Distribution Of T.B. Among Women And Pediatric Age Group Attending T.B. Center In Kirkuk Province

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Summary:

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Bakground: *A prospective study was designed to find out the prevalence of different types of T.B. among women and children.*
Methods: *A total of 390 patients aged from less than one year up to more than 65 years who attended T.B. center in Kirkuk city from beginning to end of 2005, were included in the study. A detail clinical and laboratory examination were carried out to confirm the diagnosis.*
Results: *The rate of infection in females (46.15%) was lower than males (53.84%).*
In pediatric age groups, the highest rate was among the age 12-14 (2.05%) and the lowest was among >1-2 years and 9-11 years (0.76%). Inactive pulmonary T.B. was highest among the pediatric age group.
Conclusion: *It is concluded that the rate of T.B. was high in both females and pediatric age group in Kirkuk province. Inactive T.B. was highest among pediatric age group from 12-14 years.*
Key words*:T.B., women, children, Kirkuk*

Introduction:

Tuberculosis is an ancient enemy of man kind remains one of the most serious infectious diseases in the world (1).Tuberculosis is an infection with bacteria (Mycobacterium tuberculosis) which affects most commonly the lungs (pulmonary), but can also affect the central nervous system (meningitis), lymphatic system, circulatory system (milliary), genitourinary system, bones and joints (2).

Tuberculosis is the leading cause of death in the world from a single infectious disease, infecting two billion people or one-third of the world s population; with nine million new cases of active disease annually causing about two million deaths mostly in developing countries (3).

Maternal and child health programs are specifically concentrating on prevention and control of diseases in these two vulnerable, high risk groups as each case of T.B. if untreated may infect 15 persons per year among contacts especially children (4).

In recent years the neglect of T.B. control program, HIV-AIDS and immigration has caused a resurgence of T.B. with emerging of multi drug resistance (MDR) strains (3). As the immune response has a great role in progress of pulmonary T.B. because in immune competent host the response against Mycobacterium tuberculosis (MPT) infection is chiefly rely on effective interaction between cell mediated immunity and delayed type hypersensitivity reaction (5).

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In South Africa it has been reported the highest incidence rate of T.B. was 273/ 100.000 for males and 205/ 100.000 for females below one year of age, with 20% of all T.B. notification among children below 14 years of age (4).

Each case of active T.B. if untreated may infect at least 15 persons especially contacts and more specifically the children (6).

The background on which T.B. is diagnosed is persistent cough and sputum for more than three weeks, pleural pain, haemoptysis, weight loss, fever and lethargy (7).

This study was planned to show the distribution of T.B. among adult females and pediatric age groups who attended T.B. centre in Kirkuk city.

Patients And Methods:

The study was carried out for the period from beginning to the end of 2005. A total

Of 390 T.B. patients attended T.B. center in Kirkuk city were examined for the presence of T.B. among women and pediatric age groups.

Full clinical examination was done for each patient attending the center directly in addition to referred cases by specialists from hospitals and private clinics around the city.

Each patient had a posterio-anterior (PA) view chest X-ray film and accordingly direct sputum examination was carried on as follows: three early morning sputum samples were prepared and stained by Ziehl-Neelsen stain; the first sample was obtained on the first visit of the patient while the second and the third were taken the next day. Smear positive patient were regarded as active pulmonary

tuberculus patient.

Extra pulmonary T.B. was diagnosed by biopsy specimen of the affected organs (skin, peritoneum, bone and joint).

Results:

Table 1 shows the distribution of T.B. according to types. It was found that the inactive pulmonary was the highest (43.07%), followed by active T.B. (25.38%), pleural effusion (13.07%), relapse (6.92%), lymph node (4.35%), vertebrae (2.05%), meningitis (1.53%), urogenital (1.28%), periton (0.76%), both milliary and bone (0.51%), and the lowest was both skin and pericardial (0.25%) respectively. No intestinal T.B. was recorded.

Table 1. Distribution of types of T.B. in both sexes.

