Clinical Practice Guideline for Management of Multi-drug Resistant Tuberculosis

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References Used as References for developing This Guideline

- Guideline for Tuberculosis Treatment, 4th edition, Word Health Organization, Geneva, 2010.
- Multidrug and Extensively drug resistant TB (M/XDR-TB) :2010 Global Report on Surveillance and Response, World Health Organization, Geneva, 2011.
- แนวทางแห่งชาติสำหรับการรักษาวัณโรคดื้อยาหลายขนาน สำนักวัณโรค กรมควบคุมโรค กรุงเทพ 2552
- Literature review by searching Medline

Magnitude of M/XDR-TB in Thailand

- Several hot spots of high incidence of MDR-TB have been identified and not related to HIV epidemic.
- Incidence is not as high as expected from epidemiological calculation.
- MDR-TB in health care worker is a concerned issue.
- Several XDR-TB cases have been reported in Thai patients.

Magnitude of M/XDR-TB in Thailand

- % MDR among new B cases 1.7 (1.1-2.6)
- %MDR among previously treated TB cases 34.5 (28.2-41.5)
- Number of MDR-TB among incident new and relapse TB cases 1700 (950-2500)
- Number of incident acquired MDR-TB cases 1300 (940-1700)
- Number of MDR-TB among incident total TB cases 2900 (2100-3800)

Who Should be Suspected to be MDR-TB?

- **Irregular treatment**
- **Relapse**
- **Failure**
- **History of contact with resistant case**
- **Addicts ?**
- **HIV/AIDS patients**

Diagnosis of MDR-TB

- **Clinical history**
- **Worsening of clinical signs/symptoms**
- **Exclude of other possibility**
- **Sputum examination or culture result**
- **Drug susceptibility testing (DST)**

Laboratory Diagnosis of MDR-TB

- Standard media
  - L-J medid
- Rapid standard liquid media
  - MGIT media
- Rapid genotype
  - Hain test
  - GeneExpert
- Other techniques
  - MODS, Nitrate reduction test,etc

Treatment of MDR-TB

- "standard empiric" and "tailored" regimen have the same success rate.
- No standard universal empiric regimen for every countries.
- Standard regimen for each country is based on prevalence of second line drugs resistance.
- At least 4 susceptible drugs should be used to treat MDR-TB

Treatment of MDR-TB

- Aminoglycoside and Fluoroquinolone should be used as core drugs for treatment.
- Five groups of anti-TB drugs are classified regarding to activities against *M.tuberculosis.*
- In case that standard empiric or DST result is not available , select the most reliable drugs from the list
- Any drug which has been used more than one month with outcome of smear positive should be consider as resistance what ever the DST resultt

Treatment of MDR-TB

- Levofloxacin is preferred than Ofloxacin because of better PK/PD
- Kanamycin is preferred than Streptomycin because of lower resistant rate in MDR-TB
- Pyrazinamide should not be used for MDR-TB treatment because of nearly 50% resistant in MDR-TB
- Treatment should be continued up to 18 after culture negative instead of total 18 months of treatment

Treatment of MDR

- Current Guideline :
  - Category 4(1) : 6K,OFX,PAS,EMB,PZA/12OFX,PAS,EMB,PZA
  - Category 4(2) : 6K,OFX,PAS,ETA,CS/12OFX,PAS,ETA,CS
- Proposed new regimen:
  - 6K,LFX,PAS,ETA,CS(EMB)/12LFX,PAS,ETA,CS(EMB)

EMB has a little higher resistant rate but much cheaper in cost

Follow Up Scheme of MDR-TB Treatment

- Sputum smear every month
- Sputum culture every month in the first month or until culture negative then every 3 months
- Chest X-ray every 6 months or clinical suspected of complication or other diagnosis
- Laboratory testing of CBC,LFT,BUN/Cr should be done before treatment started and when clinical suspicious of ADR.

Treatment of XDR-TB

- Must be confirmed by DST against second line drugs.
- Core drugs are : Linezolid and Capreomycin
- Other adjunct drugs are : clofazimine, moxifloxacin, cycloserine if never been used before
- Duration of treatment is not known.
- Infectiousness is not known.
- Infection Control is the same as TB or MDR-TB

Evaluation of Treatment Outcome

- Patient should have more than 80% of doses during the treatment period.
- Success defined as complete treatment and smear and culture negative at least 5 times in the last 12 month of treatment.
- Chest X-ray is not used as a part of success evaluation.
- Laboratory test is not part of success evaluation except for ADR assessment.

Control of MDR-TB

- Get priority in administrative level
- MDR-TB as disease managed program of NHSO
- Launch out XDR-TB treatment program as a vertical program with adequate financing to confine the magnitude of XDR-TB.
- Strengthening laboratory net work
- Implementation of infection control measures to prevent M/XDR-TB spreading in health care settings

Plan of Approval and Implementation

- New draft of guideline will be discussed in a committee meeting arrange by BTB.
- The committee composes of TB specialists from university hospital, CCIT, provincial hospital, district hospital, ATAT, TST, BTB .
- The final guideline will be approved by Department of Disease Control, TST, ATAT.
- Implement of the guideline
- Request support from NHSO