REVIEW OF RESULTS OF SPUTUM EXAMINATION AND CULTURE SENSITIVITY TO ATTENDANTS TO SHOUBRA DISPENSARY DURING 1973-1977.

Thesis

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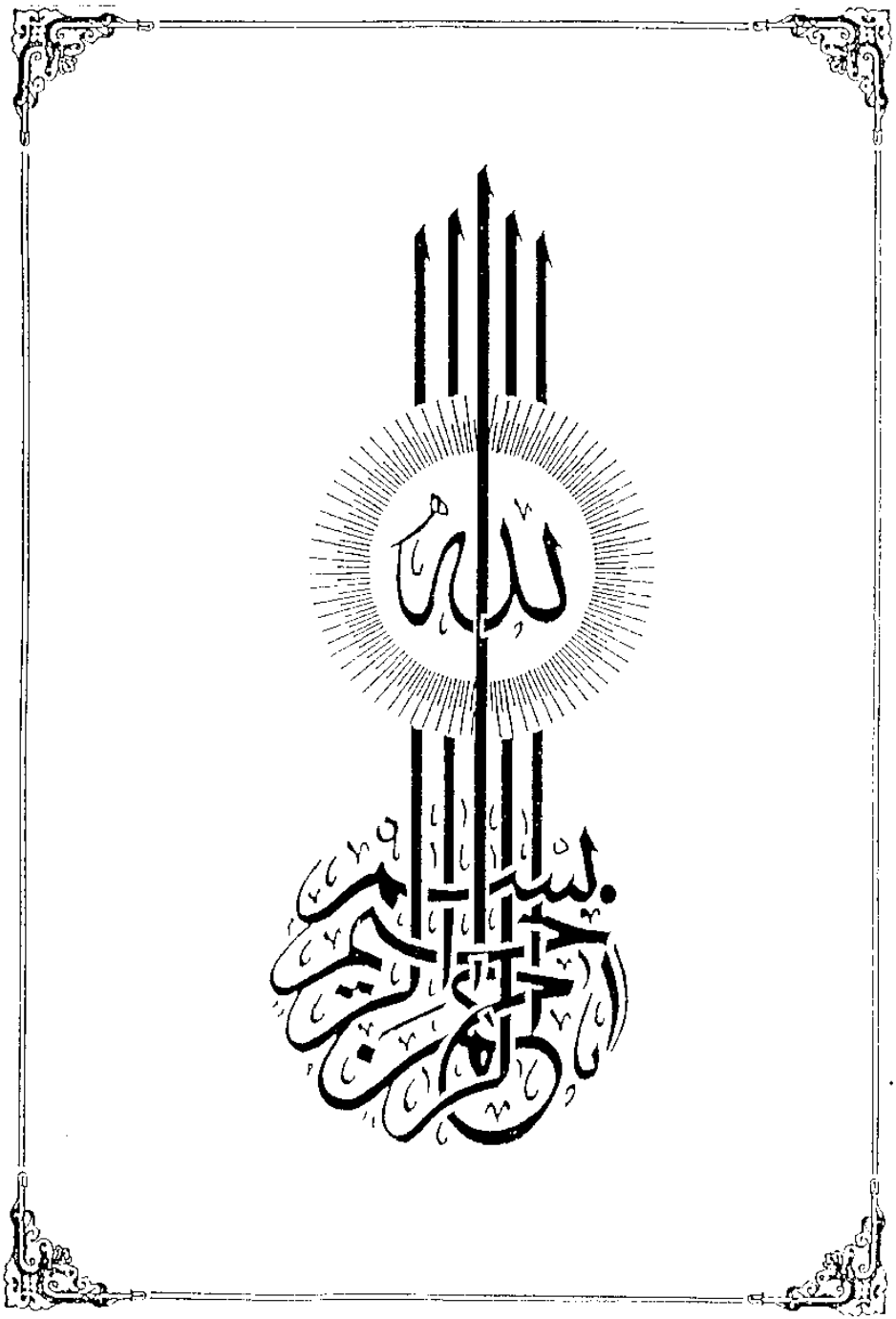

C O N T E N T S

INTRODUCTION

Tuberculosis is an infectious disease of man and other animals. In man it is caused by Mycobacterium tuberculosis and infrequently by the closely related bovine strain (M.Bovis).

