Introduction
1. INTRODUCTION

Cryptococcosis, a systemic mycosis, occurs most frequently in immunocompromised hosts, especially persons with human immunodeficiency virus (HIV) infection or acquired immunodeficiency syndrome (AIDS) and other disorders or conditions associated with T-cell dysfunction such as lymphoreticular malignancies or organ transplantation or corticosteroid therapy. In 20 to 30% of cases of cryptococcosis, the patient has no apparent underlying condition or predisposing factor. Infection is acquired via inhalation of spores of Cryptococcus neoformans, a yeast-like round or oval fungus that is found primarily in the soil and other environmental sources and is distributed throughout the world. Cryptococcal disease most commonly involves the lungs and the central nervous system (CNS). Less frequently involved organs are the skin, skeletal system and prostate gland (Dismukes, 1993).

Sporadic causes of this disease are seen throughout the world, but recent pandemic of AIDS has been the precipitating cause for the increased incidence of cryptococcosis. Ajello (1970) considered this fungal disease as the "sleeping disease" hidden in the medical mycology iceberg and it has been also termed as "awakening giant" among the mycosis (Kaufman and Blumer, 1977). In Europe, it is known as the "signal disease" (malade signal), as it signals an underlying debilitating disease (Rippon, 1988). Drouhet and Dupont (1990) described this as the "mycosis of future".
In the United States, at least 50% of the total cryptococcosis cases reported annually are from AIDS patients, ranking it as the fourth most life-threatening infection in these individuals (Kwon-chung et al., 1992a). Cryptococcosis was the first diagnosable opportunistic infection in nearly one-third of AIDS patients (Kovacs et al., 1985) and is usually associated with profound immunodeficiency with the CD4 cell count almost invariably <100 cells/mm$^3$ (Crowe et al., 1991). Moreover, the morbidity, mortality, and frequency of relapse are higher in patients with AIDS (Powderly, 1993).

Among the infectious agents causing neurological disease in patients with AIDS, C. neoformans ranks third in frequency behind the HIV and Toxoplasma gondii (Gabuzda and Hirsch, 1987). Estimates of the prevalence of CNS manifestations of cryptococcosis in AIDS patients have ranged from 65 to 90% (Simberkof et al. and Zuger, 1989).

Furthermore, cryptococcosis in patients with AIDS differs markedly in several features from cryptococcosis in patients without AIDS. For instance, cryptococcal meningitis in patients without AIDS is typically a chronic, slowly progressive infection whereas in the case of AIDS, it may be an acute and rapidly progressive disease and symptoms are often vague or non-specific. Moreover, the usual diagnosis of cryptococcosis may not apply in cases of patients with AIDS (Mani and Rajendran, 1995).

Numerous reports on the epidemiology, clinical spectrum and characterisation of C. neoformans are available from developed countries. However, in India, though isolated cases of cryptococcosis have been reported...
from different centres, many cases are under reported. Moreover the detailed analysis of clinical presentation, predisposing factors, value of laboratory tests and the outcome of this disease in India is lacking (Chakrabarti et al., 1995). It is rather speculative to simulate the western picture of cryptococcosis with that of India. Kozel (1995) stated that, the incidence of cryptococcosis in AIDS patients in developing countries is much higher than that reported in developed countries. Although the number of AIDS cases increases in India, very little information is available about the opportunistic infections. Despite the availability of enormous literature on cryptococcosis around the world, the exact epidemiology of cryptococcosis in AIDS patients in India is still uncertain. Moreover, very few studies on characterisation of C. neoformans have been carried out in India, especially on the environmental strains. Hence, this research work was aimed at obtaining some relevant information on the above said factors and to augment the existing literature on cryptococcosis and C. neoformans in India.