INTRODUCTION

Premature rupture of membranes (PROM) is the rupture of the fetal membranes before the onset of labor. In most cases, this occurs near term, but when membrane rupture occurs before 37 weeks' gestation it is known as preterm premature rupture of membranes. PPROM, and complicates approximately 3 percent of pregnancies and is the cause of approximately one third of preterm births ***(Medina and Hill,2006).***

There are numerous risk factors associated with preterm (PROM) that include black race, lower socioeconomic status, smokers, positive history of sexually transmitted infections, previous preterm delivery, vaginal bleeding, and uterine overdistension ***(ACOG ,1998)***.

Procedures that may result in PPROM include vaginal cerclage and amniocentesis.It appears to be no single etiology of PPROM ***(Bendon et al., 1999).*** Choriodecidual infection or inflammation may cause PPROM. A decrease in the collagen content of the membranes has been suggested to predispose patients to

PPROM ***(Stuart et al.,2005).***

When PROM occurs too early,fetus may develop sequelae such as malpresentation, cord compression and oligohydramnios. Surviving neonates may develop necrotizing enterocolitis, neurologic impairment, intraventricular hemorrhage, and respiratory distress syndrome ***(Mercer ,2003)***.

The diagnosis of PPROM is made by history and physical findings consisting of direct visualization of pooling of amniotic fluid in the vaginal fornices, with confirmation by the fern and nitrazine tests. Unfortunately, these simple tests are fraught with both false-positive and false-negative results caused by various factors that can result in an equivocal or delayed diagnosis ***(Caughey et al.,2008*)**.

Recognizing these potential limitations, several vaginal fluid biochemical markers have been evaluated for the detection of PPROM. The primary goal in discovering an accurate adjunctive test would be to aid in the rapid diagnosis in equivocal cases of PPROM, thus enabling the clinician to initiate preventative therapies or prevent unnecessary hospitalizations

(Cooper et al .,2004).

Among the markers evaluated were vaginal diamnio-oxydase, prolactin and alpha-fetoprotein (AFP) that were studied by ***Gaucherand et al., (1995),*** who found that these are not useful markers for PROM because of the overlap in concentrations between women with and without ruptured membranes .Fetal fibronectin has been evaluated by **Eriksen et al.,1992** and prove that the chronic release of fetal fibronectin preceding delivery in patients with intact membranes may also lead to false-positive results.

Lockwood et al., (1994), evaluated insulin-like growth factor-binding protein-1,but was not useful test because IGFBP-1 has low sensitivity of 74.4% and negative predictive value of 55.6%**.**

The beta subunit of human chorionic gonadotropin (B-hCG) has been evaluated as a possible predictor of preterm delivery and as a marker for PPROM ***(Bernstein et al.,1998)***.

Human chorionicgonadotropin is produced by trophoblastic tissue, It is present in varying degrees in

serum,urine, amniotic fluid and vaginal discharge during pregnancy. ***Anai et al., (1997),*** have established quantitative ranges and thresholds of hCG concentrations in cervicovaginal discharge in pregnant women with and without ruptured membranes during each trimester. and evaluated measuremenet of hCG level in vaginal fluid as a method of diagnosis of PROM.

Unfortunately, quantitative hCG as a marker for PPROM is both costly and time consuming which limits its use.On the contrary qualitative hCG testing in the cervicovaginal fluid is a simple, rapid and bed side test that can aid in the detection of PPROM ***(Cooper et al., 2004).***

Beesley et al., (2008) repoted that both qualitative and quantitative β-hCG testing of cervicovaginal fluid are of low value because of possibility of microscopic contamination of the sample by urine or blood during sample collection.