Patients/HIV testing/cART and Dilemmas

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- A 24 y/o female , presents at 36 weeks of gestation to the ED with h/o uterine contractions
- She is admitted to labor and delivery for monitoring.
- Patient has had no prenatal care since her first trimester
- Laboratory values from 1st trimester
  - HIV: 4th generation Ag/Ab assay: Nonreactive
  - Syphilis serology: Negative
  - GC/Chlamydia: Negative

She was lost to follow up after her first trimester.

She continues to be sexually active, but has been in a monogamous relationship

HIV status of her partner is unknown

What labs need to be done

1) None, as all her STI testing was negative in the 1st trimester

2) Repeat HIV test, syphilis serology, GC/Chlamydia

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MDHHS Perinatal Human Immunodeficiency Virus (HIV), Hepatitis B, Hepatitis C, and Syphilis Testing and Reporting Guidelines

Trimester	HIV Testing
1st trimester	All women: (4th generation Ag/Ab assay)
3rd Trimester	Btw 28- 32 weeks, regardless of perceived risk and/or previous negative test.
Women who are at high-risk for infection	Any time and as often regardless of previous negative results. Upon admission for delivery regardless of previous negative result. Women with S/S of acute HIV infection: plasma RNA test in conjunction with an HIV antibody test.
Women who present to L&D or ED with no available, documented test results or prenatal care	Test STAT with rapid or expedited point of care testing.

- All positive screening tests must be confirmed.

Labs and results:

HIV 4th generation Ag/Ab assay: **Reactive**

Syphilis serology: Negative

GC/Chlamydia: Negative

Clinical Decision:

1) Disregard the HIV test as false positive as she had a previous negative test

2) Start the mother on a 3 drug ART

3) Immediate C-section

4) Await result of HIV-1/HIV-2 differentiation assay and HIV RNA result

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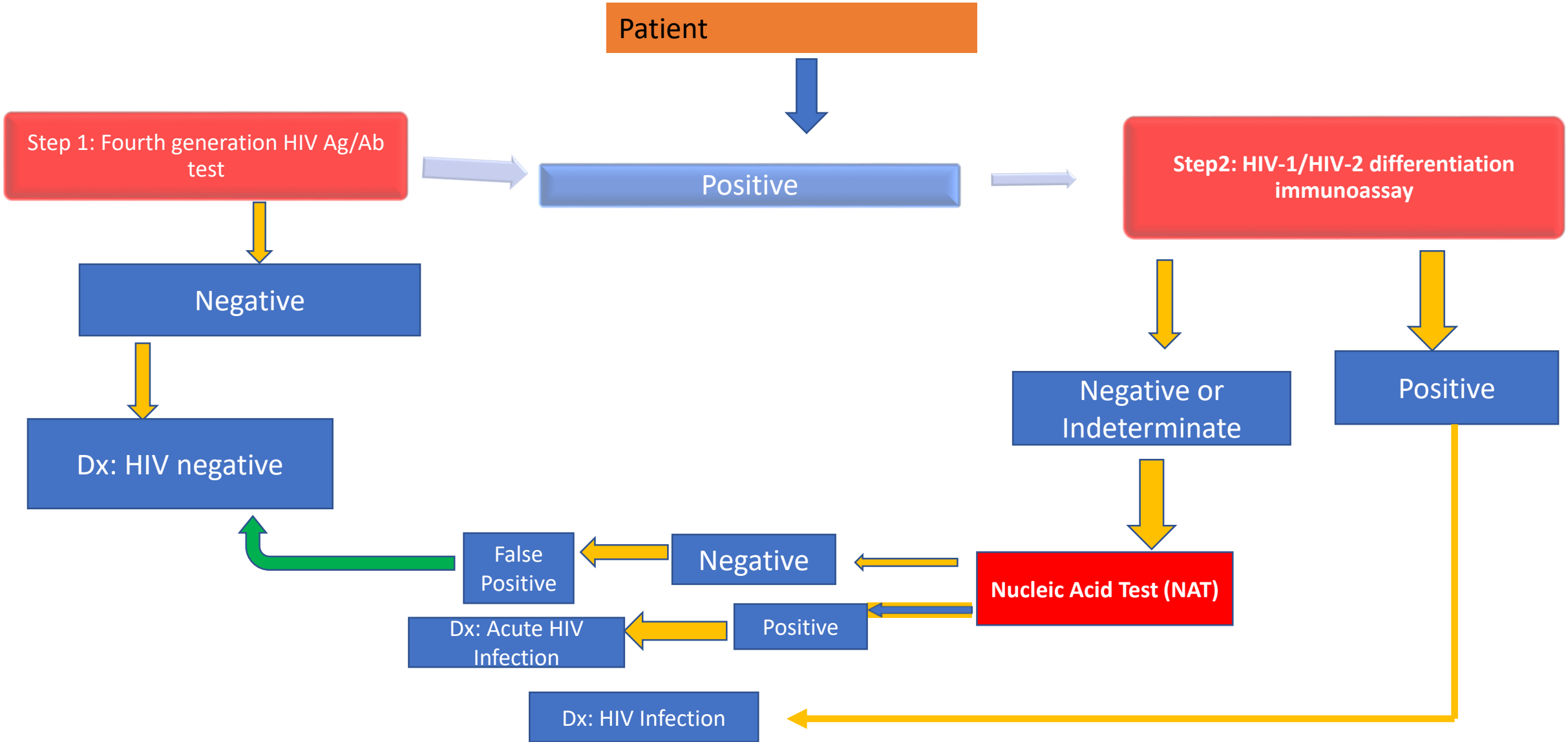
CDC Recommendations for HIV Testing



