HIV for the Acute Medic

Amandip Sahota
ID Consultant
Acute Med Curriculum

- “Promoting safe sexual practice“

- "HIV/AIDS including testing"“

- “Infections in an immunocompromised host"
Objectives

- The global and local relevance of HIV
- HIV basics - structure, replication & treatment
- Transmission and prevention of infection
- *HIV in the acute setting - scenarios/questions*
Guidelines

• **NICE**
  - HIV testing: Increasing uptake in black Africans (PH33) and MSM (PH34)

• **British HIV Association (BHIVA) - everything else!** [http://www.bhiva.org/guidelines.aspx](http://www.bhiva.org/guidelines.aspx)
  - Treatment of HIV positive adults with ART (2016)
  - Treatment of opportunistic infection in HIV (2011)
  - UK National Guidelines for HIV testing (2008)
  - UK National Guideline for the use of PEPSE (2015)
  - UK National Guidelines on safer sex advise (2012)
## 2014 Data (WHO, PHE)

<table>
<thead>
<tr>
<th></th>
<th>Global total with infection</th>
<th>UK total with infection</th>
<th>Consequence if untreated</th>
<th>Global deaths (2014)</th>
<th>UK deaths (2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global new cases (2014)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>HIV</td>
<td>37 million</td>
<td>107,800</td>
<td>AIDS</td>
<td>1.2 million (3.2%)</td>
<td>320 (0.3%)</td>
</tr>
<tr>
<td></td>
<td>2 million</td>
<td>6,000</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Hep B</td>
<td>400 million (5-8% popn)</td>
<td>1:1000 people</td>
<td>Liver cirrhosis (10% develop)</td>
<td>1 million</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>4 million</td>
<td>500 (reported)</td>
<td>Hepatocellular carcinoma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hep C</td>
<td>200 million (3% popn)</td>
<td>1:200 (214,000) -most untested</td>
<td>Liver cirrhosis (80% develop)</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>? (most untested)</td>
<td></td>
<td>Hepatocellular carcinoma</td>
<td></td>
<td>424 (doubled in 10 years)</td>
</tr>
</tbody>
</table>
Q1. Which statement is true?

1. Globally, there are more men than women living with HIV
2. In the UK, most new cases of HIV have been acquired abroad
3. In the UK, more cases of HIV are diagnosed in MSM than heterosexuals
4. Globally, more cases of HIV are diagnosed in MSM than heterosexuals
5. In the UK, late diagnosis is more common in MSM than heterosexuals
Q1. Which statement is true?

1. Globally, there are more men than women living with HIV
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4. Globally, more cases of HIV are diagnosed in MSM than heterosexuals
5. In the UK, late diagnosis is more common in MSM than heterosexuals
Q2. Which statement is true?

A. In the UK, HIV treatment is free to those visiting on holiday
B. Untreated, HIV infection will always progress to AIDS
C. In the UK, treatment is only recommended if CD4 count < 350
D. People with HIV must use condoms to prevent transmission to negative partners
E. In the UK, the life expectancy of people with HIV is below the national average
Q2. Which statement is true?

A. In the UK, HIV treatment is free to those visiting on holiday
B. Untreated, HIV infection will always progress to AIDS - can get elite controllers
C. In the UK, treatment is only recommended if CD4 count <350 - BHIVA recommends treat all
D. People with HIV must use condoms to prevent transmission to negative partners - if VL undetectable
E. In the UK, the life expectancy of people with HIV is below the national average
Case 1

- 42 year old caucasian female, UK born
- Presents to GGH, fever + dry cough for 3/52
- PMH:
  - Asthma, infective exacerbation 2010
  - Psoriasis, ITP, CIN II, type 2 diabetes
  - Being investigated by Gastro, 5kg weight loss 3/12, watery diarrhoea; duodenal Bx suggestive of Coeliac’s, started on gluten-free diet
- DH - metformin, methotraxate, salbutamol inh
- SH - Smoker, married, no alcohol, no IVDU, no travel, no pets
- On admission - rapid deterioration in breathing leading to ITU referral
Q3. Which aspects of the history are indications for HIV testing?
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- Bacterial pneumonia (?recurrent)
- Severe/recalcitrant psoriasis
- CIN stage II (or above)
- Unexplained weight loss
- Unexplained chronic diarrhoea - *?HIV enteropathy (but also chronic GI infection)
- ITP - any unexplained blood dyscrasia
- Presenting to Glenfield Hospital!
Who should be tested?

