Welcome to the first HIV Trainee Association newsletter of 2022!

As we enter the new year, I would like to thank the committee, speakers, sponsors and members for their participation and hard work in the past year. It has been an extremely challenging two years for all of us with the COVID pandemic. I want to express gratitude for your continued support at our events.

We ran two successful workshops in 2021. We had an interesting half-day virtual workshop with topics including HIV resistance and TB co-infection in April 2021. We had our first face-to-face workshop during the pandemic in Manchester in December too. This newsletter contains summaries from our latest workshop 'Nobody left behind!' in Manchester, for those who did not manage to attend it. We will be uploading a video recording of the workshop on our website.

Summarised talks:

- Opportunistic Infections in people living with HIV, Dr Elizabeth Okecha
- Testing for HIV from laboratory perspective, Dr Emma Page
- Transgender hormones: assessment, prescribing and monitoring, Dr Peter Hammond
- HIV and PWID, Dr Rebecca Metcalfe
- HIV care difficulties for migrants/asylum seekers and refugees, Dr Fionnuala Finnnerty

With the new year, there are changes to our committee as people complete training, so we need new enthusiastic committee members to join! If you're looking to play an active role in supporting the educational development of UK-based trainees who care for people living with HIV, then please apply before the 7th of March. **For more information and to apply, click here**.

We have an upcoming workshop planned on 19th April 2022 in Manchester. Click here to reserve your place!

Wishing you all a successful 2022 and looking forward to seeing you in April.

Yee Suh Teh
Editor

For more information, please refer to our website https://hivta.org.uk
Please send any comments/views to: info@hivta.org.uk
Twitter: @hivta_uk

OPPORTUNISTIC INFECTIONS IN PEOPLE LIVING WITH HIV

Dr Elizabeth Okecha
Consultant in Genitourinary medicine and HIV, St Helens and Knowsley Teaching Hospitals NHS Trust

Article by Matthew Page

Dr Okecha presented a case-based presentation. Below is a summary table of the conditions discussed and how they are managed.

Opportunistic Infection summary of cases discussed

Condition	Typical CD4 count	Key Presentation	Key Investigation	Treatment
Pneumocystis Jirovecii Pneumonia (PJP)	200cells/mm3 or less	●Fever ●Sweats ●Dry cough ●Progressive SOBOE	●Pulse oximetry +/- ABG ●Chest radiograph ●G6PD ●Bronchoalveolar lavage	●Co-trimoxazole (21days) – oral (in mild/mod), IV in (mod/sev) ●2nd line (Clindamycin and primaquine, IV Pentamadine, oral trimethoprim and dapsone [mild] oral atovaquone [mild])
Pulmonary TB	500cells/mm3 or less	●Unintentional weight loss ●Haemoptysis ●Fever ●Cachetic ●Lymphadenopathy (generalised)	●Chest radiograph or CT thorax ●x3 induced sputum (AAFB/TB culture/TB NAAT) ●Bronchoscopy ●Invasive sampling [biopsy, LP] (extra-pulmonary) ●Additional imaging (extra-pulmonary)	●Isoniazid (with Pyridoxine), Rifampicin, Pyrazinamide, and Ethambutol – for first two months THEN ●Isoniazid (with Pyridoxine) and Rifampicin alone for a further four months
CMV retinitis	50cells/mm3 or less	●Floaters in eye ●Flashing lights ●Visual acuity and central field deficit ●”cheese & tomato pizza” appearance on fundoscopy	●Fundoscopy (dilate pupils) – demarcated haemorrhagic exudates along vessels ●Urgent referral to ophthalmology (sight threatening condition) ●Brain imaging and LP if suspicious of CMV encephalitis (rare complication) ●Other CMV manifestiations – GI, biliary tree (sclerosing	●2-4weks oral valganciclovir (if lesions peripheral) ●2nd line – ganciclovir, foscarnet and cidofovir) ●Maintenance dose continued until HIV VL undetectable, CD4 >100cells/mm3, and ophthalmology agree

			cholangitis), pneumonitis, and radiculitis	

Differential diagnoses of OIs

CHEST RADIOGRAPH APPEARENCE	POSSIBLE CAUSE
Diffuse infiltrates	PJP, TB, Kaposi's Sarcoma, Non-Hodgkin's Lymphoma, Atypical Bacterial Pneumonia e.g. Mycoplasma, Viral pneumonitis, Lymphoid interstitial pneumonitis, COVID-19
Cavitations	TB, Nocardia, Rhodococcus, Bacterial Pneumonia, Aspergillus
Nodules/focal consolidation	TB, Kaposi's Sarcoma, Non-Hodgkin's Lymphoma, Cryptococcus, Histoplasma
Hilar lymphadenopathy	TB, Kaposi's Sarcoma, Non-Hodgkin's Lymphoma, Cryptococcus, Histoplasma
Pleural effusion	Kaposi's Sarcoma, TB, Pyogenic bacterial pneumonia (empyema), primary effusion lymphoma
NEUROLOGICAL PRENTATIONS	--
Space-occupying lesions	Toxoplasmosis, primary CNS lymphoma, Progressive multifocal leucoencephalopathy (PML), TB
Cognitive impairment	PML, HIV Dementia/Encephalopathy, Tertiary Syphilis (Neurosyphilis)
Encephalitis	HIV, Varicella Zoster Virus (VZV), Herpes Simplex (HSV), Syphilis (rare)
Meningitis	HIV Seroconversion, *Cryptococcus*, TB, Syphilis
Spastic paraparesis	HIV myelopathy, transverse myelitis (VZV, rarely Syphilis), HTLV-1
Peripheral neuropathy	HIV, drugs e.g. Isoniazid (if Pyridoxine not also given), older antiretrovirals
Retinitis	CMV, Toxoplasma, retinal necrosis – VZV, Syphilis, HIV