Result of HIV-1/HIV-2 differentiation Immunoassay: Scenario 1

Patient

Step 1: Fourth generation HIV Ag/Ab test

Positive

Step2: HIV-1/HIV-2 differentiation immunoassay

Scenario 1

HIV-1 AB +

Positive

Negative

Dx: HIV negative

Dx: HIV Infection

Mode of Delivery and ART for Mother; HIV+ at 36 weeks of gestation

Scheduled cesarean delivery at 38 weeks gestation

HIV RNA: Either >1000 copies/ml or unknown: Intrapartum IV ZDV administered to the mother

Result of HIV-1/HIV-2 differentiation Immunoassay: Scenario 2

Patient

Step 1: Fourth generation HIV Ag/Ab test

Positive

Step2: HIV-1/HIV-2 differentiation immunoassay

Negative

Scenario 2

Indeterminate

Nucleic Acid Test (NAT)

Positive

Dx: Acute HIV Infection

Risk of perinatal transmission after maternal acute HIV infection

- Acute HIV infection during pregnancy is associated with a high risk of vertical transmission of HIV.
- Cesarean delivery is necessary when there is insufficient time to fully suppress a patient’s viral load

Result of HIV-1/HIV-2 differentiation Immunoassay: Scenario 3

Patient

Step 1: Fourth generation HIV Ag/Ab test

Positive

Step2: HIV-1/HIV-2 differentiation immunoassay

Indeterminate

Nucleic Acid Test (NAT)

Negative

False Positive

Dx: HIV negative

Scenario 3

Clinical Decision

- False Positive : Fourth generation HIV Ag/Ab test
- No further HIV intervention needed

In Summary

Patient presented at 36 weeks of gestation, repeat 4th generation HIV Ag/AB test was positive. 3 possible scenarios:

HIV 4th generation Ag/Ab test	HIV-1/HIV-2 Immunoassay	HIV Viral Load	Final Diagnoses	Interventiom
Positive	HIV-1 Ab positive	Not done	HIV Infection +	C-section at 38 weeks, IV AZT
Positive	Indeterminate	Positive	Acute HIV Infection	C-section
Positive	Indeterminate	Undetected	False Positive 4th. Generation test	No further intervention

Drug Drug Interactions

- A 42 y/o male, HIV+ for past 20 years. Initial cART: (Efavirenz / FTC/TDF). Current cART: Odefsey (RPV / FTC/TAF) for the past 4 years. Labs:
  - CD4+: > 500 cells/mm^3
  - HIV VL: Undetectable
- Presented to the clinic with h/o multiple falls secondary to weakness in his legs
- Work up revealed a diagnosis of Polymyositis
- He was started on Prednisone, with slow recovery of function
- He subsequently developed severe calf muscle fasiculations and was started on Carbamezapine

Clinical Decision

1. There is potential of drug interaction between Carbamezapine and components of Odefsey (TAF+FTC+rilpivirine)
2. There is no booster in Odfesey, aka ritonavir or Cobicistat, drug interaction is unlikely

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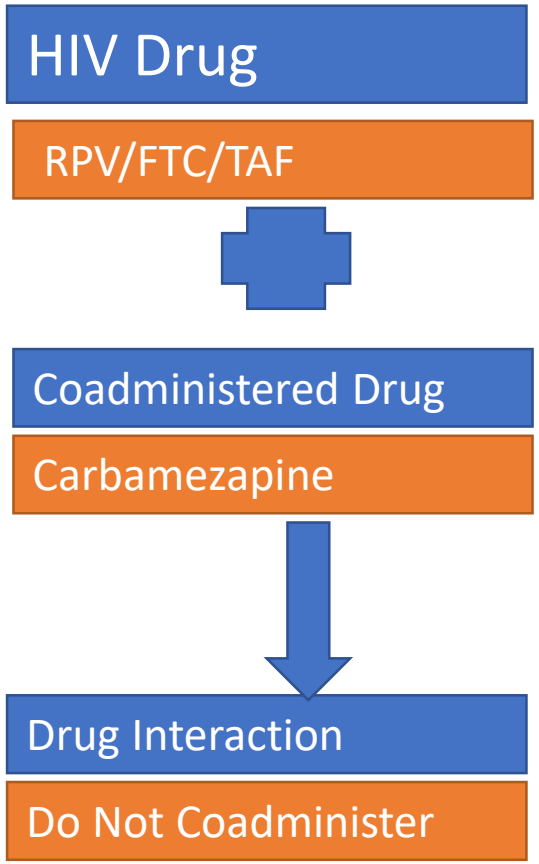

Coadministration contraindicated:

Carbamezapine may cause significant decreases in the plasma concentrations of ART by

1) Inducing CYP3A : Decrease the plasma concentrations of rilpivirine

2) Induction of P-glycoprotein: Decrease the absorption of TAF resulting in decreased plasma concentration of TAF.

STRs and Carbamezapine

STR	Coadministered Drug	Drug Interaction
Atripla: Efavirenz / Emtricitabine/TDF	Carmazepinie	**Potential interaction**
Dovato: Dolutegravir/ Lamivudine	Carmazepinie	**Potential interaction**
Triumeq: Dolutegravir/Abacavir/ Lamivudine	Carmazepinie	**Potential interaction**
Biktarvy: Bictegravir/ Emtricitabine/Tenofovir alafenamide	Carmazepinie	**Do no coadminister**
Genvoya: Elvitegravir/Cobi/ Emtricitabine/TAF	Carmazepinie	**Do not coadminister**
Symtuza: Darunavir/Cobi/ Emtricitabine/TAF	Carmazepinie	**Do not coadminister**
Truvada+Doravirine	Carmazepinie	**Do not coadminister**

Clinical Decision

- Switched Carbamezapine to Levetiracetam
- No known drug interactions with antiretrovirals
- Patient was continued on Odefsey