

## MDR-TB is in town; and might be tugging along XDR-TB

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**Multi-drug resistant tuberculosis** (MDR-TB) is defined as TB that is resistant to the two main first-line drugs (isoniazid and rifampicin).

**Extensively drug resistant TB** (XDR -TB) is a relatively rare type of MDR-TB and is defined as TB which is resistant to isoniazid and rifampicin, plus resistant to any fluoroquinolone and at least one of three injectable 2<sup>nd</sup> line drugs (i.e. amikacin, kanamycin or capreomycin).

### Study Design

Setting: Abu-Anja Teaching Hospital for Respiratory diseases.

Period: January to September 2008.

### Rationale for the study

It has been noted that there is a rapid increase in the number of patients who have completed first line anti-tuberculous drugs once or more, but their sputum remain heavily positive with *Mycobacteria*, while others have empirically started 2<sup>nd</sup> line treatment.

### Specific objectives

1. To find out if these cases are MDR-TB, and to record the trend and the percentage of MDR-TB at Abu-Anja Hospital during this period.
2. To find out the reasons for development of MDR-TB among these patients.
3. To assess the number of the patients on 2<sup>nd</sup> line treatment before culture and sensitivity, and how they procure the drugs.
4. To find out if there are cases resistant to 2<sup>nd</sup> line drugs.
5. To assess the size of co-infection (HIV/TB etc.) in the study group.

### Materials and methods

An exploratory, descriptive & analytic retrospective and prospective study of:

- All patients who had been treated with 1<sup>st</sup> line anti-tuberculous drugs and whose sputum remains positive, and those who have started the 2<sup>nd</sup> line treatment.

An instructed questionnaire was used, with 24 open-end questions, 10 multi-choice questions and 2 comments. Each patient attempted to answer all the questions.

Exclusion criteria: Patients who have defaulted, but whose sputum is negative for AAFB (acid alcohol fast bacilli), or whose drug sensitivity test remains sensitive to both Rifampicin and Isoniazid (INH).

### Results

#### Details of the 24 MDR-TB patients questioned

- 17 (71%) were males and 7 (29%) were females.
- Marital status: Single 44%; Married men 33%; Divorced 6%; Housewives 17%.
- Numbers in each age group: 20-30 years 10; 31-40 years 6; 41-50 years 5; 51-60 years 3.
- Occupation: Self-employed 33%; Jobless 13%; Student 4%; Housewife 17%; Farmer 29%; Government employee 4%.

#### Compliance and defaulting

Table 1. Compliance with anti-TB drug treatment (numbers)

	TB Treatment completed	TB Treatment interrupted once	TB Treatment interrupted >once
1 <sup>st</sup> line drugs	9	4	6
2 <sup>nd</sup> line drugs	6	5	13

Reasons for TB treatment interruptions: No money, no drugs, felt well.

**Table 2. Defaulting in TB Treatment by age groups**

	20-30 years	31-40 years	41-50 years	51-60 years
Complied	2	2	1	3
Defaulted	7	2	1	0
Others	3	1	2	0

**MDR-TB numbers and trends at Abu-Anja Teaching Hospital**

Numbers of MDR-TB cases by year: 2004 0; 2005 4; 2006 4; 2007 7; 2008 9.

Evaluation of 11 case cohort from 2005-2007: Died 2; Treated and hearing disability 2; Treated completely 3; Loss to follow up 4 (1 died without sputum conversion).

**MDR-TB cases from January-September 2008**

Of the 24 cases 21(88%) were MDR-TB only; 1 (4%) was MDR-TB+HIV and 2 (8%) were MDR-TB+DM (diabetes mellitus).

**Table 3. Sensitivity test to 1<sup>ST</sup> line TB drugs**

	INH	Refampicine	Streptomycin	Ethambuto l
Sensitive	0	2	1	4
Resistant	24	22	23	20

**Conclusions**

- The MDR-TB trend is rapidly rising.
- The MDR-TB situation at Abu-Anja hospital is the tip of an iceberg. The number of patients will increase if 2<sup>nd</sup> line drugs are available free of charge.
- This reflects previous poor management of TB at different levels.
- The study is small, but reflects serious indicators.

**Recommendations**

1. To revisit the DOTS package strategy, and to strengthen and implement it to reach those who are difficult to reach (i.e. they have no access to medical facilities). This should prevent more patients becoming cases of MDR-TB.
2. Early monitoring of MDR-TB to contain its spread, by providing services free of charge (e.g. sputum culture and drug sensitivity test of 2<sup>nd</sup> line drugs which should be sustained and free of charge).
3. Urgent training of a task force for management of MDR-TB in the South Sudan.
4. Urgent TB-survey of South Sudan to discern the magnitude of the problem.

**Closing note:**

At the launching of JUBA INITIATIVE on HIV in 2003, I said, “this war is;

- A war against an invisible enemy.
- A war in which no wounded soldiers survive.
- A war in which there are no warlords to negotiate with.
- A war in which no people of goodwill are effective.
- A war in which no one should turn back, because it is directed against US ALL.”

Now this invisible **ENEMY** becomes faster and more **LETHAL** in presence of **MDR-TB**.

Compiled by Dr Peter Otto from his Powerpoint presentation.