SOUTH AFRICAN ANTIRETROVIRAL TREATMENT GUIDELINES (CHILDREN) 2016

NEED HELP?
Contact the TOLL-FREE National HIV & TB Health Care Worker Hotline
0800 212 506 /021 - 406 6782
Alternatively send an SMS or "Please Call Me" to 071 840 1572
www.mic.uct.ac.za

Eligibility Criteria

Eligible to start ART

All HIV positive children, irrespective of CD4 count or clinical staging

Fast track initiation:	**Immediate priority**:
• HIV stage 4 • CD4 ≤ 350 cells/μL	• CD4 ≤ 350 cells/μL

Social Considerations

The following points are important considerations to make the principle of adherence to treatment probable:

- One identifiable caregiver who is able to supervise the child for administering medication
- Disclosure to another adult living in the same house, to supervise the child's ART when the other caregiver is unavailable
- Treatment of mother/caregiver/other family member is to be encouraged

Regimens

1st line

< 3 years or older children weighing < 10kg	ABC + 3TC + LPV/r	**When children turn 3 years old, they are not routinely changed from LPV/r to EFV. Refer to HIV Hotline for patient-specific cases**
≥ 3 years and ≥ 10kg	ABC + 3TC + EFV	
Adolescents ≥ 15 years AND ≥ 40 kg AND CrCl > 80mL/min	TDF + FTC (or 3TC) + EFV Provided as fixed dose combination (FDC)	Follow adult guidelines
Currently on **d4T**-based regimen	Change d4T to **ABC** if viral load (**VL**) is **undetectable** (< 50 copies/mL) If VL > 1000 copies/mL: Manage as possible treatment failure If VL 50 – 1000 copies/mL: Consult with expert or phone the HIV hotline	
Currently on **ddI** containing regimen	Change ddI to **ABC**, regardless of VL	

2nd line

Failed 1st line Protease Inhibitor (PI)-based regimen

Failed regimen	Action
ABC + 3TC + LPV/r	**Consult with expert for advice and consider resistance testing in patients on LPV/r >12 months and adherent to treatment**
d4T + 3TC + LPV/r	
Unboosted PI-based regimen, while taking rifampicin	

Failed 1st line NNRTI-based regimen

Failed regimen	Action
ABC + 3TC + EFV (or NVP)	AZT + 3TC + LPV/r
d4T + 3TC + EFV (or NVP)	AZT + ABC + LPV/r

3rd line

Failing 2nd line regimen	Should be managed by a Paediatric Infectious Diseases Specialist on the basis of genotype resistance testing. Access to third line ART is managed centrally by the National Department of Health

Monitoring

Baseline

Test	Purpose	Interpretation/Action
Height, weight, head circumference and development	To monitor growth and developmental stage	Use the "Road to Health" chart as tool Failure to maintain growth = progressive HIV infection or superimposed TB – investigate further and refer patient Flattening of curve measuring head circumference = possible encephalopathy – investigate and refer
Verify HIV status	To ensure that national testing algorithm has been followed	Follow testing algorithm as per guidelines and document HIV status clearly
Screen for TB symptoms	To identify TB/HIV co-infection	Suspect TB in patients with the following symptoms: coughing, night sweats, unexplained weight loss, then confirm or exclude TB
WHO Clinical staging	To determine eligibility for ART	Children 5 – 15 years with WHO stage 3 or 4: Start ART
CD4 count	To do a baseline and to determine eligibility for ART in children aged 5 –15 years	Children < 5 years: Do not wait for CD4 before initiating ART Children aged 5 – 15 years: CD4 ≤ 500 cells/μL: Start ART CD4 > 500 cells/μL: Repeat CD4 every 6 months, until patient is eligible for ART
Hb or FBC	To detect anaemia or neutropenia	If Hb < 8, start ART and refer patient for management of anaemia

Include the following baseline tests if patient is starting the specific drug

Drug	Test	Purpose
LPV/r	Cholesterol and triglycerides	Baseline assessment
TB Treatment or jaundiced	ALT	To assess for liver dysfunction

Follow-Up Testing In Patients On ART

At every visit:
• Height, weight, head circumference (<2 years) and development • Clinical assessment • Ask about side-effects • TB Screen

Test and frequency	Action/Interpretation
CD4 count At 1 year on ART, and annually if clinically indicated	Stop co-trimoxazole once ART-associated immune reconstitution has occurred for ≥ 6 months, i.e. CD4 count is as follows on TWO consecutive occasions 3 to 6 months apart: **1 - 5 years:** CD4 ≥ 500 cells/μL or ≥ 25% **≥ 5 years:** CD4 ≥ 350 cells/μL HIV-positive infants < 12 months should remain on co-trimoxazole prophylaxis
VL Month 6, 12 and then annually	**VL copies/ml** / **Response** > 1000: Begin step-up adherence package; Repeat VL after 2-3 months; If VL still > 1000 despite good adherence and child on **NNRTI** regimen: discuss with expert about switching to second line; If VL still > 1000 despite good adherence and child is on **PI-based** regimen: reinforce adherence and discuss with expert 50 – 1000: Begin step-up adherence; Repeat VL in 6 months < 50: Repeat VL annually; and routine adherence support. Patient is doing well

Do the following tests if the patient is on the drug that may cause the adverse event

