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Screening of Tuberculosis in the Clientel of New Children's Hospital, Cairo University

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Abstract

Our work was done on 100 patients suffering from tuberculosis from the clientel of New Children's Hospital. Diagnosis of tuberculosis was based on the history of contact, the symptoms and signs suggestive of T.B as well as the findings of positive tuberculin reaction, positive laboratory and radiological results in favour of this diagnosis. The age of our patients was ranging from 6 months to 12 years. 60% of which was below 6 years. We found that pulmonary T.B was more common than extrapulmonary T.B (64% and 36% respectively). The commonest type of extrapulmonary T.B encountered was lymphadenitis. 22% of our patients were previously BCG vaccinated during infancy. A positive family history of T.B was detected in 32% of our patients. Eighteen percent of the patients showed negative tuberculin test especially in emaciated patients with peritonitis. Combination of lesions were present in 23% of patients. As regards extra pulmonary T.B. we found that Pott's disease of the thoracic vertebrae and caseous peritonitis were the commonest skeletal and abdominal T.B respectively. There was only one patient suffering from tuberculoma of the cerebellum. T. B meningitis, was not met in our study as we have no isolation section.

Introduction

DESPITE the decline in the incidence rate, still tuberculosis is one of the major problems in the under developed countries. The mortality rate in Egypt is about 8 per

100.000 [1]. Infants and children are most frequently infected by an adult member of the household, usually a close relative via the respiratory route. Bovine T. B is acquired via the oral rather than the respira-

tory route by ingestion of raw milk from the infected cows. The world problem of T.B. now lies in a large group of developing countries with a population of some 2 billions at present where there is virtually no decrease in the annual risk of T.B infection [2].

Material and Methods

The material of study comprised 100 patients among the clientel of the outpatient chest clinic of the Japanese New Children's Hospital, Cairo University, suffering from T.B in a six month period.

Patients were 6 months to 12 years old; 60 males and 40 females. Every patient was asked for a full personal, present, past and family histories. History of contact with tuberculous parent was especially stressed upon, as well as the socioeconomic standards of the family.

A complete physical examination including general chest, abdominal, skeletal and neurological examination was performed. BCG scar was searched for as well as the history of BCG vaccination.

Tuberculin test was performed in every subject in front of the left forearm and the mean diameter of induration read 72 hours later.

Radiological investigations; included chest X ray, postero-anterior and lateral views for all subjects. Specific radiological investigations were performed when needed for certain subjects e.g. X ray to the ver-

tebral column, skull or any joint.

Studies on ascitic fluid constitution in cases of T.B peritonitis when performed included protein and cell count determination.

Pathological investigations: biopsy or histological examination of a caseating granuloma were performed in subjects with tuberculous lymphadenitis.

C.T scan was used for the diagnosis of the case with C.N.S tuberculosis.

Diagnosis of tuberculosis was based on the history of presence of contact, the symptoms and physical signs suggestive of T.B as well as the findings of positive tuberculin reaction, positive laboratory and radiological results in favour of this diagnosis. Patients were categorized into groups with different clinical aspects: mainly pulmonary and extra-pulmonary forms of T.B and the results were analyzed as regards the age, sex, the evident clinical forms and laboratory investigations.

Results and Discussion

The age of the patients ranged from 6 months to 12 years. Six percent of the patients were infants, 54% in the pre-school age and 40% in the school age. There were predilection for males to females in all age groups.

In India, Benakappa [3] reported that the majority of cases were below 4 years (61.8%) and the females were more affect-

ed. Statistically speaking wider scales studies might be of significance in determining any sex difference.

Pulmonary T.B. is more common than extrapulmonary T.B (64% and 36% respectively). This agrees with Gofton [4].

All patients had in common a history of loss of weight, loss of appetite, night fever, night sweating. The group with pulmonary T.B complained of cough occasionally spasmodic, sometimes accompanied with wheezes and chest pain not relieved easily with ordinary antibiotics.

The group with T.B lymphadenopathy presented mainly with swelling in the cervical, axillary or inguinal region.

The group of patients with abdominal T.B had abdominal distension; complained of abdominal pain, bowel disturbances and abdominal nodular mass in cases having *Tabes Mesenterica*.

Patients suffering from skeletal T.B come complaining of vertebral deformity in most of the cases in the form of kyphosis. Few had acquired inability to walk in addition to backache.

The patients with CNS T.B presented with ataxia, loss of equilibrium, manifestations of increased intracranial tension. All these symptoms agree with those previously described [4, 5, 6, 2].

The commonest type of extrapulmonary T.B encountered is T.B lymphadenitis fol-

lowed by T.B of the abdominal cavity, skeletal T.B and lastly T.B of the C. N. S. This agrees with the findings of Al-Damlugi [7] and Sakr et al., [5].

Twenty two (22%) percent of patients were previously ECG vaccinated during infancy comparable to the findings of Sakr et al., [5] and Benakappa [3]. We notice that cases suffering from millitary T.B, skeletal T.B and T.B of the CNS were not BCG vaccinated as previously noted by Walter and Israel [8] and Sakr et al., [5].

A positive family history of contact was detected in 32% of patients as compared to 37.2% of cases in Benakappa's study [3].

