Tuberculosis in Falluja (1 year) Epidemiological study (30/6/2007 – 1/7/2008)

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Abstract:

Objective: To study the incidence of tuberculosis in Falluja for 1 year (2007-2008).

***Subjects & Methods*:** Collection of all T.B cases in the city who attended T.B center and classified them according to type of T.B.Then treating and following up them.

Results: Notified incidence of disease in Falluja was 28 cases/100000 of population for all types and 11 cases/100000 of population for sp +ve pulm. type , 2/3 of all T.B cases are pulmonary type.

The detection rate was 44% for active pulmonary T.B which represents 63% of the goal of WHO (the goal is detect 70% of expected active pulm. T.B).

Conclusion: Low detection rate especially for active pulm. T.B in Comparison with expected T.B cases in Iraq .

This study makes the need for T.B center in a city of large population like Falluja supplied with enough respiratory disease medication including anti T.B and provide a well trained health case personnel's.

Introduction:

T.B is an infection caused by bacteria called mycobacterium tuberculosis.[1-2-3].

The disease caused a major health & social problem for most of the developing countries including Iraq.[3-4]

About 1/3 of world population are infected with T.B bacilli (1.9 bilion), and 9 million of those have active disease each year. This means 1027 new cases / 1 hour .[6-7-8]

The disease kills about 3milion cases annually. This means 342 are killed each hour.[7-8]

90% of T.B deaths occur in developing countries and 75% of active pulm. (sp+ve) occurs in economically productive age group (15-45)year.[4-9]

The danger that is associated with tuberculosis is the AIDS which activate the infection and the development of MDR strains [10 – 11] .

Subjects & Methods:

140 T.B cases are collected from Fallujah T.B clinic from 30/6/2007 to 1/7/2008. Those patients are referred to the clinic from private doctors according to chest X-Ray suspicion for pulm. type or depending on histopathology in case of extra pulm - tuberculosis.

Those patients are received treatment according to DOTS categories and to be followed during the course of treatment.

The data was analyzed according to gender ,type and locality of disease .

Detection rate for active pulm. T.B and comparison with expected T.B cases in community was measured.

Notified cases in AlAnbar province and in Iraq as a whole for a previous year of study were mentioned .

Results :

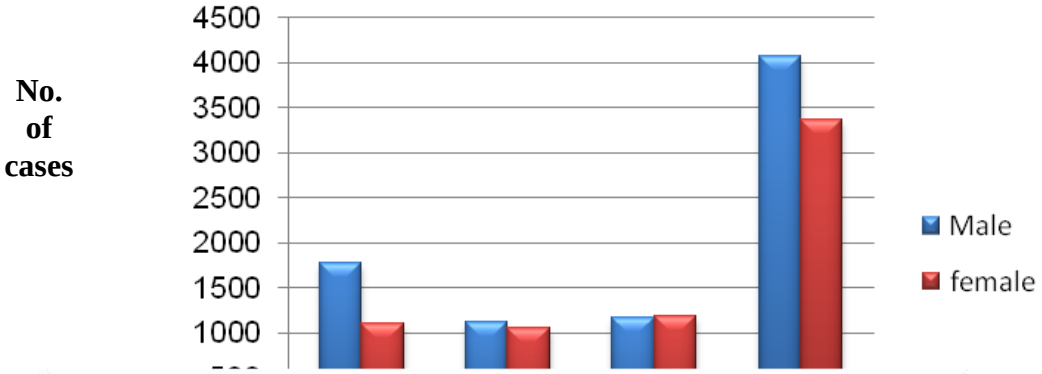
According to gender classification shown in Fig. 1, there is a good detection rate among female .

Approximately , 2/3 of cases affect the productive age group . A group >50 years is also affected in high percentage (26. 4%) Tab.1.

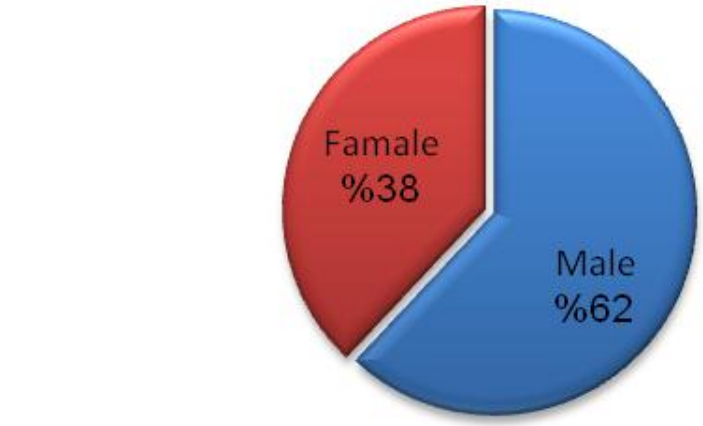
Predominant cases approximately 2/3 are of pulmonary T.B and most of those have active type (sp+ve) which Is infectious type , while 1/3 of cases are extra pulmonary type as shown in Tab.2 and Fig.2 .

