%)

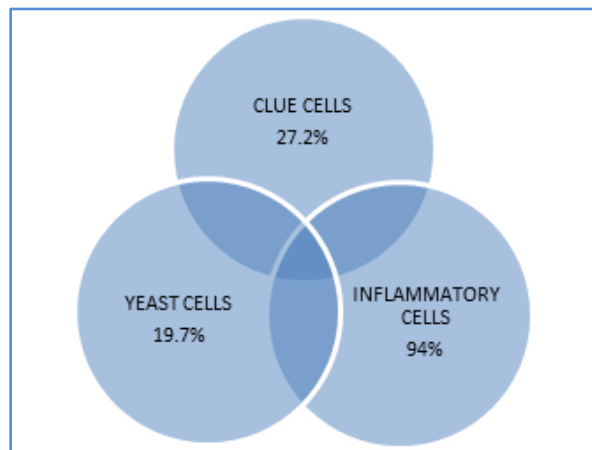
Table 3: Period of gestation

The average age of mothers who came with history of preterm labour was 23.17 and the mean age was 23.17 ± 3.9 years and most of the mothers belonged to age group between 19 to 25 years (78.2%). Among 147 mothers who came with history of preterm labour most of them were primigravida 71(48.3%), followed by gravida 2(32.6%), gravida 3(11.6%), gravid 4(6.1%) and gravid 5 (1.2%) respectively. Among 147 mothers, total of 115(84.4%) mothers crossed 28 weeks of gestation and 23(15.6%) mothers presented before 28 weeks of gestation.

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Clinical examination of the vagina was done using asims speculum and a vaginal swab was taken for cytology.

**MICROBIOLOGICAL DATA:** Among 147 mothers on whom vaginal cytology was carried out, a total of 138 (94%) vaginal cytology report came out to be positive for presence of inflammatory cells and only about 9 (6%) of vaginal cytology report came out to be negative for inflammatory cells. Among 147 mothers 40 (27.2%) of the cytology report came out to be positive for clue cells and 107 (72.8%) were negative for clue cells and 29(19.7%) were positive for presence of yeast cells and 118(80.3%) were negative for presence of yeast cells and 40(27.2%) vaginal smears were positive for both clue cells and inflammatory cell.



**DISCUSSION:** The current study revealed presence of lower genital tract infections in about 94 % of symptomatic women. Among them 27.2% had bacterial vaginosis as proved by the presence of clue cells and 19.7 % had candidiasis as proved by presence of yeast cells? 27.2% of the women showed mixed bacterial flora.

The present study illustrates that there is a statistical association between lower genital tract infections and preterm labour. Such infection results in a pathogenic state characterized by loss of normal vaginal flora, particularly *Lactobacillus* species and overgrowth of opportunist micro be such as *Gardnerella vaginalis*.<sup>8</sup> It is thought that the micro-organisms associated with produce proteases that break down collagen and stimulate phospholipase A2 production resulting in preterm labour.

**CONCLUSION:** The high prevalence of lower genital tract infections among symptomatic pregnant women and the resultant adverse pregnancy complication of preterm labour in these study emphasizes the need for screening for lower genital tract infections at the initial clinical visit especially in the high risk women. Integrating a simple infection screening and treatment program into routine antenatal care may reduce preterm births even in a general population of pregnant women.

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