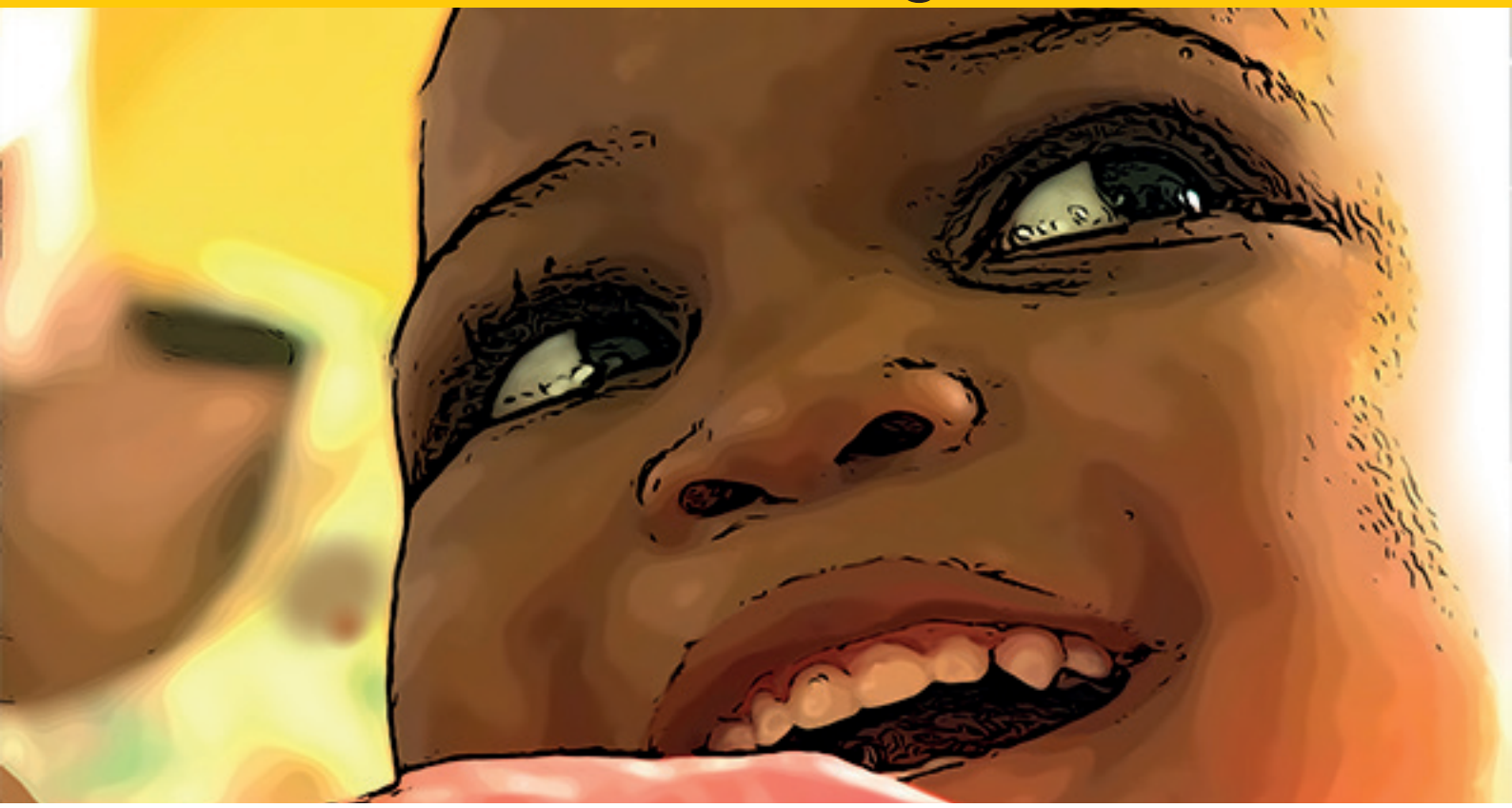
HIV Paediatric case 4 – Wongani



This is Wongani. He is 22 months old. He has been brought into hospital by his grandmother, with very severe swelling of his limbs and a rash. His mother is still at home because she has just had another baby....

STOP POINT

WHAT IS WONGANI SUFFERING FROM?

He is severely malnourished with Kwashiorkor. He has both oedema and a rash.

HISTORY:

According to their health records , Wongani's mother tested HIV positive when she was two months pregnant with Wongani. She started ART at that time. The grandmother says that Wongani was not given Nevirapine syrup for his first weeks. Certainly there is no record of it in his health passport. He was breastfed until he was one year old, but then stopped.

STOP POINT

WHAT WAS WONGANI'S HIV STATUS AT BIRTH?

Wongani was exposed.

Since birth Wongani has been frequently sick. He was admitted with malnutrition to a local hospital at five months old. He has been admitted three more times since then. Unfortunately, the growth chart in his health passport has not been filled out. The grandmother does not have the previous local hospital records where presumably his weight and height were recorded. So the first note for his weight in his health passport was only from a month ago when he was taken to a health centre and diagnosed with sepsis. At this point he weighed ten kilos. Here he was finally given an HIV test which came back as positive.