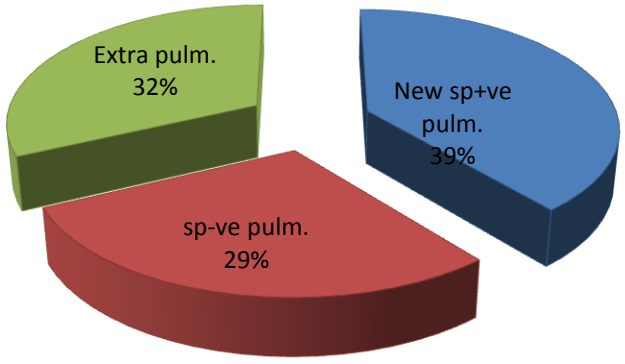
Most common cases are recorded in crowded are a (urban area) in center of Al Falluja . See Tab.3.

In comparison with WHO for expected cases of T.B in Iraq , the detection rate is 50% for all types and 44% for active pulm type . In general , the detection rate is too low for Al Anbar province. See Tab.4.



Active Pulm. (sp +ve) Recorded in Iraq According Sex at 2006





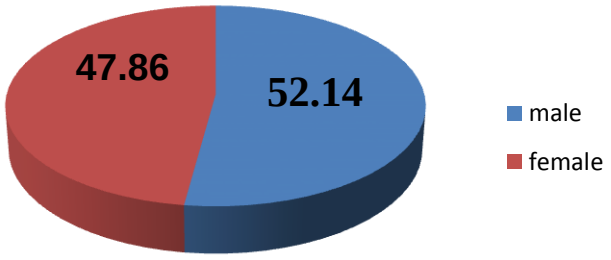
Year	Total T.B cases	T.B according sex		T.B according type		
		Male	female	Pulm.		Extra pulm.
				Sp+ve	Sp-ve	
٢٠٠٥	٢١١	١٢٠	٩١	٨٧	٦٤	٦٠
٢٠٠٦	٢١٥	١٢٦	٨٩	٩٩	٥٦	٦٠

T.B cases according to sectors in Al-Anbar Province

Year	Ramadi center	Falluja Center	Other centers in the province	Total
2005	152	28	31	211
2006	104	92	19	215

- Low no. recorded in Falluja in 2005 due to the blockade imposed post attack .
- Detection rate for all T.B types in Falluja is 10 % in 2005 & 33% in 2006 .

