UNIT FARMASI KLINIKAL DAN MAKLUMAT DRUG
JABATAN FARMASI
HOSPITAL USM

EDARAN MAKLUMAT
December 2021,
Volume 53; Issue 6

TUBERCULOSIS TREATMENT & MANAGEMENT

FIRST LINE ANTI-TB DRUGS

Drugs & strength available in Hospital USM		Adult		Paediatric		Recommended dose & frequency for patients with CrCl < 30 ml/min or on hemodialysis (Adult)	Use in pregnancy	Use in lactation	Ryle's tube feeding
		Dose (range) mg/kg	Max dose (mg) OD	Dose (range) mg/kg	Max dose (mg) OD				
Isoniazid (H)	100mg/tab	5 (4-6)	300	10 (10-15)	300	No adjustment	Safe	Safe	✔
Rifampicin (R)	150mg/cap 300mg/cap	10 (8-12)	600	15 (10-20)	600	No adjustment	Safe	Safe	✔
Pyrazinamide (Z)	500mg/tab	25 (20-30)	2000	35 (30-40)	2000	25-30 mg/kg/dose 3x/week (given after HD)	Safe	Safe	✔
Ethambuthol (E)	400mg/tab	15 (15-20)	1600	20 (15-25)	1000	15-25 mg/kg/dose 3x/week (given after HD)	Safe	Safe	✔
IM Streptomycin (S)	1000mg/vial	15 (12-18)	1000	-	-	15 mg/kg/dose 2-3x/week	Avoid	Safe	- (IM)
Fixed Dose Combination (FDC) **AKuriT-4**	Isoniazid 75mg, Rifampicin 150mg, Pyrazinamide 400mg, Ethambuthol 275mg	Dose based on BW: 30-37 kg: 2 tabs OD 38-54 kg: 3 tabs OD 55-70 kg: 4 tabs OD > 70 kg: 5 tabs OD	5 tabs	-	-	Give individual drugs with renal dose adjustments	Safe	Safe	X (cannot be crushed or break)

- **Adult:** Pyridoxine 10-50 mg daily needs to be added if isoniazid is prescribed
- **Paeds:** Pyridoxine 5-10 mg daily needs to be added if isoniazid is prescribed
- **Pregnancy:** Pyridoxine 25 mg daily should be given to all pregnant woman on isoniazid to prevent foetal neurotoxicity

ANTI-TB TREATMENT DURATION[1]

WHO

- Regimen should contain 6 months of rifampicin: (2 months EHRZ + 4 months HR)
- TB meningitis: 9-12 months
- Bone & joint TB: 9 months

NICE

- Meningeal TB: 2 months S/EHRZ + 10 HR
- Peripheral lymph node TB: should normally be stopped after 6 months
- Bone & joint TB: 6 months
- Pericardial TB: 6 months

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DOSAGE OF 1ST LINE ANTITB DRUGS (ADULTS)

DRUGS	H	R	S	E	Z
Dose (range) mg/kg	5 (4-6)	10 (8-12)	15 (12-18)	15 (15-20)	25 (20-30)
BW (kg)	OD	OD	OD	OD	OD
20-24	100	150	300	400	500
25-29	150	150	400	600	500
30-34	150	300	400	600	750
35-39	200	300	500	800	750
40-44	200	450	500	800	1000
45-49	250	450	750	1000	1000
50-54	250	450	750	1000	1250
55-59	300	600	1000	1200	1250
60-64	300	600	1000	1200	1500
65-69	300	600	1000	1200	1500
70-74	300	600	1000	1200	1500
75-79	300	600	1000	1200	1500
80-84	300	600	1000	1200	1500
85-89	300	600	1000	1200	1500
90-94	300	600	1000	1200	1500
> 95 (max dose)	300	600	1000	1600	2000

H: isoniazid, R: rifampicin, S: streptomycin, E: ethambutol, Z: pyrazinamide

POTENTIAL SIDE EFFECTS

Isoniazid
- Skin rash, jaundice, hepatitis, anorexia, nausea, abdominal pain, burning, numbness or tingling sensation in the hands or feet

Rifampicin
- Skin rash, jaundice, hepatitis, anorexia, nausea, abdominal pain, orange or red urine, flu syndrome

Pyrazinamide
- Skin rash, jaundice, hepatitis, anorexia, nausea, abdominal pain & joint pains

Ethambutol
- Visual impairment

Streptomycin
- Skin rash, sensorineural deafness, dizziness (vertigo & nystagmus), renal impairment

Fluoroquinolone
- GI intolerance, headache, malaise, insomnia, restlessness, dizziness, allergic reactions, diarrhoea, photosensitivity

TREATMENT INTERRUPTION

- WHO recommends retreatment: first-line drugs 2 months EHRZS→ 1 month EHRZ→5 months EHR
- Must rule out drug resistance including usage of rapid Drug Sensitivity Test (DST) at retreatment

INTENSIVE PHASE

a) If ≥ 14 days, to restart from the beginning
i.e. Day 1

b) If < 14 days, to continue from the last dose

In either a) or b), the total number of planned doses for the intensive phase should be given

MAINTENANCE PHASE

a) If interruption occurs after >80% of total planned doses, treatment may be stopped if the sputum AFB was –ve at initial presentation. If +ve, treatment should be continued to achieve total number of planned doses

b) If patient receives <80% of total planned doses and interruption lapse is ≥2 months, restart treatment from the beginning

c) If patient receives <80% of total planned doses and interruption lapse is <2 months, continue treatment from date it stops to complete full course

REFERENCES:
1. **Clinical Practise Guideline: Management of Tuberculosis (3rd Edition), November 2012**
2. **Guide to Antimicrobial Therapy in the Adult ICU 2017, Malaysian Society of Intensive Care (MSIC)**
3. **UpToDate, Wolters Kluwer 2011-2021**

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