STOP POINT

WHEN AND HOW SHOULD WONGANI HAVE BEEN TESTED FOR HIV?
IS THE TEST DONE AT 21 MONTHS DEFINITIVE?
SHOULD WONGANI HAVE STARTED ART? IF SO, WHICH REGIMEN?

1) He should have been treated as an exposed baby when he was born. There is no record of NVP syrup, which should have been given. He then should have had a HIV-PCR at six weeks. Given his long history of illness, he should definitely have been tested earlier, even if only a rapid test was available. With a positive rapid test and weight loss he would have qualified to start ART.

Yes it should be definitive. By 18 months the mother's anti-bodies should not be present. However it is possible for there to be false positives with rapid tests. But given how sick he is with a long history of illness, it is very strong evidence that he is HIV positive.

Yes he should have started ART on the starter regimen for infants.

At the health centre, Wongani was initiated on ART. Two weeks later he was admitted to the local hospital having lost a kilo in weight. He had fever, diarrhea and vomiting. He was treated with antibiotics for possible sepsis or gastroenteritis. He tested negative for Malaria. But he was found to be acutely anemic.

STOP POINT

HISTORY:

- One month ago: Wongani tested HIV positive. Initiated on ART:
- Infant regimen + Co-trimoxazole.
- Two weeks ago: Admitted to local hospital with fever, diarrhoea, vomiting.
- Hb: 4 g/dl
- Malaria negative.

WOULD YOU HAVE CHANGED TO A DIFFERENT COMBINATION OF ARVS?

AZT AND ANAEMIA: This depends if he was started on a regimen with AZT. Most guidelines stipulate that children with Hb of under 8 g/dl should not be started on AZT. So this should have been checked before initiation. However recent research has cast doubt on this. It is known that adults can become anaemic as a side effect of AZT. So it was assumed that the same would happen in children. However, the ARROW trial, which was a randomized controlled clinical trial carried out over five years in Uganda and Zimbabwe, found no increase in anaemia amongst children on AZT. Switching unnecessarily reduces treatment options in children, who will have to take ART for life. So this is an area of debate. With Wongani, his low Hb is a life threatening condition, just two weeks after initiating ART. If he is on an AZT regimen then switching to an alternative would be a precaution in case it is contributing to his anaemia.

ON ADMISSION TO THE CENTRAL HOSPITAL: AGE 22 MONTHS

Now Wongani has been referred to the central hospital, because he has not improved. His legs have been swelling up and the diarrhoea and vomiting have continued.

The oedema started in his feet. In the two weeks since it started it has moved up his legs. His hands are very swollen. And his eyelids are puffy. He also has light coloured hair. He has a cough. His conjunctiva are pale, suggesting that there's is still anaemia. Inside his mouth there are oral sores. He does not have a fever.

His weight, height and upper arm measurements confirm that he is still severely malnourished. The rash is all over his body, with the skin peeling in a number of places…

STOP POINT

EXAMINATION ON ADMISSION TO HOSPITAL

Diarrhoea and vomiting
Oedema: +++
Rash
Tests done:
Hb: 5,1 g/dl
CD4: 1181
Weight: 10,2 kgs **Target weight: 11,3 kgs?**
Height: 84 cm
MUAC: 12,6 cm

Infant regimen + co-trimoxazole. Initiated a month ago.

WOULD YOU BE WORRIED ABOUT A DRUG REACTION?

This should be a question that is asked - given that the rash started a couple of weeks ago and he stared ART and Co-trimoxazole a month ago. However, it does not look like Stephens Johnston Syndrome rash in that it has not affected the eyes, nose or the mouth. This can be very clearly seen from the pictures. Also the rash looks very like the typical rash to accompany Kwashiorkor malnutrition.

Although his chest does not sound noisy he has a cough. Wongani is given a chest x-ray to assess for TB

STOP POINT

WHAT WOULD BE YOUR DIFFERENTIAL DIAGNOSIS?

Diagnosis made: Severe anemia caused by kwashiorkor malnutrition and immuno suppression.

Discussion on TB. The main worry is the cough. The x-ray shows infiltrations in the lungs. He either has a chest infection or he has TB. A course of anti-biotics could be tried to see if it will clear the chest up. If not then he should be re-assessed for TB.

The Kwashiorkor, caused by lack of protein, has come on in the weeks following initiation of ART. This is relatively common in malnourished HIV positive children, who are started on ARVs, suggesting that it could be some kind of immune reaction. Wongani needs very careful management. He is initially treated with antibiotics to see if that will clear his chest. If this does not work a further TB assessment will be done.

He is given a blood transfusion and put onto a feeding program for Kwashiorkor. Because his immunity is suppressed both by HIV and Kwashiorkor, Wongani is very vulnerable to infection. He is given treatment for candida. His ARVs are switched because of the anaemia.

STOP POINT

WOULD YOU HAVE SWITCHED ARVS BECAUSE OF ANEMIA?
HOW WOULD YOU TREAT THE ORAL SORES AND PEELING SKIN?