Fig 1 : T.B cases registered in Falluja for 1 year by sex 2007-2008



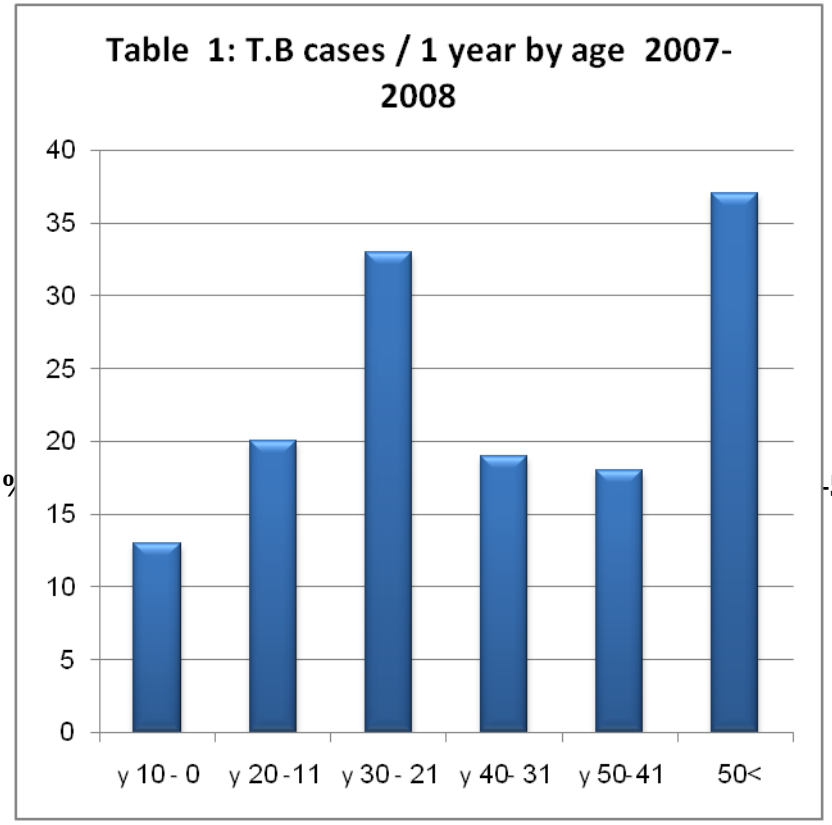
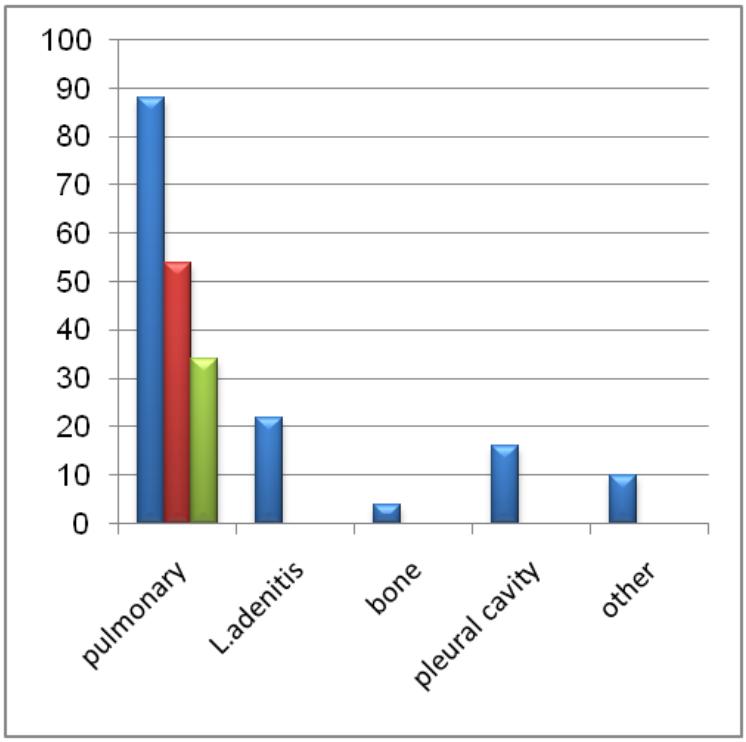


Table 1: T.B cases / 1 year by age 2007-2008
40
35
30
25
20
15
10
5
0
y 10 - 0
y 20 -11
y 30 - 21
y 40- 31
y 50-41
50<

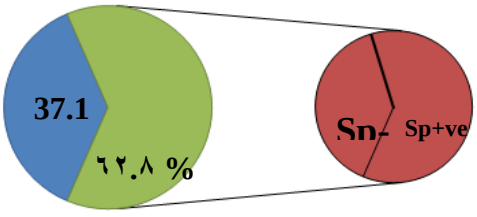
64% **-50 y)**

Table 2 : T.B cases / 1 year according to types

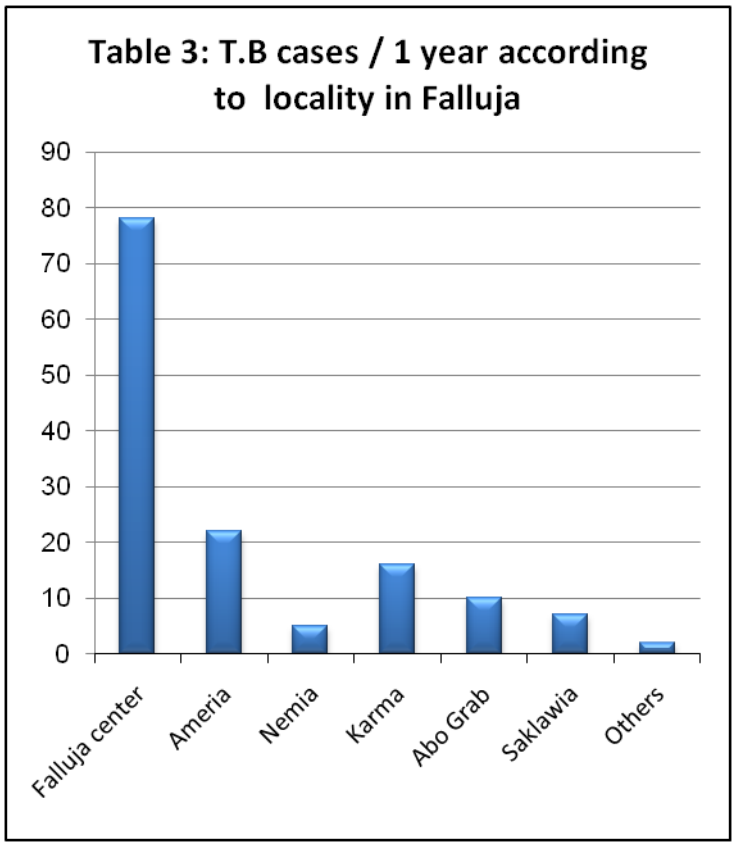


Sp +ve pulm. cases including relapse (6 cases)
Sp -ve pulm. cases including relapse (2 cases)