- **Everyone!** (If rate >2/1000 in population)
- **Resp:** bacterial pneumonia / TB
- **Neuro:** aseptic meningitis/dementia/neuropathy
- **Derm:** Severe psoriasis / seborrhoeic dermatitis
  - Recurrent/multi-dermal shingles
- **Gastro:** Chronic diarrhoea/weight loss ?cause Salmonella/shigella/campylobacter
- **Haem:** any unexplained blood dyscrasia/LN
- **Onc:** lymphoma, anal cancer, head&neck
- **Gynae:** CIN2+, VIN
- Any STI/Hep B/HepC
How much HIV is out there in UK?

• **103,000 total** - Men 67%, Women 33%
  MSM 43%, Heterosexual 57%

• UK - 1.9/1,000

• Leicester - >3/1,000

• MSM - 1/20
  - Varies regionally

• Heterosexuals
  - 1/1000
  - 50-60% are black African
    - Men 1/56
    - Women 1/22

• IVDUs - 2/1000
Prevalence of diagnosed HIV infection by area of residence among population aged 15-59 years: UK, 2012
New diagnoses in the UK? (2014)

- **MSM** - 57% of sexual transmissions in UK: earlier diagnosis but rates **increasing**

- **Heterosexuals:**
  - New diagnoses decreased 50% since 2005
  - Average age at diagnosis = 40 years
  - >50% diagnosed at late stage

- Infection acquired in UK exceeding those acquired abroad

- Biggest increases in last 10 years:
  - East of England, North East, and Midlands

- Many undiagnosed
  - 17% of people living with HIV don’t know they are infected
What is HIV?

- Human Immunodeficiency Virus
- Retrovirus
- Infects & replicates in immune system
  - CD4 T-cells/macrophages
- HIV replicates inside cells → destroys the cell
- Virions released / infects more cells
2 Binding and Fusion: Virus binds to a CD4 molecule and one of two "coreceptors" (either CCR5 or CXCR4). Receptor molecules are common on the cell surface. Then the virus fuses with the cell.

3 Infection: Virus penetrates cell. Contents emptied into cell.

4 Reverse Transcription: Single strands of viral RNA are converted into double-stranded DNA by the reverse transcriptase enzyme.

5 Integration: Viral DNA is combined with the cell's own DNA by the integrase enzyme.

6 Transcription: When the infected cell divides, the viral DNA is "read" and long chains of proteins are made.

7 Assembly: Sets of viral protein chains come together.

8 Budding: Immature virus pushes out of the cell, taking some cell membrane with it.

9 Immature virus breaks free of the infected cell.

10 Maturation: Protein chains in the new viral particle are cut by the protease enzyme into individual proteins that combine to make a working virus.
• https://www.youtube.com/watch?v=rqDkYJn7w9Y
Case 2

- 37 yo caucasian male presents to AMU with 4/7 history of fever
- Returned from Thailand 1/52 ago
- Generally unwell, lethargic, headache, sore throat, widespread rash
- T 39.1, BP 108/75, HR 93, Sats 98% air
- Bloods
  - Hb 135, WCC 8.2, Neut, 5.2, Lymph 3.2, Plt 112
  - U&E normal
  - ALT 253, ALP 120, Bili 25, Amy 20, INR 1.0
Q3. Which diagnosis is least likely?

A. Dengue
B. Meningococcus
C. HIV
D. CMV
E. Syphilis
Q3. Which diagnosis is **least** likely?

A. Dengue
B. Meningococcus
C. HIV
D. CMV
E. Syphillis
Acute infection/Seroconversion

Latent Infection

Symptomatic Infection

Severe Infection/AIDS
<table>
<thead>
<tr>
<th>Stage</th>
<th>Symptoms</th>
<th>CD4 count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary HIV Infection</td>
<td>Asymptomatic or Seroconversion illness</td>
<td>Normal / temporary drop</td>
</tr>
<tr>
<td>Stage I</td>
<td>Asymptomatic</td>
<td>&gt;500</td>
</tr>
<tr>
<td>Stage II</td>
<td>Mild</td>
<td>&lt;500</td>
</tr>
<tr>
<td>Stage III</td>
<td>Advanced</td>
<td>&lt;350</td>
</tr>
<tr>
<td>Stage IV or AIDS</td>
<td>Severe or AIDS defining</td>
<td>&lt;200</td>
</tr>
</tbody>
</table>
Main symptoms of Acute HIV infection