1) Discussion on anaemia as above...although note that his anaemia has improved over the last two weeks despite no blood transfusion. However, his Hb is still dangerously low.

2) Oral candida with nystatin and peeling skin needs a topical anti-septic. But needs to be checked regularly if they are getting infected, in which case he may need anti-biotics or iv anti-biotics. An infection through his open sores would be very serious now.

A WEEK LATER:

Wongani is much better than a week ago. The diarrhea and vomiting have stopped. His anemia has improved slightly. He still has some oedema, but it is going down. He is able to sit, take some steps with help and communicate.

13 DAYS AFTER ADMISSION:

Wongani is being discharged from the hospital today. His oedema is almost completely better and his skin condition has improved. But he still has oral sores and he weighs 9.5 kilos. This is slightly less than on admission and well below the target weight of 11.3 kg. A follow up appointment is set for two weeks time.

STOP POINT

WOULD YOU DISCHARGE NOW?
WHAT WOULD YOU WANT TO CHECK AT THE FOLLOW UP?

1) The one piece of missing information is his cough. Has his chest cleared up. He is looking much better. But he was supposed to be reassessed for TB. If this is better then he could be discharged, with a follow up to reassess for TB. As TB is a long and sometimes slow infection which can improve and get worse again, it needs to be continually reassessed.

Wongani needs to continue a feeding program at a close health centre if he is discharged.

2) At the follow up need to look for:

- Side effects to new ART regimen (without AZT)
- Adherence
- Weight, MUAC
- Oedema
- Oral sores
- Cough and reassess for TB
- Skin
- Anaemia

TWO WEEKS LATER – FOLLOW UP:

Wongani has once again been brought by his grandmother. He looks much better and is able to walk on his own now.

His cough is better but the oedema has not disappeared completely.
There are no signs of sores inside his mouths. But there is an itchy rash which has appeared on his left thigh. He has had it for about 2 weeks now.

STOP POINT.

WOULD YOU BE WORRIED THE RASH MIGHT BE A DRUG REACTION?

It does not look like a drug reaction. The eyes, mouth and nose are completely clear. It looks like dermatitis. At a health centre a clinician should look to see. If it is only dermatitis then he should not be switched, but it should be monitored and the mother warned to come back if it gets any worse.

Wongani is given calamine lotion for the rash. Although he looks much better his nutritional assessment is almost identical to 2 weeks ago. His weight is the same. His upper arm measurement has improved very slightly.

STOP POINT

IS THIS SUFFICIENT PROGRESS?

This could be that the resolution of the oedema is masking a real growth in weight. However it needs to be monitored, because he is still a suspect for TB. If the cough recurs at all or he still does not put on weight, then he should be reassessed. He should put on weight well during the first months after starting ART. The fact that the upper arm measurement has improved is encouraging.

Check that the mother and baby sister are being treated.

The grandmother says that Wongani's baby sister, now five weeks old, is well and is being seen at the health centre.

STOP POINT

WHICH ADVICE WOULD YOU GIVE TO WONGANI'S MOTHER CONCERNING THE NEWBORN BABY?

- NVP until age 6 weeks, afterwards start CPT prophylaxis
- 1st DNA-PCR at age 6 weeks
- Feeding-advice: Exclusive breastfeeding until baby reaches age 6 months, then Complementary feeding (=breast milk + other foods) until age 24 months.

7 MONTHS LATER:

Wongani is looking much better now. He no longer has a cough. He has had no night sweats or other signs of TB. The oral sores and oedema have cleared up and the anaemia is also better. His upper arm measurement is 16.4 CM and his height is 87 cm. Wongani is no longer receiving supplementary feeding. His weight has gone up to 13.8 kilos.

This means that he has gained 4 kilos over the last seven months. He has gone from being severely malnourished to having a healthy weight for his age.

WONGANI
COMPARISON OVER 8 MONTHS ON ART

These are pictures, once again, of when Wongani was first admitted to hospital eight months ago. He was extremely sick, just after starting ART. But with a feeding program and treatment for the opportunistic infections, he pulled through. When children first start on ART it can be a very critical period. But if they can be helped through it, they then do very well. Today Wongani's grandmother says he is back at nursery school where he enjoys playing and learning. As long as he keeps taking his ARVs there is no reason why he should not grow up to have an active and healthy life.

DISCUSSION:
SUPPLEMENTARY QUESTION ON SISTER…
Wongani's baby sister finished the nevirapine syrup and started taking Co-timoxazole prophylaxis. She was given a HIV-PCR test soon after stopping nevirapine, but unfortunately the result was never reached the health centre from the central laboratory.

WHAT WOULD YOU DO TO CHECK THE HIV STATUS OF THE BABY NOW?

- Repeat HIV-PCR test
- If no signs of PSHD – rapid test for sister at age 12 months.
- If you did a rapid test now, what conclusions could you draw if it came out negative?
- If you did a rapid test now, what conclusions could you draw if it came out positive?
- Could do a rapid test now. If it is negative – then that is a good indication that the baby is not infected at the moment. If the baby is positive – then need to watch very carefully over the coming months to see whether really is infected and whether needs to start ART. The baby if it is infected could become sick and die very quickly.