

HIV Paediatric case 8 – Masha



This is Masha; she is 7 years old, the youngest of five children.

She was brought into the hospital four days ago as an emergency. She was semi-conscious, with convulsions, neck stiffness and high fever. She has been lucky to survive. Masha has only just now tested HIV positive...but she should have been tested a long time ago.....

HISTORY

Masha's mother was not tested for HIV during pregnancy. Masha was breastfed for the first two years. She was also taken to the health centre on a regular basis for check-ups when she was weighed. The results were recorded but not put onto a growth chart. This is what the chart would have looked like if it had been filled out. Masha grew well for the first ten months. But then there were periods when she started to lose weight and become sick...

When she was almost two years old, Masha was admitted to hospital with malaria. She was admitted again with both Malaria and Pneumonia six months later. By now she was underweight. However she did slowly recover. Again when she was four Masha became sick. She had multiple abscesses on her legs and she started to lose weight. She still has the scars from these abscesses today. At this point her mother had never had an HIV test and did not know her status. So Masha was also not tested either.

Then two years ago Masha's mother became very sick with weight loss and oral candidiasis. She tested HIV positive at a health centre. It was only now that she found out that Masha's father had tested HIV positive eight years ago, shortly before Masha was born.

STOP POINT

HISTORY:

Two years ago at a health centre:

- Masha's mother tested HIV positive
- Oral candidiasis and weight loss.

WHAT SHOULD HAVE HAPPENED THEN?

The mother should have been started on ART. She had a WHO stage 3 condition (persistent oral candidiasis and weight loss of more than 10% are both stage 3). All of the children should have been tested, including Masha. If the father was positive before Masha was born and the mother had no PMTCT, then Masha is very likely to be HIV positive – especially given her history of poor health. It shows the importance of following up the rest of a family if one member of the family tests HIV positive.



When Masha was 5, her mother was started on ART. Since then she's had no problems with side effects and she's had good adherence. However Masha was not given an HIV test, even though she continued to be brought into the health centre over the coming year to have her height and weight checked. This is now a BMI chart. It shows Masha continued to grow until about a month ago. Then she started to lose weight rapidly.

3 days ago, now aged seven, Masha was admitted to hospital. On admission she was only semi-conscious and was having convulsions. She had a stiff neck and was acutely anaemic. For several days beforehand she had been complaining of fever, cough and headaches. She tested positive for Malaria. A lumbar puncture also suggested she had meningitis. On admission this time she was finally given an HIV test which came back as positive. Her CD4 count was 773.

STOP POINT

HISTORY ON ADMISSION:

3 days ago: Masha admitted with malaria, meningitis, anaemia and cough.

HB: 6.1.

Masha tested HIV positive.

CD4: 773

WHAT ELSE DO YOU NEED TO LOOK FOR IN A PHYSICAL EXAMINATION?

WHAT OTHER QUESTIONS WOULD YOU ASK?

WHAT OTHER TESTS WOULD YOU ORDER?

- 1) Need to look for any other signs of HIV related opportunistic infections, candida and otitis in particular. Also should try to rule out TB. TB can be a cause of meningitis. She also has a cough and weight loss. Look for swollen lymph nodes on her body.
- 2) Ask if she has been having night sweats. How long has the cough been going on for. Any diarrhoea?
- 3) X-ray to try to confirm TB. Sputum tests or other TB diagnostic if possible.

▶ *Three days after admission, Masha is now on the ward. She is conscious and much better. She has been treated for both malaria and bacterial meningitis. The convulsions, headache, fever and neck stiffness are all resolved. But she still has swollen lymph glands on her neck. And the lymph nodes under her arms are also swollen. She still has a cough. There are some areas of dull concussion and some noisy breathing through the stethoscope. There are no signs of oral sores. Her spleen is enlarged. The lymph nodes in her groin are also swollen. Indeed they are big enough to see them.*

Her mother is asked if Masha has been having night sweats or fever – and she replies that she has – for at least the last month. Masha’s mother, on the other hand, does not have a cough or any other symptoms of TB. A Chest X-ray is ordered for Masha.....

STOP POINT

ART REVIEW:

3 days ago: Masha admitted with malaria, meningitis, anaemia and cough.

Masha tested HIV positive.

HB: 6.1. CD4: 773

Weight loss – 19kg to 17kg in one month

Swollen spleen and lymph nodes all over her body.

Cough.

WHAT WOULD YOU DO REGARDING MASHA’S HIV INFECTION?

WOULD YOU START TB TREATMENT?

1) She needs to be initiated on ART. The weight loss and the meningitis – which could have been bacterial or could have been caused by TB – are both WHO stage three conditions. But she is also eligible by age. She still has a healthy CD4 count – but clinically she is showing signs of advanced HIV disease.

2) The diagnosis is not 100% clear in the absence of more accurate tests. But if TB treatment is not now started, Masha needs to be monitored closely in coming weeks. If she continues to fail to thrive on ART, or if the cough does not clear up and the night sweats continue, then she should be started on TB treatment.

▶ *Because of the meningitis, which is a severe bacterial infection, Masha is judged to have had a WHO stage 3 condition and so she is started on ART. At this point Masha was not put onto TB treatment. She is given antibiotics for a chest infection. But a follow up appointment was made for two weeks time.*

STOP POINT

ART Review

3 days ago: Masha admitted with malaria, meningitis, anaemia and cough.

Masha tested HIV positive.

HB: 6.1. CD4: 773

Weight loss – 19kg to 17kg in one month

Swollen spleen and lymph nodes all over her body.

Initiated on Start regimen containing AZT. Co-trimoxazole prophylaxis started.