Type of T.B.	Male		Female		Total No.	Percentage %
	No.	%	No.	%		
Pulmonary						
Active sputum +ve	62	15.8	37	9.4	99	25.38
Inactive sputum –ve	77	19.7	91	23.3	168	43.07
Relapse	22	5.6	5	1.2	27	6.92
Total	161	41.3	133	34.1	294	75.3
Extra-pulmonary						
Meningitis	4	1.02	2	0.51	6	1.53
Intestinal	0	0	0	0	0	0
Periton	0	0	3	0.76	3	0.76
Bone	2	0.51	0	0	2	0.51
Vertebra	3	0.76	5	1.28	8	2.05
Uro-genital	4	1.02	1	0.25	5	1.28
Lymph node	4	1.02	13	3.33	17	4.35
Skin	0	0	1	0.25	1	0.25
Effusion (Pleural)	31	7.9	20	5.12	51	13.07
Milliary	1	0.25	1	0.25	2	0.51
Pericardial	0	0	1	0.25	1	0.25
Total	49	12.5	47	12.05	96	24.6
Overall total	210	53.84	180	46.15	390	

The distribution of T.B. according to age groups is indicated in table 2. Statistically there was significant difference in T.B. distribution according to age. The highest rate of T.B. was among age group 15-25 years (19.48%) followed by 55-64 (18.46%), 25-34 (16.66%), 45-54 (16.15%), over 65 (13.07%), 35-44 (10.25%), 6-14 (4.10%), 1-5 (1.53%) and the lowest was among children below one year of age (0.25%) respectively .

Table 2. Distribution of T.B. according to age groups.

Types of T.B.	>1	1-5	6-14	15-24	25-34	35-44	45-54	55-64	<65	Total
Pulmonary										
Active	0	2	2	24	25	10	18	12	6	99
Inactive	0	3	9	19	11	15	30	48	33	168
Relapse	0	0	0	9	4	5	1	1	7	27
Total Pulmonary	0	5	11	52	40	30	49	61	46	294
Extra –pulmonary										
Meningitis	0	0	0	3	2	0	0	0	1	6

Intestinal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Periton	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**3**
Bone	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**
Vertebra	**0**	**0**	**0**	**1**	**2**	**0**	**3**	**1**	**1**	**8**
Urogenital	**0**	**0**	**0**	**1**	**2**	**0**	**1**	**0**	**1**	**5**
Lymph node	**1**	**1**	**1**	**4**	**3**	**2**	**3**	**2**	**0**	**17**
Skin	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
Effusion	**0**	**0**	**3**	**11**	**14**	**8**	**6**	**7**	**2**	**51**
Milliary	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**
Pericardial	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
Total	**1**	**1**	**5**	**24**	**25**	**10**	**14**	**11**	**5**	**96**
%	**0.25**	**1.53**	**4.10**	**19.48**	**16.66**	**10.25**	**16.15**	**18.46**	**13.07**	

As far as the distribution of active T.B. is concerned it is indicated in table 3 that the rate of active T.B. was higher in males (29.52%) than females (20.55%). In male patients the highest rate of active T.B. was among age groups 25-34 years (8.09%) followed by 15-24 (7.14%), 45-54 (4.76%), 55-64 (3.80%), over 65 (2.38%), 35-44 (1.42%) and the lowest in both 1-5 and 6-14 (0.95%) and no active T.B. was detected below one year old. While in females the rate of active T.B. was highest among 15-24 (5.0%), followed by both 25-34 and 45-54 (4.44%), 35-44 (3.88%), 55-64 (2.22%), 0ver 65 (0.55%), and no positive cases were detected among female aged below one up to 14 years.

Table 3. Distribution of active T.B. according to age in both sexes (210 males and 180 females).

Age (year)	Males		Females	
	Number	Percentage %	Number	Percentage %
<1	**0**	**0**	**0**	**0**
1-5	**2**	**0.95**	**0**	**0**
6-14	**2**	**0.95**	**0**	**0**
15-24	**15**	**7.14**	**9**	**5.0**
25-34	**17**	**8.09**	**8**	**4.44**
35-44	**3**	**1.42**	**7**	**3.88**
45-54	**10**	**4.76**	**8**	**4.44**
55-64	**8**	**3.80**	**4**	**2.22**
>65	**5**	**2.38**	**1**	**0.55**
Total	**62**	**29.52**	**37**	**20.55**

Table 4 indicates the distribution of T.B. among pediatric age group, it was highest in 12-14 years (2.05%) followed 3-5 (1.28%), 6-8 (1.02%) and the lowest was among both groups below 1-2 and 9-11 (0.76%) for each respectively.