Drug	Test	Frequency	Action/Interpretation
AZT	Hb or FBC	Month 1,2,3 and then annually	Hb > 8 g/dL: Continue AZT Hb ≤ 8 g/dL: Use alternative – consult with expert
LPV/r	Cholesterol + Triglycerides (TG)	Annually	Consult with specialist if a significant difference is noted from patient's previous lipid profile
TB treatment or jaundiced or rash develops (on EFV or NVP)	ALT	Only if patient is jaundiced or on TB treatment, or rash develops	Consult with expert for advice, or phone the HIV Hotline

Date published: November 2015
Second edition: November 2016

Children With Concomitant Tuberculosis

Children taking ART and TB treatment together will have to tolerate a large number of pills. Intensify adherence support. Always review suppression if on ART more than 6 months

Current ART regimen	Recommendations	
EFV-based regimen	No dose adjustments or changes in ART regimen and standard dose TB treatment should be added	
LPV/r-based regimen	**AND** receiving a **rifampicin**-containing TB regimen: Additional **ritonavir** should be added according to the paediatric dosing chart. TB treatment should be dosed at standard doses	
NVP-based regimen	≥ 3 years OR ≥ 10kg	Switch NVP to **EFV**
	< 3 years OR < 10kg	Consult with expert or the HIV hotline

Isoniazid Preventive Therapy

IPT is indicated for HIV-positive children with a direct TB contact (someone with TB who resides with the child), after active TB has been excluded in the child with symptom screening (symptoms include: coughing, night sweats, unexplained weight loss, persistent fever of more than two weeks, poor weight gain, fatigue)

Dose: Isoniazid (INH) 10mg/kg/day for 6 months (max dose: 300mg daily)

Crush appropriate fraction of the 100mg INH tablet and dissolve in water or multivitamin syrup before giving it to the child

Add pyridoxine (Vitamin B6) 25mg daily in children > 5 years, or 12.5mg daily in children < 5 years for duration of IPT

Practical Advice For Administration of ARVs

- It is important to check regularly that children receive the correct dose, based on their weight
- In older children or adolescents ensure that maximum doses are not exceeded

ARV	Advice
Abacavir (ABC)	Advise caregivers about the potential hypersentivity reaction: If patient on ABC develops fever, rash, gastrointestinal and respiratory symptoms, the patient should be taken to the hospital. In patients who have had a hypersensitivity reaction, ABC would be stopped and never rechallenged. All tablet formulations, except the 60 mg tablet, must be swallowed whole and NOT chewed, divided or crushed
Efavirenz (EFV)	Tablets must not be chewed, divided or crushed; swallow whole with or without food e.g. yoghurt or banana. Capsules may be opened and powder contents dispersed in water or mixed with a small amount of food (e.g. yoghurt) to disguise peppery taste. Ingest immediately. Food, especially high-fat meals, increases absorption. Best given at bedtime to reduce CNS side effects, especially during first 2 weeks
Lamivudine (3TC)	No food restrictions, oral solution may be stored at room temperature. Tablets are scored and can be easily divided; may be crushed and mixed with a small amount of water or food and ingested immediately
Lopinavir/ ritonavir (LPV/r) Aluvia® OR Kaletra®	Dose is calculated on lopinavir component. Solution is best taken with food as it increases absorption. If there is no food, then the patient can take the medicine without food. Solution should be refrigerated. If no fridge is available, it can be stored at room temperature of 25ºC for 6 weeks. Techniques to increase tolerance & palatability: coat mouth with peanut butter, dull taste buds with ice, follow dose with sweet foods. Tablets must not be chewed, divided or crushed; swallow whole with or without food. Many drug interactions
Nevirapine (NVP)	Once-daily dosing during the first 2 weeks of treatment reduces frequency of rash. If a mild rash occurs during the induction period, continue once daily dosing and only escalate dose to twice daily once the rash has subsided and the dose is well tolerated. NVP should be permanently discontinued and not restarted in children who develop severe rash, especially if accompanied by fever, blistering or mucosal ulceration. No food restrictions. Tablets can be crushed and mixed with a small amount of water or food and immediately ingested. Avoid NVP if rifampicin is being co-administered. Consider drug-drug interactions
Ritonavir (RTV)	Only recommended use at present is as a booster for lopinavir/ritonavir when coadministered with rifampicin-containing TB treatment. Should be taken with food. May be stored at room temperature, limited shelf life of 6 months. May need to use techniques described for Kaletra® to improve tolerance of bitter taste
Stavudine (d4T)	Capsules may be opened and powder contents dispersed in water (stable in solution for 24 hours) or mixed with a small amount of food (e.g. yoghurt)
Zidovudine (AZT)	No food restrictions and oral solution may be stored at room temperature. Capsules may be opened and powder contents dispersed in water or mixed with a small amount of food (e.g. yoghurt) and immediately ingested. Currently available tablets are not scored. Use with caution in children with anaemia, due to potential for bone marrow suppression

Based on the National Consolidated Guidelines for the Prevention of Mother-to-Child Transmission of HIV (PMTCT) and the Management of HIV in Children, Adolescents and Adults. National Department of Health, South Africa. April 2015. Updated November 2016 to incorporate the National Test and Treat protocol implemented by NDoH, Sep 2016.