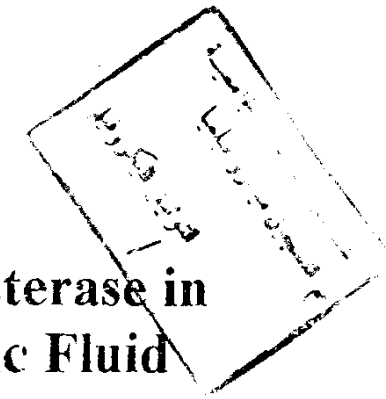
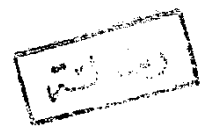


The Value of Leukocyte Esterase in the Prediction of Amniotic Fluid Culture Results in Preterm Premature Rupture of Membranes

A Thesis Submitted in Partial Fulfillment of Master Degree in Obstetrics and Gynecology



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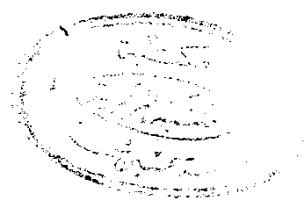

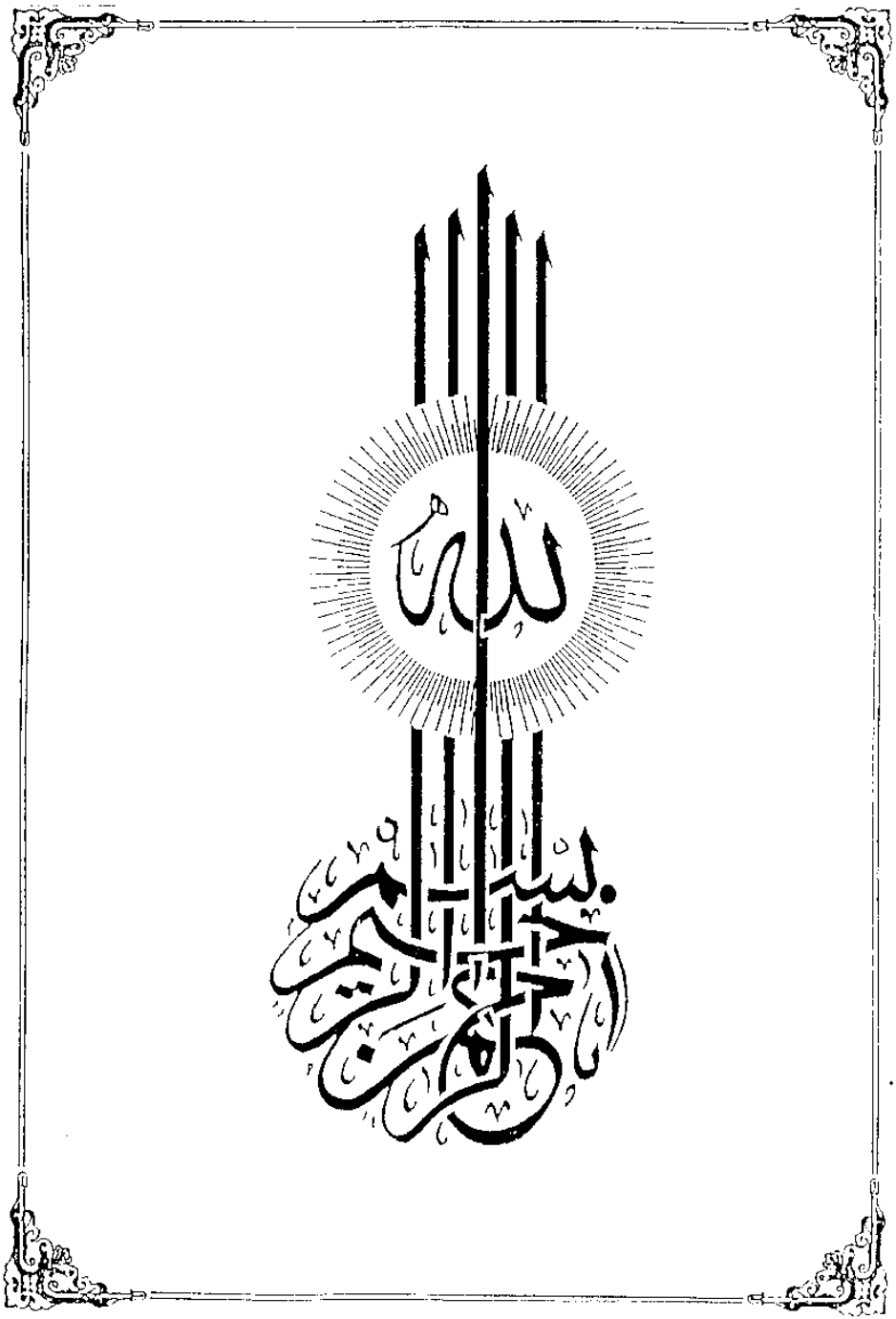

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وقل اعملوا فسيرى الله عملكم ورسوله والمؤمنون

صدق الله العظيم

سورة التوبة - آية ١٠٥

TO MY PARENTS

MY WIFE

AND

MY SON

ACKNOWLEDGMENT

First of all, thanks to God.

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INTRODUCTION

Premature rupture of the membranes (PROM) is a significant obstetric problem. It is responsible for approximately 30% of all preterm deliveries *(Arias and Temich, 1982)*, and causes important maternal morbidity. Unfortunately, advances in the understanding of the etiology, pathogenesis, management and prevention of PROM have been relatively few.

From the clinician's point of view, preterm premature rupture of membranes is a clinical dilemma because the dangers of preterm delivery must be weighed against the risk of maternal and fetal or neonatal sepsis. Also because complications of prematurity rather than sepsis are the main sources of perinatal morbidity and mortality, as well as the general agreement that prompt delivery is indicated if these patients have clinical amnionitis, conservation and screening for early detection of infection is the best management to improve the perinatal outcome *(Vintzileos et al., 1991)*.

In diagnosing PROM, the history and physical examination alone are often inadequate to confirm the status of the membranes. Fluid may not be present in the vagina for evaluation. Furthermore, at times, fluid may be contaminated with urine, cervical mucus, bath water, vaginal discharge, blood, or meconium. Because of these difficulties, multiple cytological, biochemical, colorimetric and sonographic methods have been developed for the detection of

ruptured membranes. Despite significant advances in technology, no one test has been found to be completely accurate and diagnosis still requires an integration of historic factors, physical examination and laboratory testing.

To assess the microbial state of the amniotic fluid cavity accurately, the method of amniotic fluid collection is critical. The two methods generally used are transabdominal amniocentesis, and transcervical retrieval. The latter is associated with an unacceptable risk of contamination with the vaginal flora, so not useful when analyzing the prevalence of microbial invasion of the amniotic cavity in cases of PROM. Recent data have also shown a success rate in amniocentesis with PROM reaching up to 92-96% compared to the 45-70% success rate previously *(Vintzileos et al., 1986; Goldstein et al., 1988).*

Several investigators used amniocentesis in the detection of microbial invasion of the amniotic fluid in PROM. For example, the use of amniotic fluid cultures and gram staining, amniotic fluid leukocytic count and glucose level, detection of bacterial endotoxins, leuko-attractants as well as leukocyte esterase activity *(Garite et al., 1979).*

Although amniotic fluid cultures are very sensitive, especially when we compare maternal and neonatal infectious complications in PROM in patients with positive and those with negative culture results, it is tedious, time consuming and the patient may even pass into premature