Systemic:
- Fever
- Weight loss

Central:
- Malaise
- Headache
- Neuropathy

Pharyngitis

Mouth:
- Sores
- Thrush

Lymph nodes:
- Lymphadenopathy

Esophagus:
- Sores

Skin:
- Rash

Muscles:
- Myalgia

Liver and spleen:
- Enlargement

Gastric:
- Nausea
- Vomiting
HIV Associated Conditions

- **Brain**
  - Cryptococcal meningitis
  - Toxo (toxoplasmosis)
  - AIDS dementia complex

- **Eyes**
  - CMV (cytomegalovirus)

- **Mouth and throat**
  - Cold sores and ulcers
  - Thrush (oral candidiasis)

- **Blood**
  - Hyperglycemia (high blood sugar) and dyslipidemia (abnormal amount of fats in the blood)

- **Lungs**
  - Histoplasmosis
  - PCP (pneumocystis jiroveci pneumonia)
  - TB (tuberculosis)

- **Bone**
  - Osteoporosis

- **Heart**
  - Heart disease, stroke

- **Liver**
  - HCV (hepatitis C virus)

- **Stomach**
  - CMV (cytomegalovirus)
  - Crypto (cryptosporidiosis)
  - MAC (mycobacterium avium complex)

- **Reproductive system**
  - Genital ulcers
  - HPV (human papillomavirus) and cervical cancer
  - Menstrual problems
  - PID (pelvic inflammatory disease)
  - Vaginal yeast infections (candidiasis)

- **Body**
  - HIV wasting syndrome
Transmission

- Sexual transmission
  - Vaginal, anal or oral
- Sharing of injecting equipment
- Vertical transmission
  - In utero, during childbirth or breast feeding
- Medical procedures
  - Blood/blood-products, skin grafts, organ donation and artificial insemination
Factors Affecting HIV Transmission

- Type of exposure
- Viral load
- Other STIs
  - Local effects
  - Effects of immune system
- Condom use
- Breaks in skin or mucosa
Living With HIV

- Life expectancy and quality of life now excellent
- General pop: 77yrs
- HIV +ve: 77yrs
  - Early detection
  - Early treatment
  - Adherence
  - Healthy living
    - Smoking, alcohol, drugs, exercise
- Late detection = worse prognosis
Back to Case 2...
Q4. Which statement is true regarding HIV testing?

A. Bring patient back to clinic at 12 weeks for serological test
B. Bring patient back to clinic at 4 weeks for serological test
C. Do immediate serological test
D. Do immediate RNA test
E. Do immediate POCT (point-of-care test)
Q4. Which statement is true regarding HIV testing?

A. Bring patient back to clinic at 12 weeks for serological test

B. Bring patient back to clinic at 4 weeks for serological test

C. Do immediate serological test
   Exclude pre-existing HIV; if neg, bring back to test at 8-12/52

D. Do immediate RNA test

E. Do immediate POCT - helpful to exclude, but may get false negative
Diagnostic tests

- **Serology:**
  - HIV antigen - *made by the virus*
  - HIV antibody - *made by the immune system*
  - Current test: 4th gen (both)
  - + in 4-6 weeks
  - Result on same day
  - May get *false negative* result

- **Viral RNA**
  - Not for standard diagnosis
  - Positive within few days
Diagnostic tests

- POCT - low cost, <1hr
  - Blood test (finger-prick)
  - Oral (saliva)
  - In-Home tests
  - Postal testing

- If negative - very accurate
- May get *false positive* result
  - Need to confirm
Back to case 1...

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- PMH:
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- DH - metformin, methotrexate, salbutamol inh
- SH - Smoker, married, no alcohol, no IVDU, no travel, no pets
• O/E - RR 36, HR 112, BP 108/75, Sats 85%
  - minimal creps B/L, no wheeze
• ABG on air
  - pH 7.40, paO2 7.0kPA, pCO2 3.2kPA
  - BE -3, HCO3 19
• ITU review
  - Decision to take to ITU immediately, intubated/ventilated
Q5. What is the most likely diagnosis?

