

Tayside TB Referral Pathway: Initial Diagnosis

Any of the following:

- New Diagnosis
- Likely Diagnosis
- Planned Treatment Start

Any patients not under care of ID/Resp will be allocated a responsible team on referral

Details required

- Patient name and CHI
- Location
- Responsible Consultant
- Weight
- Any renal or liver impairment
- Planned drug regimen and duration

Email details to ID email inbox

tay.id@nhs.scot and
d.connell@nhs.scot

Details will be sent to following teams:

Microbiology Team:

To be made aware about likely diagnosis

Infection Control: to be made aware of any inpatients

Health Protection Team:

Where contact tracing will be initiated.

If DOT agreed, please refer to public health document

Responsible clinician will be asked to print and sign the standard prescription script*

*see separate initiation script and standard continuation script

Patient will be added to next TB MDT:
consider any risks for Enhanced Case Management & Directly Observed Therapy (DOTs)

Antimicrobial Pharmacists:

Interaction/dosing advice if required, add to patient list, facilitate prescription depending on dispensing site

Initial investigations required in all cases:

- Bloods (FBC, liver function tests, U&Es, HIV, Hep B, Hep C)
- Perform eye screening and record this on the dictation template

NOTE: TB Framework for Scotland Key Performance Indicator: diagnosis to treatment within 7 days

Tayside TB Pathway: prescribing information for standard TB prescribing regimens

Please note: this is for reference only and TB prescribing and monitoring is usually performed by specialist services (Infectious Diseases, Respiratory and Antimicrobial Pharmacy teams) but can be prescribed in Primary Care under direction of specialist

If concern regarding a possible TB case, please discuss with ID/Respiratory team

Standard pulmonary TB drug regimen: duration 6 months in total
(2 months 'Initiation Phase' followed by 4 months 'Continuation Phase')
For active TB of the central nervous system: duration 12 months in total
(2 months 'Initiation Phase' followed by 10 months 'Continuation Phase')

For people with active TB of the lymph nodes, do not routinely extend treatment beyond 6 months for newly enlarged lymph nodes of sinus formation, or for residual enlargement of the lymph nodes or sinuses¹

(1): NICE guideline [NG33] Tuberculosis. Published date: January 2016. Last updated: May 2016

Initiation Phase 2 months

Modify the treatment regimen according to drug susceptibility testing

1. Rifampicin
2. Isoniazid
3. Pyrazinamide
4. Ethambutol

Combined as
Rifater +
Ethambutol
or
Voractiv (see
below)

+ Pyridoxine given with any isoniazid containing regimens

STANDARD DAILY DOSES RIFATER:

< 40 kg 3 tabs
40-49 kg 4 tabs
50-64 kg 5 tabs
> 65 kg 6 tabs

+ Ethambutol: 15mg/kg rounded to nearest 100mg
+ Pyridoxine 10mg daily

STANDARD DAILY DOSES VORACTIV:

30-39kg 2 tabs (<30kg d/w pharmacist)
40-54 kg 3 tabs 55-70 kg 4 tabs
71-92 kg 5 tabs
>92kg discuss with pharmacist
+ Pyridoxine 10mg daily

Voractiv can be used in NHST if shortages of Rifater/communication or possible adherence issues where simplified regimen beneficial and agreed by MDT

IF COMBINATION PRODUCTS NOT SUITABLE:

Rifampicin <50kg 450mg daily, > 50kg 600mg daily
+ Isoniazid 300mg daily
+ Pyrazinamide <50kg 1.5g daily, >50kg 2g daily
+ Pyridoxine 10mg daily
+ Ethambutol 15mg/kg rounded to nearest 100mg

Continuation Phase 4 months

Modify the treatment regimen according to drug susceptibility testing.
May require longer duration of treatment depending on site of infection.

1. Rifampicin
2. Isoniazid

Combined as
Rifinah
(see below)

+ Pyridoxine given with any isoniazid containing regimens

STANDARD DAILY DOSES RIFINAH:

≥50kg = RIFINAH 300 X 2 TABLETS DAILY
<50kg = RIFINAH 150 X 3 TABLETS DAILY

*Rifinah - to accommodate pack size it is acceptable for each month supply requested to dispense one original pack (28 day supply)
+ Pyridoxine 10mg daily

IF COMBINATION PRODUCT NOT SUITABLE:

Rifampicin <50kg 450mg daily, > 50kg 600mg daily
+ Isoniazid 300mg daily
+ Pyridoxine 10mg daily

THINK INTERACTIONS!

Please consider drug interactions with anti-tuberculosis medication. There are many interactions with common medications and caution should be taken when starting a patient on anti tuberculosis medication or adding/changing medication when a patient is currently on anti-tuberculosis treatment.

For patients of child bearing potential, check method of contraception – depot medroxyprogesterone acetate (DPMA) and intra-uterine devices (Cu-IUD/LNG-IUS) are not affected by rifampicin. All other hormonal methods of contraception and emergency contraception are affected (including implants) so barrier contraception should be recommended while on rifampicin and for 4 weeks after stopping.

