Pneumocystis Carinii Infections with Special Emphasis on PCR Technique in the Early Diagnosis

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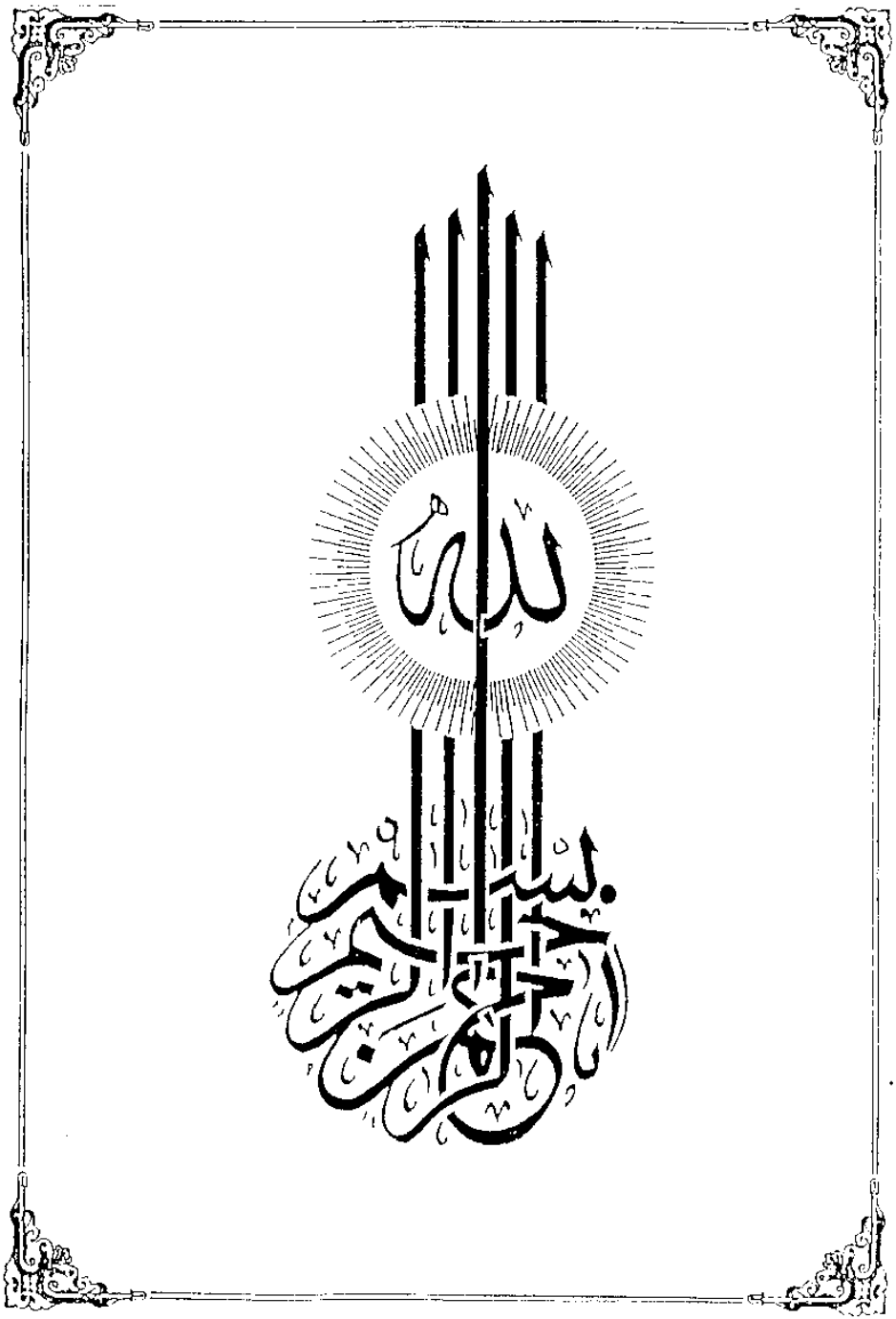

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INTRODUCTION

Pneumocystis carinii is a major opportunistic infectious agent in immunocompromised patients causing several diseases as Pneumonia which has a high mortality rate if the patient is not properly treated. Therefore, timely diagnosis of Pneumocystis carinii is critical for patient management. **[Tang et al., 1997].**

The incidence of Pneumocystis carinii pneumoniae (P.C.P) has sharply increased since the emergence of AIDS in the early 1980s and early diagnosis of P.C.P. may lower morbidity and mortality. **[Bartlett and Smith, 1991].**

Samples from the respiratory tract are the main - stay for laboratory diagnosis of P.C.P. As Pneumocystis carinii orgnisms can not yet be successfully cultured from human specimens, microbiological confirmation of P.C.P. is based on morphological detection of the organisms by using different staining techniques such as : Grocott-Gomori silver & Toluidine blue O. stains. **[Blumenfeld et al, 1992].**

Immunofluorescence assays utilizing either monoclonal or polyclonal antibodies specific for the trophozoite and/or the cyst stage of Pneumocystis

carinii have been developed **[Armbruster et al., 1995].**

However, all these conventional methods face the obstacle of low sensitivity as they require highly experienced personnel and good specimens. Only material obtained through invasive procedures, such as bronchoalveolar lavage, is considered appropriate for these methods. **[Leight et al., 1992].**

Polymerase chain reaction which amplify various regions of the *Pneumocystis carinii* genome have been studied as an alternative method for detection of Pneumocystis carinii **[Tang et al, 1997].**

Polymerase chain reaction for detection of *Pneumocystis carinii* in bronchoalveolar lavage spcimens is very sensitive and should be considered for patients whose specimens do not yield a diagnosis. The increased sensitivty of the PCR assay may help to identify those patients with low titre infections who might benefit from antibiotic therapy for *Pneumocystis carinii* and would other wise be missed by direct examintion alone. **[Ribes, et al., 1997].**

Aim of this study:

The aim of this study is to spot lights on diseases caused by *Pneumocystis carinii* and their diagnosis with special emphasis on the early diagnosis by PCR.