A. Pulmonary TB
B. PCP
C. CMV pneumonitis
D. Histoplasmosis
E. Pulmonary cryptococcosis
Q5. What is the most likely diagnosis?

A. Pulmonary TB
B. PCP
C. CMV pneumonitis
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Q6. What treatment would you start empirically?

A. IV co-trimoxazole and prednisolone
B. PO co-trimoxazole and prednisolone
C. IV co-trimoxazole and atovaquone
D. PO clindamycin and primaquine
E. IV pentamidine and prednisolone
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B. PO co-trimoxazole and prednisolone
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Q7. You wish to request a HIV test, but she is currently intubated and unable to consent. How should you proceed?

A. Request a HIV specialist to gain consent
B. Do not test as you have not received the appropriate training to gain consent
C. Seek consent from next of kin
D. Request a test without consent
E. Do not test as she is unable to give consent
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Q8. She begins to recover on PCP treatment, and is transferred to the general ward. Further results show CD4 120, VL 240,000. Regarding commencing ART, which statement is true?

A. ART should be commenced immediately
B. ART should be commenced in no later than 2 weeks
C. ART should be commenced once PCP treatment is complete
D. ART should be commenced only when other OI have been excluded
E. ART should be commenced when CD4 falls to 100
Q8. She begins to recover on PCP treatment, and is transferred to the general ward. Further results show CD4 120, VL 240,000. Regarding commencing ART, which statement is true?

A. ART should be commenced immediately

B. ART should be commenced in no later than 2 weeks - need to weigh up benefits of immune reconstitution to clear the PCP ASAP, vs risk of drug interactions and IRIS (immune reconstitution inflammatory syndrome)

C. ART should be commenced once PCP treatment is complete

D. ART should be commenced only when other OI have been excluded

E. ART should be commenced when CD4 falls to 100
When should you start HAART?
- *guidance up until very recently was...*

<table>
<thead>
<tr>
<th>CD4 &lt;350</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary HIV infection</td>
</tr>
<tr>
<td>Any AIDS-defining illness</td>
</tr>
<tr>
<td>Other illnesses / reasons</td>
</tr>
<tr>
<td>- Hep B / C</td>
</tr>
<tr>
<td>- Syphilis</td>
</tr>
<tr>
<td>- Cancer / lymphoma</td>
</tr>
<tr>
<td>- Heart disease</td>
</tr>
<tr>
<td>- Prevent transmission to others</td>
</tr>
<tr>
<td>- Patient choice</td>
</tr>
</tbody>
</table>
Now... treat everyone ASAP, regardless of CD4 (significant benefits in AIDS & non-AIDS morbidity and mortality)

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4.0 When to start

4.1 Chronic infection

4.1.1 Recommendations

- We recommend people with HIV start ART (1A).

4.1.2 Auditable outcomes

- Proportion of diagnosed PLWH on ART.
- Proportion of PLWH not on ART where the rationale for this, and a discussion of the benefits of ART, has been documented at least annually.

4.1.3 Rationale

Until recently, BHIVA recommended that individuals with chronic HIV infection should start ART before the CD4 count fell to below 350 cells/μL [1]. This recommendation was based on evidence from cohort studies that demonstrated an increased risk of disease progression in individuals who delayed ART until their CD4 count fell to this level.
Aims of HIV treatment

- Undetectable HIV viral load
- Reconstituted immune system
- Good quality of life
- Normalised lifespan
- Reduced risk of transmission
One year mortality among adults diagnosed by CD4 count at diagnosis: UK, 2010

CD4 count at diagnosis:
- <350 cells/mm$^3$
- >350 cells/mm$^3$
Preventing viral replication
Why 3 drugs?

- Millions of viral copies per day
- High chance mutation
  - Random and under drug-pressure
- Resistant develops quickly (days/weeks)
- 1 drug - resistance develops quickly
- 3 drugs - harder to develop resistance
- Patient must remain adherent
Which drugs?

