Editorial

Bacterial Vaginosis - Adverse Obstetric Outcome

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Bacterial Vaginosis (BV) in pregnancy is receiving extensive attention, as several studies have found an association of BV with preterm labour (PTL), premature rupture of membranes (PROM), postpartum endometritis and low birth weight in newborn. It is found in 15 to 25 percent of pregnant women with upto 50% of women being asymptomatic. Depending on population studies, prevelance of BV was 10 to 40 percent of pregnant women in United States and 12 percent in U.K. No figures are available for India.

BV is a condition in which there is a paucity of the normal vaginal Lactobacilli and an overgrowth of anaerobic species that produce protease, collagenase and phospholipase A2. It is associated with multiple organisms besides Gardnerella Vaginalis and Haemophilus Vaginalis. These include Mobiluncus Spp, Bacteroids Spp, Peptostreptococcus Spp and Mycoplasms Hominis. The diagnosis of BV is based on the following criterias. Homogeneous, thin watery vaginal discharge which may include bubbles, Vaginal PH greater than 4.5, the presence of 'clue cells' which are vaginal epithelial cells whose borders are obscured by numerous attached bacteria, a fishy odour on addition of 10 percent potassium hydroxide to the vaginal discharge and the absence of Lactobacilli and identification of Mobiluncus, Morphotypes on mircoscopy of wet mount preparation.

Laboratory methods for the diagnosis of BV are culture of Gardnerella Vaginalis, direct gram stain of vaginal secretions and biochemical tests such as, gas liquid chromatography and proline aminopeptidase test for metabolic by-products of anaerobic vaginal bacteria. However, the advantage of clinical criterias compared with more complicated Laboratory diagnostic tests is the rapidity and cost-effectiveness.

Adverse pregnancy outcome linked to BV are preterm labour, PROM and Post caesarean puerperal endometritis. Preterm labour complicates 8-10 percent of births in United States and is a leading cause of neonatal morbidity and mortalitty. In rural India incidence of preterm labour and Low birth weight babies is very high; about 15 to 25 percent of births. During the past three decades, many studies have suggested that PTL and PROM have been linked with an ascending vaginal infection. The most commonly associated organisms found were those causing BV. The clinical studies have also consistently demonstrated a 2 to 3 fold increase of PTL, when BV is present. Isolating micro-organisms commonly associated with BV by amniocentesis of pregnant women with intact membranes and placental culture in PTL showed the linkage of BV and PTL.

The biochemical mechanisms linking BV with PTL and PROM are incompletely understood. However, three possible mechanisms are suggested by which bacteria may induce PTL or PROM.

1. Microorganism - Endotoxins - activation of phospholipase A2 - formation of arachidonic acid.
2. Microorganisms directly liberate Phospholipase A2.
3. Microorganisms liberate protease & penetrates cervical mucus plug to cause membrane disruption - PROM - phospholipase A2 activation.

The ultimate mechanism involves the activation of

phospholipase A2 which leads to conversion of arachidonic acid to prostaglandins or leukotrienes which initiate uterine contractions and decreases cervical resistance.

The studies linking treatment of the condition with improved pregnancy outcome suggest that treatment should be prescribed for BV, when it is diagnosed. The recommended treatment is oral metronidazole 500 mg twice daily for 7 days. We now know there is no teratogenic effect from this drug. However, the larger problem is gastrointestinal disturbances. Vaginal metronidazole for 5 days regime gives 78% cure rate. Oral and intravaginal clindamycin are as effective as oral metronidazole against BV. Clindamycin 300mg twice a day for 7 days or intravaginal 2% clindamycin cream, used once a day in 5 gm dose has a cure rate of 94%.

It is recommended that given the definite association of BV with PTL, and PROM, clinical screening of all high risk pregnant women and treating them is indicated Though this will not prevent all preterm births, but at le: reduce some. The diagnostic simple clinical criterias and effective low-cost treatment is available. This will help in reducing perinatal mortality and improve obstetric outcome.

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