In 1882 Robert Koch discovered the tubercle bacillus which ranks one of the most important discoveries in bacteriology and in the history of medicine. His original paper and the more complete one published two years later contain much of the fundamental knowledge we possess concerning the morphology culture behavior and staining reactions. The ontstanding characteristic of mycobacteria is the quality of acid-fastness, this is related to high lipid content of the organism. The tubercle bacilli in smears of sputum stained by Ziehl-Neelsen method appear as tiny, bright, refractile, brilliant red rods under the oil immersion lens of the microscope.

It is important to inoculate culture media not only for confirmation of diagnosis but for determination of sensitivity to therapeutic drugs. Culture enables to find out 25-30% of -ve cases by direct smear. Tubercle bacilli grow slowly on Lowenstein medium, the colonies appear dry, roughened, granular, creamy white islands with irregular

margins and of variable size.The cultivation require incubation for four to eight weeks.

As emphasized in the 9th Report of the WHO Expert Committee on tuberculosis, the principal aim of a bacteriological service should be to perform sputum examinations by direct microscopy on a nation-wide scale in order to ensure first the accurate bacteriological diagnosis of every smear-positive case of tuberculosis in the country and next to follow up the progress of chemotherapy.

Out of 100 case examined by direct microscopy from 65-66% showe +ve for tubercle bacilli in the 1st smear, 12% +ve in the 2nd smear and 4% in the 3rd smear. This has been stressed by D.T.O. Donia (1976). Examination by culture will add to the number of patients with a bacteriologically confirmed diagnosis of tuberculosis especialy in those who are not excreting large number of bacilli. Tubercle bacilli can be examined directly by other method than Ziehl Neelsen which is Fluourescence Technique.

In 1895, Rontgen discovered x ray which later proved invaluable for the diagnosis of tuberculosis. In 1907, Von Pirquet discovered the tuberculin test.

Soon after the First World War, the B.C.G. vaccine was evolved by the French scientists, Calmette and Guérin and was tested in 1921. The success of the B.C.G. vaccine led to larger trials. The real breakthrough in the battle against tuberculosis was the discovery of streptomycin (1944) Para-Amino Salicylic acid (P.A.S.) (1946) and isoniazid (1951). These drugs have revolutionized the methods of tuberculous control and have given a hope that T.B. control would be attainable in a reasonable time (PARK). Also as regard Rifampicin and Ethambutol (1968) which are new drugs which have greatly improve the cure rate of tuberculosis among these who are resistant to 1st liner drugs.

The Picture of tuberculosis have changed in many countries and is changing in many others because of the better socioeconomic conditions, the antituberculous treatement and natural selection. The dramatic improvement in tuberculosis situation have ocurred in the last 25 years. Many achievments have been gained in the battle against tuberculosis. The mortality rate, the morbidity and infection have declined also with decreasing disability and complication. The gains achieved against tuberculosis are to the extent of meaning 100% arrest of the disease, prevention of relapse and erradication is the target now in many countries.

As has been stressed by Madkour et al 1977, in Egypt, tuberculosis is still a major public health problem.

As a member state of the Eastern Mediterranian Region (EMR) of the WHO, Egypt is one of the countries with moderate tuberculosis prevalence-having an annual infection rate varying between 1 and 2% and a sputum positive rate between 0.1 and 0.2% and with 5 to 20% infection rates among children of 5-9 years of age and showing a constant though moderate decrease of tuberculosis.

However, Styblo has calculated the current annual risk of tuberculosis in Egypt as ranging between 1.25% and 1.5%, with an annual decrease in the risk of infection of about 3.25% over a period of 22 years- a situation which requires reorganisation of our present antituberculosis programme, since it is now universally accepted that if the decrease in the risk of tuberculous infection would be less than 5% annually, the existing programme should be reconsidered or intensified.

Thus estimation of the extent of the tuberculosis Problem yields valuable epidemiological data necessary for guiding the antituberculosis compaign. Many indices such as (i.e. the prevelence rate, the incidence rate, the infection rate and the mortality rate) can be used for

estimating the disease in the community different regions and areas and also comparison of the same area in different periods such information will be of national significance.