<table>
<thead>
<tr>
<th>NRTI</th>
<th>X 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tenofovir (<em>Viread</em>)</td>
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<tr>
<td></td>
<td>Emtricitabine</td>
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<tr>
<td></td>
<td>Lamivudine</td>
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<tr>
<td></td>
<td>Abacavir</td>
</tr>
<tr>
<td></td>
<td>(Zidovudine (<em>AZT</em>))</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>NNRTI</th>
<th></th>
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<tbody>
<tr>
<td>Or</td>
<td>Efavirenz (<em>Sustiva</em>)</td>
</tr>
<tr>
<td></td>
<td>Rilpivirine</td>
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<tr>
<td></td>
<td>Nevirapine (<em>Viramune</em>)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Protease inhibitor</th>
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<tbody>
<tr>
<td>Or</td>
<td>Darunavir</td>
</tr>
<tr>
<td></td>
<td>Atazanavir</td>
</tr>
<tr>
<td></td>
<td>Lopinavir</td>
</tr>
<tr>
<td></td>
<td>(Ritonavir – boosting agent)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Integrase inhibitor / CCR5 (entry) inhibitor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Raltegravir</td>
<td></td>
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<tr>
<td>Dolutegravir</td>
<td></td>
</tr>
<tr>
<td>Maraviroc (<em>Celsentri</em>)</td>
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</tr>
</tbody>
</table>
Q8. The patient recovers, is discharged and is seen in OPD in 2 weeks with a HIV specialist nurse. She has an ex-husband who she divorced 6 months ago, and a 12 year old son. She entered a new relationship 3 months ago. She is reluctant to disclose her status to either, and does not want to put her son through a test. Which statement is true?

A. The ex-husband cannot be tested without disclosing her status
B. The son cannot be tested without her consent
C. Her current partner cannot be tested without her consent
D. She could be prosecuted for having unprotected sex with her partner
E. She could be prosecuted for knowingly infecting her partner
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A. The ex-husband cannot be tested without disclosing her status - there are ways to test someone without disclosing a current/previous partner’s status

B. The son cannot be tested without her consent - legally, yes he can be tested because he is a minor

C. Her current partner cannot be tested without her consent

D. She could be prosecuted for having unprotected sex with her partner - not on its own justification for prosecution

E. She could be prosecuted for knowingly infecting her partner
Q9. All relevant parties are tested and are negative. She continues on ART, and her VL becomes <40copies/ml. 3/12 later she attends ED with her HIV-negative partner. A condom broke during vaginal and oral sex 2 days prior, and they are concerned about transmission. What advice do you give them?

A. Do not advise PEPSE as her viral load is undetectable
B. Advise PEPSE as it is a high risk exposure
C. Do not advise PEPSE as it is only indicated for anal intercourse
D. Do not advise PEPSE as it is beyond the allowed time-scale
E. Advise PEPSE as she may have an additional STI
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E. Advise PEPSE as she may have an additional STI
**RECOMMENDATION FOR PEPSE**

**Table 4: Situations when post-exposure prophylaxis (PEP) is considered (IV, grade C)**

<table>
<thead>
<tr>
<th>Source HIV status</th>
<th>HIV-positive</th>
<th>Unknown from high prevalence group/area</th>
<th>Unknown from low prevalence group/area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Viral load detectable</td>
<td>Viral load undetectable</td>
<td></td>
</tr>
<tr>
<td>Receptive anal sex</td>
<td>Recommend</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Insertive anal sex</td>
<td>Recommend</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Receptive vaginal sex</td>
<td>Recommend</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Insertive vaginal sex</td>
<td>Recommend</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Fellatio with ejaculation †</td>
<td>Consider</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Fellatio without ejaculation †</td>
<td>Not recommended</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Splash of semen into eye</td>
<td>Consider</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Cunnilingus</td>
<td>Not recommended</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Sharing of injecting equipment</td>
<td>Recommended</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Human bite §</td>
<td>Not recommended</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Needlestick from a discarded needle in the community</td>
<td>Recommended</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
</tbody>
</table>

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*High prevalence groups within this recommendation are those where there is a significant likelihood of the source individual being HIV-positive. Within the UK at present, this is likely to be men who have sex with men and individuals who have immigrated to the UK from areas of high HIV prevalence (particularly sub-Saharan Africa).