Eighteen percent (18%) of patients showed negative tuberculin reaction. It was noticed to appear as early as 24 hours after testing and increased gradually up to 72 hours and persisted for a long period. In cases associated with pleural effusion or ascites (exudative forms of T.B), blister formation was extensive over the indurated area agreeing with reports of El-Hefny et al., [9] and Sakr et al., [5]. Patients with negative tuberculin reaction were emaciated especially those with peritonitis.

Combination of lesions were present in 23% of patients similar to the results obtained by Benakappa [3].

Tuberculous cervical lymphadenopathy had the highest incidence in the primary and secondary affection, agreeing with

Table 1: The Age Incidence of Patients.

Age	No.	%
Infants, 0-1 year	6	6
Preschool age, 1-6 years	54	54
School age, 6-12 years	40	40
Total	100	100

Miller [10] and Sakr et al., [5].

The commonest skeletal type of T.B was Pott's disease mainly affecting the thoracic vertebrae as noted previously by Crofton [4], Sakr et al., [5] and Forfar [11].

The caseous type of T.B peritonitis was the commonest type of T.B of the ab-

dominal cavity as previously noted by Sakr et al., [5].

The case of tuberculoma of the cerebellum was diagnosed as brain tumor. He was a boy 2 years old presenting with ataxia, loss of equilibrium and manifestations of increased intracranial tension. In addition he had night fever, night sweat, loss of weight and loss of appetite. He was not BCG vaccinated, gave negative family history of contact and his tuberculin test reaction was negative. C.T scan was done and proper diagnosis was reached after surgical removal of the mass which shows caseation.

T.B meningitis was not met in this study because patients with T.B meningitis usually are referred to fever hospitals as there is no isolation section present in the Japanese Hospital.

Table 2: The Age Incidence of Patients.

Age	Sex		Male / Female Ratio
	Male	Female	
Infants 0-1 year	5	1	5
Preschool age, 1-6 years	29	25	1.16
School age 6-12 years	26	14	1.86
Total	60	40	1.5

Table 3: The Clinical Types of Tuberculosis.

Diagnosis	No. of patients	%	Age	
			range	Mean in years
I - pulmonary TB :	64	64	9m - 12y	6 $\frac{4}{12}$
a. Isolated	45			
b. With comined lesions elsewhere	(19)			
II - Extrapulmonary TB :	36	36	6m - 11y	5 $\frac{9}{12}$
a. Tuberculous lymphadenitis :	27		" "	
- primary	22	22		
- Secondary to pulmonary TB.	(5)			
b. Tuberculosis of the abdomen :	15		21 - 11 yrs	6 $\frac{9}{12}$
- Primary	9	9		
- Secondary to pulmonary TB.	(6)			
c. Skeletal TB :	12		2 - 4 yrs	3
- mainly presenting with skeletal symptoms.	4	4		
- mainly presenting with pulmonary TB	(8)			
d. Tuberculosis of the C.N.S.	1	1	2 yrs	2
Total	100	100%		

() = lesions combined with pulmonary TB

References

1. LABIB M.F. F.: Principles of Public health Part II P. 273. 3rd Ed. Sherif's Bookshop, 1976.
2. STYBLO, K.: The epidemiological world situation of tuberculosis 100 years after the discovery of tubercle bacillus. Excerpta Medica, Chest diseases, thoracic surgery and Tuberculosis, vol. 46, Issue 3, P. 198, 1984.
3. BENAKAPPA, D.G.: XVII Int. Congr. of Ped. Philippine. Extract of free papers, vol. 1, P. 1051, 1983.
4. CROFTON, G., and DOUGLAS, A.: Respir-

- atory diseases. Third edition. Blackwell Oxford, London, Melbourne, 1981.
5. SAKR, R., SAMUEL, S., EL-HENEIDY, F. and ATALOLAH, A.L.: cervical Radiological diagnosis in tuberculous cervical lymphadenopathy G.E.P. A., 29, No. 152, pp. 151-161, 1982.
 6. SAKR, R., SAMUEL, S. and HELMY, N.T.: Studies on extrapulmonary tuberculosis in Egypt: Egypt. J. Chest Diseases Tuberculosis: vol. 27, N:1 Jan. 1984.
 7. Al-DAMLUGI, and BIGNALL, R.J.: Tuberculosis for medical students and Practitioners in Iraq p. 25, 1st Ed. William Heineman Medical Books. L. Ltd., London, 1977.
 8. WALTER, J.B. and ISRAEL, M.S.: General Pathology. p. 243. 5th ed. Churchill Livingstone. Edinburgh and London, 1978.
 9. EL-HEFNAY, A., SAMUEL, S., SOURIAL, S.F. and MICHAEL. I.G.: Tubercilin test with 2 TU, PPD, comparison of readings at 24-48-72 hours, between group of tuberculous infants and children and group of normal ECG vaccinated individuals, Egypt. J. Chest Diseases Tuberculosis: vol. 27, No 1, Han., 1984.
 10. MILLER, F.J.W., SEAL, R.M.E. and TAYLOR M.D.: Tuberculosis in children. Churchill-London, (1963).
 11. FORFAR, J.O. and ARNEIL, G.C.: Textbook of Pediatrics. third Edition: Churchill Livingstone. Edinburgh, London and New York, 1984.