RESEARCH OBJECTIVE

Rapid urbanisation and industrialisation is known to be associated with many problems such as overcrowding, bad housing, poor nutrition which have a reflection on the state of health of the community.

Tuberculosis is one of the diseaseas known to be directly associated with such problems. Thus it was found interesting to study the prevelence of such a disease in a newly urbanised area.

Shoubra region a district in the north of Cairo includes three sectors.

Sahel district a relalively new district, Shoubra district an old overcrowded district of Cairo with relatively low standard of living with marked overcrowding and bad housing, no parks or gardens and Shoubra El Khema district which is a newly industrialised area with massive migration of population from rural areas. The population of the district totalled are over million belonging to the middle or lower classes. So it is clear that Shoubra region is an ideal place for study of tuberculosis since it includes newly urbanised and industrialised community that can show clearly the importance of social life on tuberculosis.

SCOPE OF THE STUDY

A new chest dispensary was established in Shoubra in 1967. It was found suitable to extend our study to the period from 1973 till 1977 as in these years almost all data are found available and5 years study may give an idea about the trend of the disease during a reasonable period.

MATERIALS AND METHODS

The material of this study was collected from the records of Shoubra dispensary covering the period from the years 1973-1977.

The following data were collected for each year.

(1) The number of individuals examined yearly.

(2) Number of sputum specimens examined by direct smear and culture and positive for acid fast bacilli.

(3) Total number of patients diagnosed as T.B. by radiological examination.

(4) The number of new cases of T.B. with +ve sputum.

(5) The age distribution of the tuberculous cases.

(6) Distribution of cases according to the extent of severity of disease whether minimal, moderate or far advanced in accordance with the diagnostic standrds of the National Tuberculosis Association (N.T.A, 1950).

(7) Cases of extrapulmonary T.B.

(8) The sensitivity to the therapeutic drugs applied for treatement of T.B. in the dispensary (S.M., INH, PAS)

The data were tabulated, statistically analysed and presented in tables and charts in order to show picture of the disease as detected in Shoubra chest dispensary from 1973-1977. A special stress was placed on the difference between the years 1973 and 1977 to clarify the changes.

RESULTS

The follow up study of the picture of T.B. in Shoubra over the years from 1973-1977 revealed that, the number of subjects examined in 1973 was 12553 of which 590 had radiological evidence sujestive of T.B. (4.7%) where as in 1977 the number was 13130 of which 404 were diagnosed as tuberculosis (4.6%) table I. The difference between the two years was statistically insignificant ($P > 0.05$).

The number of sputum specimens examined by direct smear was 5885 in 1973 of which 352 were +ve for tubercle bacilli (5.9%) where as in 1977 the number examined was 4874 with 515 +ve case (10.5%) table I. The difference was statistically significant ($P < 0.05$).

The number of sputum specimens examined by culture were 2979 in 1973 with 250 +ve culture for T.B. (8.4%). while in 1977 (2652) cultures were done with 321 +ve culture (12.1%) table I, the difference was also statisticaly significant ($P < 0.05$).

As regard the trend in new cases of T.B. with +ve sputum we find that its percentage to the total tuberculous cases was (25.2%) in 1973 and (28.4%) in 1977 (table II),

the difference was statistically insignificant ($P > 0.05$), while as regard the chronic cases we find that the percentage of chronic cases to the total T.B. cases was (74.7%) in 1973 and (71.5%) in 1977 (table III), also the difference was statistically insignificant ($P > 0.05$).

As regard the age distribution of the cases it was found that the high incidence was between 20-29 years of age.(23.9%). The next higher incidence was between 30-39 years (22.4%) the lower incidence was found at above 50 year (8.6%) table IV.

From the distribution of cases according to the extent of lesion it was found that there was a trend toward reduction of primary cases, in 1973 (23.7%) while in 1977 (16.3%) with statistically significant difference ($P < 0.05$). There was also reduction in miliary T.B. in 1973 (2.2%) in 1977 (0.6%), the difference is also statistically significant ($P < 0.05$). table IV.

As regard the sensitivity to the different antituberculous drugs it was found that there was rise in the resistance to drugs especially INH. which was (9.8%) in 1973, (11.5%) in 1977 (table VII) while the streptomycin show no difference (table VI) it was (10%) in 1973 , 1977.