



# HIV Paediatric case 11 – Gertrude



 *This is Gertrude. She is five and a half years old. She goes to nursery school. She has come to the clinic with a fever, a cough and general body swelling which started two weeks ago.*

## **HISTORY:**

 *Gertrude's mother tested HIV negative during her pregnancy six years ago and she has not been tested since. So Gertrude was not given any preventative treatment when she was born. She was breastfed for her first two years. Indeed since then she has never had an HIV test. Gertrude's father became sick and died three months ago.*

## **STOP POINT**

### **HISTORY GERTRUDE (5 YEARS, 6 MONTHS)**

**Mother tested HIV -ve during pregnancy. Gertrude was breastfed.  
Gertrude has never been tested for HIV.  
Father died three months ago of illness.**

**WHAT CAN YOU SAY ABOUT GERTRUDE'S HIV STATUS?**

**WHAT OTHER QUESTIONS WOULD YOU ASK?**

**WHAT WOULD YOU LOOK FOR IN A PHYSICAL EXAMINATION?**

**WHAT TESTS WOULD YOU ORDER?**

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1) Her status is unknown. She clearly has clinical signs of advanced HIV disease. She could be HIV positive despite the fact that her mother tested negative during pregnancy. (The rapid test is an anti-body test, and so will not come out positive in the first months after infection. Recent infection is also the time that levels of the virus are highest in the body, and can be most easily passed on to others. So the fact that her mother tested negative during pregnancy, is not definitive. She could have been recently infected.) Her father's recent death could certainly be from HIV.

2) Need to ask about other possible symptoms, diarrhoea, vomiting, find out how long the fever and cough have been going on for.

3) Do a full nutritional assessment. How long has she been losing weight? Assess the severity of the oedema. Need to look for any signs of other opportunistic infections which could be HIV related. Anemia? Ears? Candida?

4) Tests: Malaria; blood count; urine test; HIV; CD4 if positive.

### PHYSICAL EXAMINATION:



*The physical examination shows she has very severe swelling, which starts at her feet and goes up to the face. The rash is making her skin peel in a few places and there are open sores where she has been scratching. The mother says there have been discharges from both ears for the last two months. The chest sounds very abnormal. There is clearly fluid on the lungs. There is no sign of sores or candidiasis in the mouth. Gertrude is given an HIV rapid test – which comes out as positive.*

### STOP POINT

**WEIGHT: 16,7KGS**  
**HEIGHT: 97 CM,**  
**MUAC: 15,2CM OEDEMA: +++**

#### LAB TEST RESULTS:

**MALARIA: POSITIVE**

**URINE ANALYSIS: NORMAL**

**HIV TEST: POSITIVE**

**Hb 8,9 g/dL**

**CD4: 1266**

**CHEST X-RAY – UNCLEAR PICTURE BECAUSE SHE WAS UNABLE TO SIT UP FOR THE PICTURE TO BE TAKEN.**

**WHAT IS YOUR DIFFERENTIAL DIAGNOSIS?**

**IS THE RAPID HIV TEST RESULT DEFINITIVE?**

**IS SHE ELIGIBLE TO START ART? IF SO WHICH REGIMEN?**

**WOULD YOU START STRAIGHT AWAY?**

**WHAT ABOUT TB?**

**HOW DO YOU EXPLAIN THE RASH?**

- 1) Diagnosis: Kwashiorkor malnutrition, otitis media and pneumonia.  
Rule out: Nephrotic Syndrome. She has a CD4 of 1266 which is high. Rule out TB
- 2) Yes the rapid test is definitive.
- 3) She has WHO Stage 4 because of the severe wasting and pneumonia. But she is eligible to start ART straight away because of her age anyway. Regimen will vary from country to country.
- 4) If a decision is made to start TB treatment then there may need to be a delay to starting ART. Local guidelines need to be followed when initiating both and some regimens interact so this needs to be checked. However if decided to wait and assess over time for TB then ART can be started straight away.
- 5) Before starting TB treatment, could treat chest infection with antibiotics to see if the cough clears up. If it does not then do further assessment for TB.
- 6) The skin rash is consistent with Kwashiorkor. The open wounds are possibly the biggest threat she faces. If these get infected it will be very serious. She needs anti-biotics and good nursing care.



*Gertrude has all the clinical signs of advanced HIV disease, which has been diagnosed very late. To complicate matters, the Kwashiorkor malnutrition, caused by lack of protein, also affects the immune system – making her very vulnerable to opportunistic infections. To recover she needs treatment for these. A careful watch needs to be made for signs of oral candida, as this often contributes to malnutrition. But in her present condition, the greatest threat comes from the open patches where she has lost skin. Finally she needs a careful and well implemented feeding plan with gradual increases in protein.*

### **THREE DAYS LATER.....**

*Three days later, Gertrude is not getting better. Her ear infection has improved slightly as there is less fluid. But the oedema is still very severe. And the rash has got much worse. Large areas of her skin are now peeling off. It almost looks like severe burns.*

*Gertrude is now being reviewed at the ART clinic. But a decision needs to be made whether to start TB treatment first before ARV's. This is her x-ray. She still has a cough.*


*It is decided to not put her on TB treatment straight away, but to see if the antibiotics work. In the meantime her mother collects Gertrude's ARVs and then goes for a counselling session....*

## **STOP POINT**

### **WHAT ELSE NEEDS TO BE DONE?**

The mother needs an HIV test. Her father is no longer alive. But are there other children? All of them need to be screened for TB.

Rash looks a bit like drug reaction. Rule this out. But it started before she was put on co-trimoxazole or Nevirapine.

 *Gertrude's mother has also been tested for HIV for the first time and is found to be HIV positive. She has two older children who are 9 and 11 years old. She says they are both healthy.*

## STOP POINT

**Gertrude's mother has no symptoms associated with HIV infection.**

**WHAT WHO STAGE IS THE MOTHER?**

**WOULD YOU START HER ON ART?**


**DO THE TWO BROTHERS NEED TO BE TESTED?**

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1) Clinically the mother is in stage 1 – asymptomatic.

2) She is not pregnant or breast feeding so she needs counselling and to be enrolled in pre-ART care and given a CD4 count. The CD4 test would determine whether she needs to start ART or not. It is very common for people with no symptoms to actually have very low CD4s so she may need to start treatment. In countries rolling out test and treat she would be eligible to start ART straight away.

3) Both the boys need HIV tests. They could both be positive.

 *Gertrude goes back to the ward for malnourished children where further blood tests are taken to check for anaemia. She needs to be very carefully looked after over the coming days. With the rash getting worse, she is now at serious risk of infection.*

## STOP POINT

### OUTCOME

**Gertrude's condition continued to deteriorate.  
She died three days later.**

**COULD ANYTHING ELSE HAVE BEEN DONE TO PREVENT GERTRUDE'S DEATH?**

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This question needs to be an open discussion. Answers of what treatment and care plan would be followed will vary a great deal from setting to setting.