**ON ADMISSION MASHA WAS ANAEMIC. WOULD YOU HAVE STARTED HER ON THIS REGIMEN?
 WHAT ELSE NEEDS TO BE DONE?
 WHAT WOULD YOU WANT TO CHECK AT A FOLLOW UP TWO WEEKS LATER?**

1) Guidelines vary in different countries. AZT does lead to side effects of Anaemia in adults. So in many countries alternative first line treatment is recommended for anaemic children (Hb below 8 mg/dl). But a large randomized, controlled trial done in Uganda and Zimbabwe (the Arrow Trial) suggested that AZT does not cause anaemia in children. Using AZT allows children more treatment options over the long term and makes them less vulnerable to stockouts of less available ARVs. Masha was severely anaemic before testing HIV positive so certainly it has not been caused by a drug reaction. It is likely to be as a result of the Malaria.

2) HIV status of Masha's siblings needs to be checked.

3) Check:

- How has her adherence been?
- Any side effects?
- Does she know about HIV? Disclosure?
- Weight. Has she been putting on any weight since starting ART?
- Check for TB. Fevers? Cough?
- Hb check. Is she still anaemic? Should her ART regimen be changed to take her off AZT?

TWO WEEKS LATER....



A fortnight later and Masha looks quite a bit better. She is going to school again. However her weight is the same as at discharge. An HB test shows that she is no longer severely anemic and she has reported no side effects to the ARVs.

(HB: 9.7 mg/dl)

But her mother says that she is continuing to have some night sweats and she still has a cough. So another look was taken at her x-ray.

STOP POINT

**WOULD YOU START HER ON TB TREATMENT?
 WHAT ELSE COULD HAVE BEEN DONE AT THIS VISIT ?**

1) Cough that does not respond to anti-biotics, unexplained fevers and night sweats, weight loss that has not reversed after three weeks on a feeding programme. Would all amount to a good argument for putting her on TB treatment.

2) Sputum test for the mother to rule out TB. Follow up rest of the family both for TB and HIV. Disclosure not yet done. Start to talk about disclosure...




Masha was started on TB treatment. Her mother is told that the rest of the family needs to be checked for TB as well.

STOP POINT

WHAT MEDICATION WOULD YOU USE TO TREAT TB? WOULD HER ARVS ALSO NEED ALTERING?

Answers will depend on national guidelines and vary from country to country. Be aware that some TB medicines interact with ARVs and doses need to be altered.

3 MONTHS LATER...

 *It's now three months later and Masha has come for a follow up. She looks healthy and active. Her notes show that she has had no side effects to either ART or TB treatment. Her cough has improved and she is no longer having night sweats. The anaemia has also improved.*

Hb: 10,9 today

Over the last three months she has been growing well. She has grown by one centimetre and has put on three kilos in weight, giving her a healthy BMI....

A closer look on her finger nails, shows a painless discoloration – a darker brown colour. The skin specialist explains that this is a sign of a chronic infection; in Masha's case the TB could have been responsible. She also has a fine rash on her head, which is hard to see as it is under her hair. It is itchy.


STOP POINT

WOULD YOU BE WORRIED ABOUT A DRUG REACTION?

This is unlikely to be a side effect. It is four months after the start of treatment and is itchy. No problems with eyes or other mucus membranes.

The rash is diagnosed as Tinea Capitis. And treatment is given.

3 MONTHS LATER (7 MONTHS AFTER INITIATION ON ART)

 *Another three months later, and Masha is back for another follow-up. She says she feels well and her fingernails look better now. 1 month ago she finished the TB treatment.*


Her health passport shows an adherence of 83% - calculated from pill counts over the last two months. A routine viral load test is taken. This shows undetectable levels of the virus.

STOP POINT

Adherence over two months: 83 percent based on pill count
Viral load: Undetectable

HOW DO YOU INTERPRET THE VIRAL LOAD RESULT? WHAT WOULD YOU DO?


- The most logical possibility is that she was non adherent at the start of the two month period and missed some doses then, but has improved since. However VL is a blunt instrument for monitoring adherence and can show undetectable when in fact adherence problems are starting.
- Adherence counselling. Ask for challenges the mother faces to give the ARVs.

 *Masha's weight is stable at 20kg. But her height has been increasing quite fast. BMI has been going down..... This trend continues over the next three months. Her adherence, based on the pill count has now got much better. It has gone up to 98%.*

STOP POINT

HER BMI IS FALLING? WOULD YOU BE CONCERNED?

Probably not, but should be monitored. Her weight is stable at 20kg and she is growing very fast. It appears to be a growing spurt where she is gaining height. This makes her BMI go down (kg/m²). BMI charts are more complicated to interpret than weight only charts.

 *Masha is now almost eight years old. Healthwise, since starting ART nine months ago, she is doing very well. She is an inquisitive child – and is starting to ask why she has to take the medicines. Disclosure hasn't been done yet. It is important that it is the mother who does this so as not to undermine trust. Her mother is advised she should start to slowly to explain to Masha about her status.*


FOUR MONTHS LATER (ONE YEAR AND ONE MONTH AFTER ART INITIATION)

It is four months later and more than a year now since Masha started ART. Today she has come in with a rash on her face and other parts of her body. It is Itchy, especially at night and she has been scratching.

STOP POINT

WOULD YOU SUSPECT A DRUG REACTION? WHAT WOULD YOU DO?

No this does not look like a drug reaction - certainly not SJS.

 *The rash is judged not to be a drug reaction and is treated with an ointment. When her pills are counted, her adherence for the last month is now 100 percent. This reflects in her growth. She has gone up another two centimetres in the last four months. And she has put on three kilos in weight. So now her growth chart shows her to have caught back up to roughly where she should be for her age.*

If Masha continues to take her medicines this well, there is no reason why she should not continue to thrive.