† More detailed knowledge of local prevalence of HIV within communities may change these recommendations from consider to recommend in areas of particularly high HIV prevalence.

‡ PEP is not recommended for individuals receiving fellatio i.e. inserting their penis into another’s oral cavity.

§ A bite is assumed to constitute breakage of the skin with passage of blood.

---

- **PEPSE recommended if risk of transmission is ≥1/1000 (0.1%)** (consider if 1/10,000 - 1/1000)
Q10. The risk of transmission of HIV from a needlestick injury from a known positive source is:

A. 1:3
B. 1:30
C. 1:300
D. 1:3000
E. 1:30,000
Q10. The risk of transmission of HIV from a needlestick injury from a known positive source is:

A. 1:3  - Hep B transmission risk, if unvaccinated
B. 1:30  - Hep C transmission risk
C. 1:300
D. 1:3000
E. 1:30,000
## Risk of HIV Transmission

<table>
<thead>
<tr>
<th>Type of Exposure</th>
<th>Risk of HIV Transmission (Source is HIV Positive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Transfusion (one unit)</td>
<td>90-100%</td>
</tr>
<tr>
<td>Receptive Anal Intercourse</td>
<td>1/90 (1.11%)</td>
</tr>
<tr>
<td>Sharing Injecting Equipment</td>
<td>1/149 (0.67%)</td>
</tr>
<tr>
<td>Mucous Membrane Exposure</td>
<td>1/159</td>
</tr>
<tr>
<td>Needlestick Injury</td>
<td>1/333</td>
</tr>
<tr>
<td>Receptive Vaginal Intercourse</td>
<td>1/1000</td>
</tr>
<tr>
<td>Insertive Vaginal Intercourse</td>
<td>1/1220</td>
</tr>
<tr>
<td>Insertive Anal Intercourse</td>
<td>1/1667</td>
</tr>
<tr>
<td>Oral sex</td>
<td>0</td>
</tr>
</tbody>
</table>
RATIONALE FOR PEP

• Early initiation of HAART reduces spread and replication of HIV in tissue and bodily fluid

WHAT’S THE EVIDENCE?
ANIMAL STUDIES

Macaques & SIV

- Tenofovir s/c administered within 24hrs and continued for 28 days was 100% protective.

- Highest protection if PEP given within 2 hrs. No protection if PEP given after 24 hrs.

- Other studies show no protection
THE DRUGS

- Truvada T od
- Raltegravir bd
- 3 day starter pack (from GUM/A&E)
- 28 days in total (remainder from GUM)
- Needs ASAP- ideally within 1 hour
- Start up to 72 hours only
Q11. 1 year later she attends clinic, her VL is <40 copies/ml, CD4 300. She tells you that she wishes to become pregnant with her HIV-negative partner. Which statement is true?

A. She would need to stop her ART in the 1st trimester as it may be teratogenic
B. She would need a planned C-section
C. The risk of her transmitting the infection is up to 25%
D. She should exclusively breast-feed
E. Her child would need ART after birth
Q11. 1 year later she attends clinic, her VL is <40 copies/ml, CD4 300. She tells you that she wishes to become pregnant with her HIV-negative partner. Which statement is true?

A. She would need to stop her ART in the 1st trimester as it may be teratogenic - no evidence of teratogenicity for most ARVs; most important factor to prevent mother-to-child transmission is undetectable maternal VL at 36/40

B. She would need a planned C-section - aim for planned vaginal delivery in most cases if no other obstetric complications

C. The risk of her transmitting the infection is up to 25% - only if detectable maternal VL at birth

D. She should exclusively breast-feed - she should exclusively formula feed, risk of transmission from breast-feeding

E. Her child would need ART after birth - start immediately as PEP, give for 4 weeks, check regular VL
Useful references:

- All BHIVA clinical guidelines, especially on opportunistic infection [http://www.bhiva.org/guidelines.aspx](http://www.bhiva.org/guidelines.aspx)

- Opportunistic infection guideline/treatment app (very comprehensive)
  - available to download via BHIVA website

- ART and non-ART drug-drug interaction checker (very user-friendly, RAG system) [http://www.hiv-druginteractions.org/](http://www.hiv-druginteractions.org/)