THE PREVALENCE OF FUNGAL INFECTION IN RESISTANT CORNEAL ULCER

THESIS

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BY

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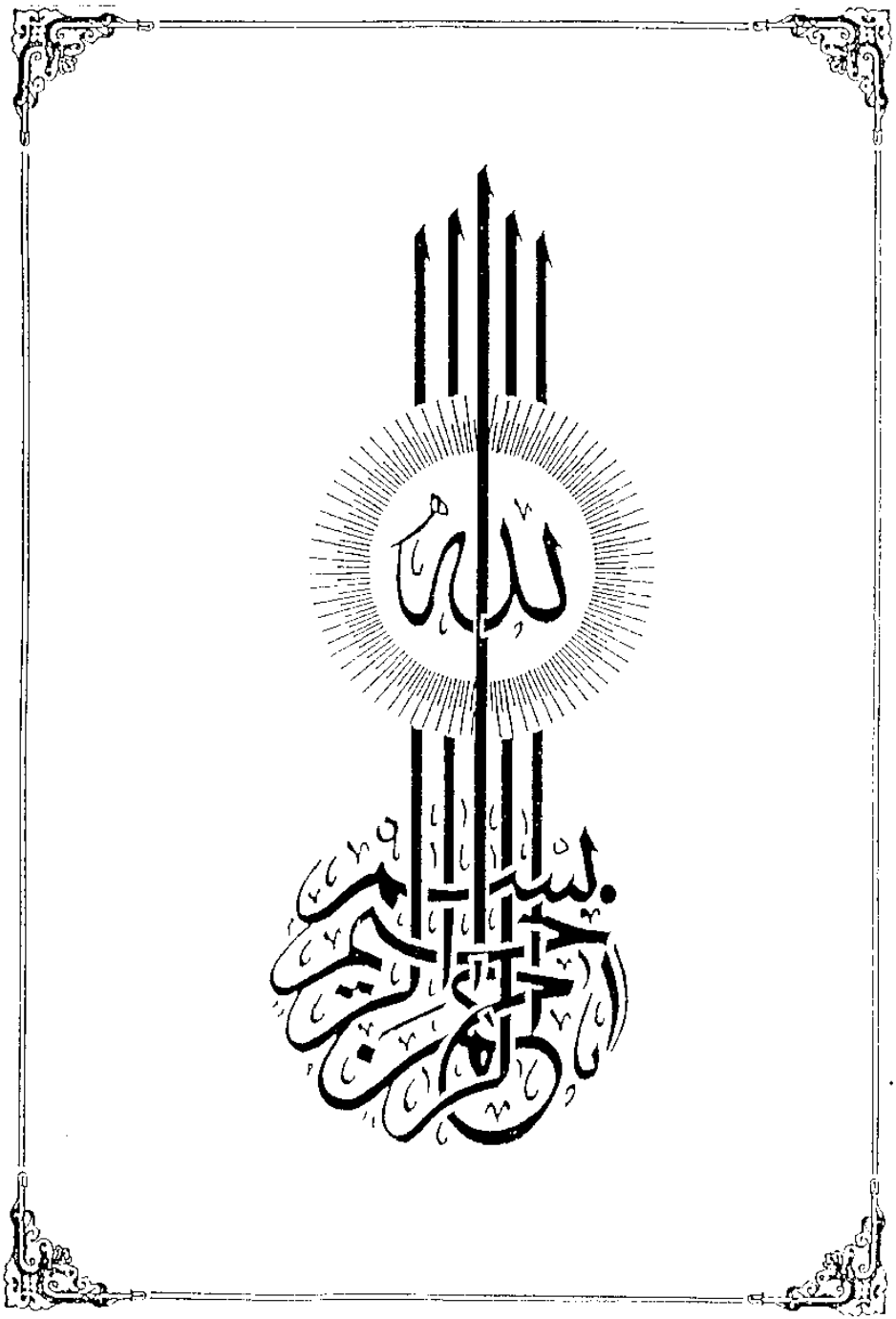

بسم الله الرحمن الرحيم

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Adel Regaila

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INTRODUCTION

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Ulcerative keratitis, often microbial in origin, is a sight threatening condition. If diagnosis and initiation of appropriate antimicrobial chemotherapy are delayed till the appearance of the full-blown picture, then it has been estimated that only 50% of eyes will heal with good visual outcome. It is universally recognized that rapid and unequivocal identification of the causative organism is a prerequisite for provision of adequate antimicrobial therapy ***(Bennett et al., 1998).***

Corneal ulcers represent a major cause of monocular blindness in developing countries. Corneal scarring is second only to cataract as a cause of blindness and visual disability in many of the developing nations in Asia, Africa, and the Middle East ***(Srinvasan et al., 1997).***

Gonzales et al. (1996), reported that 44% of all corneal ulcers are caused by fungi. The severity of these infections and the poor response to treatment of most fungal ulcers means that these eyes are invariably blinded or lost.

Keratomycosis is a disease caused by fungal invasion of the corneal stroma. The insult is usually a minor trauma but is occasionally due to other diseases that damage the epithelium. Although the fungal species causing keratomycosis are extremely diverse, the clinical picture is similar regardless of the species. More than 60 species of fungi cause keratomycosis. Because many of these fungi are also laboratory contaminants, diagnostic laboratory

workers in mycotic keratitis cases must always consider the possibility that an "unimportant contaminant" might be an etiologic agent***(Kown-Chung & Bennett, 1992).***

Some of the predisposing factors that damage the corneal epithelium are viral infection, such as Herpes simplex, that becomes secondarily infected by fungi. Corticosteroids and antibiotics are frequently used before an established diagnosis of fungal infection is made and they may even enhance its development ***(Leisgang, 1988).***

Corneal perforation and loss of the eye are the outcome if keratomycosis is not treated. The peri-ocular tissues generally are not involved, but the blind eye requires enucleation because of pain ***(Kown-Chung & Bennett, 1992).***

Within the various parts of the world the predominating fungi causing keratomycosis tend to differ. *Fusarium solani* has been shown to be the predominating filamentous fungus in South Florida. on the other hand, *Aspergillus* was more frequently listed as the cause of keratomycosis than any other fungus ***(Leisgang and Forester,1980; Rosa et al., 1994).***

Despite the widespread distribution of fungi they infrequently cause ocular infections. It appears that certain triggering events must take place for infection to arise ***(Kolodner, 1984).***

In cold climates triggering events may manifest in the dry eye syndrome, in extensive corneal ulceration, and in contact lens wearers ***(Wilhelmus et al.,1988).***

In southern and tropical areas a mild trauma caused by a vegetable substance triggers the infection ***(Srinvasan et al., 1991).***

With the technical advances in medicine and surgery during the last decades; as well as the emergence of Acquired Immune Deficiency Syndrome; fungal infections have increased dramatically, those involving the eye pose a serious problem. Preserving visual function depends in part on rapid diagnosis and prompt initiation of effective treatment, both of which can be difficult ***(Saag and Dismukes, 1988).***

Optimum management for preservation of vision requires early diagnosis and institution of fungal therapy. Although the history and clinical appearance may suggest keratomycosis, often the diagnosis can be made only by examination of scrapings or a biopsy specimen from the affected cornea ***(Kaufman and Wood, 1965).***

Cultures require a minimum of 48 to 72 hours for diagnosis. Current staining methods are either insensitive as in Gram and Giemsa stains or tedious to perform and difficult to interpret without considerable experience as Grocott's methenamine silver ***(O'day et al., 1979).***