Drug interactions can be checked through:

BNF:

<https://bnf.nice.org.uk/interaction/>

or Stockley's Interaction Checker:

<https://www.medicinescomplete.com/#/interactions/stockley>

Another helpful resource is TB Drug Monographs:

<http://www.tbdrugmonographs.co.uk/>

Antimicrobial Pharmacist email:

Tay.antibioticpharm@nhs.scot

Tayside TB Pathway: Monitoring

Monitoring Considerations:

- All patients LFTs at 2 weeks
- Monitor liver function tests closely if:
 - abnormal LFTs
 - alcohol or drug misuse
- Therapeutic Drug Monitoring (TDM) if concerns re absorption/interactions - d/w pharmacist

Key checks at 2 months:

- Check LFTs at this time
- Are they clinically better?
- Are they smear negative? Sensitivities from reference lab?
- Continuation prescriptions should be prepared in advance if possible, or at follow up appointment (see below for standard continuation script)

Communication with Primary Care and updating clinical records:

Please use Opcomms ('communication to GP form' on clinical portal) when seeing patients and starting/changing medications.

This will be used to update patient's information and GPs/other clinicians and teams.

When using Opcomms please specify what medications have been dispensed/changed and ask that the patients ECS be updated (with stop dates). Please be careful with wording, ensure it is clear if the prescription has been supplied via hospital pharmacy.

When dictating clinical letters for patients diagnosed with TB, please use the example template below, in order to provide more cohesive information for GPs/other clinicians and teams:

Diagnosis :
Estimated treatment duration:

Weight:
Site:
Smear:
Culture:
Sensitivities:
BBV:

TB Treatment

Standard recommended regimen (weight based)		
Initial phase	Start date DD/MM/YY	Rifater plus Ethambutol (2 months) plus pyridoxine
Continuation phase	Start date DD/MM/YY	Rifinah (4 months) plus pyridoxine

Amount of treatment prescribed at this appointment	Next appointment	Required monitoring prior to next appointment
_____ months	DD/MM/YY	

Initial eye screening result Date:	Snellen test: Colour vision discrimination tests:
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Free text

Cc Kirsteen Hill, Antimicrobial Pharmacist and Margaret Ramsay, Senior Specialist

Tayside TB Pathway: Drug induced hepatitis and reintroduction ^(1,2)

**ALT/AST raised but
< 2 X normal**

**Repeat LFTs at 2 weeks:
If levels have fallen, repeat
tests only required if
symptomatic**

**ALT/AST
> 2 X normal**

**Check LFTs weekly for 2
weeks, then every 2 weeks
until normal**

**ALT/AST > 3 X upper limit of normal, in presence of
symptoms
Or
ALT/AST > 5 X upper limit of normal, in the absence of
symptoms**

- **Stop hepatotoxic medication including Isoniazid, Rifampicin and Pyrazinamide**
- **Check/consider hepatitis screen (A, B and C, and if clinically indicated delta and hepatitis E)**
- **As resolution of the hepatitis may be prolonged, consider treating with alternative anti-tuberculosis medications with regular monitoring of LFTs (see next page for alternative medication options).**
- **Once ALT/AST drops to less than 2 X the upper limit of normal and symptoms have significantly improved, first-line anti-tuberculosis medications can be restarted using a re-introduction regimen (see next page for suggested re-introduction regimen).**
- **If the drugs cannot be restarted or the initial reaction was life-threatening, then seek specialist advice regarding an alternative regimen.**

Tayside TB Pathway: Drug induced hepatitis and reintroduction ^(1,2)



PLEASE NOTE:

If isoniazid, rifampicin, and pyrazinamide stopped because of drug-induced hepatitis and the patient is infectious: seek specialist advice and consider treating with ethambutol, streptomycin +/- moxifloxacin or levofloxacin ([link to quinolone warnings](#)) until liver function normalises and isoniazid and rifampicin can be re-introduced. Note: moxifloxacin can cause hepatitis ^{1,2}.

Suggested regimen for the reintroduction of anti-tuberculosis drugs following drug induced hepatitis, in adults ⁽¹⁾

	Isoniazid	Rifampicin	Pyrazinamide
Day 1	100mg	Omit	Omit
Day 2	200mg	Omit	Omit
Day 3	300mg	Omit	Omit
Day 4	300mg	150mg	Omit
Day 5	300mg	300mg	Omit
Day 6	300mg	450mg	Omit
Day 7	300mg	450mg (<50kg) 600mg (≥ 50kg)	Omit
Day 8	300mg	450mg (<50kg) 600mg (≥ 50kg)	250mg
Day 9	300mg	450mg (<50kg) 600mg (≥ 50kg)	500mg
Day 10	300mg	450mg (<50kg) 600mg (≥ 50kg)	1000mg
Day 11	300mg	450mg (<50kg) 600mg (≥ 50kg)	1500mg (<50kg) 2000mg (>50kg)
Day 12	300mg	450mg (<50kg) 600mg (≥ 50kg)	1500mg (<50kg) 2000mg (>50kg)

(1) British Infection Society guidelines for the diagnosis and treatment of tuberculosis of the central nervous system in adults and children. Thwaites G, Fisher M, Hemingway C, Scott G, Solomon T, Innes J; British Infection Society. J Infect. 2009 Sep;59(3):167-87. doi: 10.1016/j.jinf.2009.06.011. Epub 2009 Jul 4. PMID: 19643501

(2) British HIV association. BHIVA guidelines for the management of TB/HIV co-infection in adults 2017. (online) Available from: <https://www.bhiva.org/file/wciyxvzCuTmjD/BHIVA-TB-HIV-co-infection-guidelines-consultation.pdf>.

