1- INTRODUCTION

Introduction

Tuberculosis is a disease of great antiquity. Characteristic changes have been found in remains of ancient skeletons, indicating that humans were affected with the disease in the Neolithic period some 4000 years B.C and that it was a common disease in Egypt around 1000 B.C. In early writings it was called consumption because of its tendency to produce great wasting in its victims and in Greek literature the word phthisis was used . These two terms were augmented in the early nine- teenth century by the name tuberculosis which arose largely from descriptions of the morbid anatomy. Tuber culosis eventually acquired a specific meaning with the discovery of the tubercle bacillus by Koch in 1882. *(Baum and Wolinsky, 1989).*

The World Health Organization Tuberculosis Unit undertook a special study in 1989/90 to determine the nature and magnitude of the global tuberculosis problem. It was found that about 1,700 million people or one third of the world population have been infected with M.tuberculosis . More than 3 million people are dually infected with the tubercle bacillus and HIV in the world, 2.4 million in Sub-Saharan Africa alone. It was estimated that , in 1990, there were 8 million new cases of tuberculosis highest incidence was in the African region (272 cases per 100,000). Tuberculosis caused 2.9 million deaths in 1990

making this disease the largest cause of death from a single pathogen in the world. *(Kochi,1991).*

In Egypt, through the different tuberculin surveys held in various places, the annual risk of infection (ARI) is estimated to be around 0.7%. From the ARI it can be estimated that about 35-42 new cases of smear positive pulmonary tuberculosis were expected to arise per 100,000 inhabitants in 1987. With a population of 52 million, this corresponds to about 18,000- 22,000 smear positive pulmonary tuberculosis per year (and about 20,000 smear negative pulmonary tuberculosis and extrapulmonary tuberculosis cases) all over the country. *(NTP- Guide, 1994)*

To establish the diagnosis of pulmonary tuberculosis the following procedures are put in the order of their importance; bacteriological investigation, radiological examination of the chest, tuberculin test and biopsy of tissues *(Pagel et al., 1964).*

A positive tuberculin test can not differentiate between active and inactive tuberculous infection *(Hinshow and Murray, 1980).*

The roentgenographic appearance of tuberculous lesion is not pathognomonic and many other diseases can produce similar changes *(Lian, 1984).*

The conventional smear examination has been very useful, it is insensitive requiring a minimum of about 10,000 organisms/ml for detectability and does not differentiate pathogenic from contaminant mycobacteria *(Bates, 1979)*.

Cultural identification is more sensitive and definitive than direct smear but requires 6-8 weeks. Furthermore in paucibacillary situations such as non pulmonary tuberculosis, the efficacy of cultural detection is rather low *(Grange, 1989)*.

Virtually every form of immunoassay has been evaluated but no clinically acceptable test has emerged owing to the high incidence of misleading results .*(Kardijito and Grange, 1982)*.

Even if all the above methods were to become available the prerequisites for their utilization include well qualified personnel and good laboratory facilities, both of which are difficult to obtain in developing countries, particularly in their peripheral health facilities. So there is a need for a simple and cheap method for identifying cases of pulmonary tuberculosis in such places *(Larsson et al., 1990)*.