Table 4. Distribution of T.B. among pediatric age group according to age .

Age group (year)	Number	Percentage %
>1-2	**3**	**0.76**
3-5	**5**	**1.28**
6-8	**4**	**1.02**
9-11	**3**	**0.76**
12-14	**8**	**2.05**
Total	**23**	**5.89**

Regarding the distribution of types of T.B. in pediatric age group, it is shown that the inactive T. B. was highest (3.07%) followed by active T.B. (1.02%), both lymph node and effusion (0.76%), and the lowest was pericardial (0.25%) and no other types of T.B. were detected among this age group (Table 5).

Table 5. Distribution of T.B. among pediatric age groups according to types.

Types of T.B.	Number	Percentage
Pulmonary		
Active T.B	**4**	**1.02**
Inactive	**12**	**3.07**
Total pulmonary	**16**	**4.1**
Extra-pulmonary		
Meningitis	**0**	**0**
Intestinal	**0**	**0**
Periton	**0**	**0**
Bone	**0**	**0**
Vertebra	**0**	**0**
Urogenital	**0**	**0**
Lymph node	**3**	**0.76**
Skin	**0**	**0**
Effusion	**3**	**0.76**
Milliary	**0**	**0**
Pericardial	**1**	**0.25**
Total extra-pulmonary	**7**	**1.8**
Overall total	**23**	**5.89**

Discussion:

The higher rate of pulmonary T.B. than extra-pulmonary, reflects that the mostly affected sites is the lungs (8). The lower rate of extra-pulmonary T.B. than pulmonary one is in agreement with that reported by Sajid (9) in Salahaddin province, Kadir et al. (10) in Al-Tameem province and Zaman (11) in Saudi Arabia who showed that E.P.T. seldom encountered due to unusual symptoms and early diagnosis was difficult in most of cases of his study.

The higher rate of inactive T.B. than active T.B. might be due to administration of anti T.B. drugs before attendance to T.B. center or due to lack of laboratory expert in diagnosis of T.B.

The high rate of T.B. lymphadenitis in this study is also reported by Zangana (12) in Salahaddin province, Zaman (11) in Saudi Arabia and Kadir et al. (10) in Al-Tameem province. The presence of extra-pulmonary T.B. in general might be due to reactivation of primary tuberculous lesions in lungs.

Concerning the age distribution of T.B., the highest rate was among the age group 15-24 which is not identical to that reported by Kadir et al. (10) who found the highest rate in age group 20-29 years. This reflects the decreasing effect of BCG vaccination following 10 years of age. The high rate of T.B. among 55-64 years, may be due to presence of some pathological conditions leading to immune deficiency like diabetes, anemia, malnutrition and others. This finding against that reported by Kadir et al. (10) who found the highest rate among age group 20-29 years.

In the present study the low prevalence under 14 years of age assures the effectiveness of BCG vaccination program in prevention of T.B. This goes with studies done by Sajid (9) and Zodpey et al. (13) who reported that BCG vaccination was highly effective against T.B. and played a significant role in prevention of T.B. in this age group.

The higher rate of T.B. in males than females is in agreement with the study done by Sajid (9) and Zangana (12). This might be due to males have more chance to exposure to infection in addition to social and traditional factors. This results also goes with study done by Borgdorff et al.in Netherland (14), who found that the rate of T.B. in males was higher than females, but disagree with thje study done by Kadir (10) and Zaman (11) who showed the prevalence of extra-pulmonary T.B. in females was higher than males.

Regarding the distribution of T.B. among pediatric age group, inactive T.B. was highest which is identical to adults. This might be related to difficulties in identifying the disease among pediatric age group (15).

The rate of tuberculosis in this study among pediatric age group was 5.89%, which is almost identical to that reported in industrialized countries (5%), therefore it is important to pay particular attention on conformation of T.B. in this important group of population.

One of the main factors contributing to the importance of childhood T.B. in developing

countries is the shape of population pyramid where between 40-50% of the population may be under the age of 15 years (1).

It is recommended to carry on further studies on wide community bases to establish the real burden of T.B. specially in female and children.

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