Tayside TB Pathway: Steroids for CNS TB



CNS TB:

At the start of an anti-TB treatment regimen, offer people with active TB of the central nervous system dexamethasone or prednisolone, initially at a high dose with gradual withdrawal over 4-8 weeks. An example of a suitable regimen is listed in table below (Source: NICE Guidelines) ²

	Stage ^a	
Dose by week	1	2 or 3
Week 1	0.3 mg/kg/day (IV Dexamethasone)	0.4 mg/kg/day (IV Dexamethasone)
Week 2	0.2 mg/kg/day (IV Dexamethasone)	0.3 mg/kg/day (IV Dexamethasone)
Week 3	0.1 mg/kg/day (oral Dexamethasone)	0.2 mg/kg/day (IV Dexamethasone)
Week 4	3 mg/day (oral Dexamethasone)	0.1 mg/kg/day (IV Dexamethasone)
Week 5	2 mg/day (oral Dexamethasone)	4 mg/day (oral Dexamethasone)
Week 6	1 mg/day (oral Dexamethasone)	3 mg/day (oral Dexamethasone)
Week 7	–	2 mg/day (oral Dexamethasone)
Week 8	–	1 mg/day (oral Dexamethasone)

^a According to the modified British Medical Research Council criteria for disease severity:
 Stage 1: Glasgow coma score of 15 without focal neurological deficits; alert and oriented.
 Stage 2: Glasgow coma score of 14–11 or 15 with focal neurological deficits.
 Stage 3: Glasgow coma score of 10 or less, with or without focal neurological deficits.
 Abbreviation: IV, intravenous

(2): NICE guideline [NG33] Tuberculosis. Published date: January 2016 Last updated: May 2016

Developed by: A Wilson, ID Registrar
 Approved by: AMG/TB MDT March 2019
 Updated: April 2023
 Review: April 2026



**OUTPATIENT
PRESCRIPTION**
ANTI-TUBERCULOUS
MEDICATION
INITIATION PHASE

Will be collected from:

Required by:

Clinic attended/charge to:

Name:

CHI Number:

Weight:

Please supply for the patient named above the medicines marked below:

Drug (Score off those not required)	Dose to be taken half an hour before breakfast	Number of MONTHS supply**
RIFATER	tablets DAILY	
ETHAMBUTOL	mg DAILY	
PYRIDOXINE	10mg DAILY	

Prescriber's Signature:

Date:

Bleep:

Pharmacist's Check:

Date:

Dispensed by:

Checked by:

Date:

STANDARD DOSES:

Rifater dose according to body weight

< 40 kg 3 tabs
40-49 kg 4 tabs
50-64 kg 5 tabs
> 65 kg 6 tabs

IF COMBINATION PRODUCT NOT SUITABLE:

Rifampicin <50kg 450mg daily, > 50kg 600mg daily
Pyrazinamide <50kg 1.5g daily, >50kg 2g daily
Isoniazid 300mg daily

Pyridoxine 10mg daily (with all isoniazid preparations)

Ethambutol: 15mg/kg rounded to nearest 100mg

**QUANTITY: suggested 2 month supply



**OUTPATIENT
PRESCRIPTION**
ANTI-TUBERCULOUS
MEDICATION
CONTINUATION PHASE

Will be collected from:

Required by:

Clinic attended/charge to:

Name:

CHI Number:

Weight:

Please supply for the patient named above the medicines marked below:

Drug (Score off those not required)	Dose to be taken half an hour before breakfast	Number of MONTHS supply**
*RIFINAH 300/150 weight > 50kg	TWO tablets DAILY	
*RIFINAH 150/100 weight < 50kg	THREE tablets DAILY	
PYRIDOXINE	10mg DAILY	

Prescriber's Signature:

Date:

Bleep:

Pharmacist's Check:

Date:

Dispensed by:

Checked by:

Date:

STANDARD DOSES:

*Rifinah (Rifampicin/Isoniazid) - to accommodate pack size it is acceptable for each month supply requested to dispense one original pack (28 day supply)

Pyridoxine 10mg daily (with all isoniazid preparations)

IF COMBINATION PRODUCT NOT SUITABLE:

Rifampicin <50kg 450mg daily, > 50kg 600mg daily

Pyrazinamide <50kg 1.5g daily, >50kg 2g daily

Isoniazid 300mg daily

Ethambutol 15mg/kg daily (rounded to nearest 100mg)

****QUANTITY:** suggested 4 months supply