Fig 2: T.B cases according to types



٦٢.٨ % of all T.B cases are pulm. Type
٦١.٣ % of pulm. cases are active p.T.B sp +ve (infectious).



71.4 % of cases are in Falluja center & Ameria (urban crowded area)

Incidence of disease in Falluja

$$= \frac{\text{new cases + reactivated cases}}{\text{population – those with T.B}} * 100000$$

$$= \frac{140}{512000} * 100000$$

$$= 28 \text{ case / } 100000$$

$$\text{New active cases rate} = \frac{\text{new active T.B (sp +ve)}}{\text{total pop. – T.B cases}} * 100000$$

$$= \frac{54}{512000} * 100000$$

$$= 11 \text{ case / } 100000$$

- Total T.B cases are 140 (notified)
- All expected T.B cases are 280 .This means that the detection rate is 50% while the detection rate for active pulm. type is 44% .

No. of Population	Estimated incidence no. of new T.B			Notified incidence no. of		Detection rate	Notified incidence rate of	
	All forms	New sp+ve	Target sp+ve	All forms	New sp+ve	New sp+ve	All forms	New sp+ve
	56/ 100000	25/100000	70%	Numbers	Numbers	%	/100000 pop.	/100000 pop.
1,597,291	894	399	280	215	80	20%	13	5

Table 4 : T.B expected & observed cases in Al-Anbar province in 2006

- Low detection rate is 20% as compared with Falluja study which is 44% for sp +ve pulm. type .

Discussion

Low numbers of T.B cases were recorded in 2005 in Falluja .This was due to blockade post attack in that year (low attendance).

Good detection rate among female in comparison with Iraqi study indicates good attendance of female to the T.B clinic .

Predominant of T.B cases are pulm. type .this result is similar to the Iraqi study .[12,13]

High percentage of disease affects productive age group .This is correlated with Iraqi analysis.[12,13]

Most T.B cases were recorded in crowded areas .This explains the infectiousity of disease as most cases are pulmonary.

In general , a low detection rate for T.B cases recorded in this study as compared with expected WHO result. This means much efforts must be done for active case finding especially for household contacts.

Conclusions

Low numbers of T.B cases were recorded in 2005 in Falluja . This was due to blockade post attack at that year (low attendance) while high numbers of T.B cases were recorded in Falluja in 2006 in comparison with other cities of Al.Anbar province .

When comparing the result with expected T.B cases in Iraq (WHO) ,there is a low detection rate especially for contagious (sp+ve T.B) .This enhances spread of the disease among contacts .

As disease in this study mainly affects productive age group especially in crowded areas, a special effort should be made for active case finding and early management of sick case that prevents spread .

This study shows the need for T.B center in a large population city like Falluja supplied with enough respiratory disease medication including anti T.B and provision of a well trained heath care personnel .

Recommendations

* Early detection and reporting of cases of pulm. T.B : So curative treatment can be initiated, transmission interrupted.

* Close contact investigation and early disease treatment: As 30 – 40 % of persons with close exposure to pulm. T.B become infected and 2 % of all close contact had active T.B , contacts are more likely to be household members.

* Pursuing high quality DOTS expantion and enhancement:

Making high quality services widely available and accessible to all those who need them , including the poorest and most expand DOTS to even remotest areas.

* Engaging all care providers: To be able to reach all patients and ensure that they receive high quality care , all type of health care providers are to be engaged .

* Finding a T.B center in a big & crowded area like Falluja.

* Availability of non T.B medications for T.B center that will enhance detection of T.B cases in respiratory disease patients who attend that center.

* SupplyingT.B center with T.B medication and omitting anti T.B form private pharmacies for good registration and following up cases.

* Supplying T.B center by laboratory facilities.

* Training of T.B health workers.

Abbreviations

T.B tuberculosis Pulm. pulmonary
AIDS acquired immune deficiency syndrome
MDR multi drug resistance
DOTS direct observed therapy of short course Strategy
WHO world health organization
Sp +ve sputum positive
Sp -ve sputum negative

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