Important clinical trials to know the headline conclusions for

- When to start HAART following PJP treatment: ***(the ACTG5164 trial)***, Zolopa et al, 2009 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2680972/
- When to start HAART following Cryptococcal meningitis treatment ***(the COAT trial)***, Boulware et al, 2014 https://www.nejm.org/doi/full/10.1056/nejmoa1312884
- When to start ART following Tuberculosis treatment ***(the SAPiT trial)*** Abdool Karim et all, 2011 https://www.nejm.org/doi/full/10.1056/nejmoa1014181 ; ***(the CAMELIA trial)*** Blanc et al, 2011 https://www.nejm.org/doi/full/10.1056/nejmoa1013911 ; (the ACTG A5221 STRIDE trial), Havlir et al, 2011 https://www.nejm.org/doi/full/10.1056/nejmoa1013607

DipHIV tips (gold star advice)

PJP: Be aware of the categories of severity;

- **Mild:** Dyspnoea with/without cough and sweats, p02 .11kPa, Sp02 >96% (on air), CXR: normal/minor perihilar shadowing
- **Moderate:** Dyspnoea on minimal exertion/rest with cough & fevers, with/without sweats, p02 8.1-11kPa, Sp02 91-96% (on air), CXR: diffuse interstitial shadowing
- **Severe:** Dyspnoea at rest with fever and cough, p02 <8.0kPa, Sp02 on air <91%, CXR: extensive interstitial shadowing with/without alveolar shadowing
- *If p02 is <9.3kPa – a reducing dose of steroids should be given in addition*

Mycobacterial infections;

- In addition to Pulmonary TB management, you should also know about extra-pulmonary TB and MAI/MAC (other mycobacterium management), CSF interpretation, latent TB screening, management of adverse drug reactions in TB and drug interactions with HAART

Read the BHIVA guidelines on OI, and partake in the e-learning modules on the BHIVA website

TESTING FOR HIV FROM THE LABORATORY PERSPECTIVE

Dr Emma Page
Consultant in Virology, Leeds Teaching Hospital Trust

Article by Khine Phyu

Dr Page gave us an excellent and very interactive talk on the laboratory perspective of HIV testing.

1. Testing = Prevention

Dr Page started the presentation by highlighting the importance of HIV testing not only in primary but also in secondary prevention. By knowing the status, it helps to reduce risk behaviour, can be linked to HIV services for effective treatment and support, which can then reduce risk of onwards transmission.

2. HIV Tests

2.1. *Evolution of virus detection*

Day 10-Day 48	Acute HIV Infection Phase
Day 0-10	Eclipse Period – No test can detect HIV infection during this time
From Day 10	HIV virus detection in the blood by HIV 1 RNA PCR
Day 14-Day20	P24 detectable and peaks at about day 30
Day 20-Day 23	IgM Ab starts to become detectable by 3rd and 4th generation tests
Day 28- Day 48	IgG Ab starts to become detectable by 1st and 2nd generation tests

2.2. *Different Types of HIV Test*

2.2.1. HIV POCT

- Capillary movement along the strip results in separation of components AND allows target antibody binding to specific antigens (or in some cases eg COVID lateral flows target antigen to specific antibodies)
- Available in different samples – finger prick or oral fluid
- Window Period – 90 Days for all POCTs (Including Determine HIV 1 / 2 (3rd generation), INSTI HIV 1 /2 test and the OraQuick Rapid HIV 1 / 2 Ab test)

2.2.2. ELISA (laboratory) - Window Period – 45 days

Dr Page talked us through the flow diagrams of HIV screening and confirmation from UK standards for Microbiology Investigation (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/581545/V_11i4.1.pdf) with interactive discussion on some clinical cases.

Example case – history of generally unwell, flu like illness

	Baseline	16 weeks later	18 weeks later
HIV Ab (1st line)	Neg (<0.05)	Positive (>12.0)	Positive (>12.0)
HIV XL Ab (2nd line)	n/a	Neg (0.32)	Positive (9.53)
HIV XL Ag (2nd line)	n/a	Positive (120)	Positive (13.10)
Geenius	n/a	Negative	Positive
Final result	Negative	Positive	Positive
RNA PCR	N/a	>10,000,000	

2.2.3. HIV RNA

- RNA extracted from plasma and amplified by PCR
- Lower limit of detection can be different on different assays
- Usually reported as copies/ml

It may not be detected in some conditions such as on antiretroviral medications, acquisition on PrEP, HIV-2, Elite Controller and laboratory error.

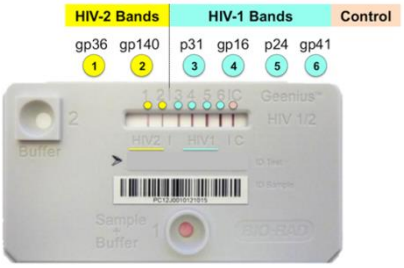
2.2.4. Western Blot

Like an ELISA, it detects antibodies, but to several HIV Antigens.It can be interpreted as positive if 2 out of 3 bands for: P24, gp41 and gp120/160 positive.

2.2.5 Line Blot

It can be used for both HIV -1 and HIV -2. It is made to be aware that some HIV-1 POL and GAG antigens cross react with HIV-2.

2.2.6 Geenius – immunochromatographic assay for confirmation and differentiation of individual antibodies to HIV 1 / 2



Interpretation:

For HIV 1 positive – Any 2 bands of the 4 HIV-1 test lines with at least 1 ENV-gp160(Band 4 or gp41(Band 6)

For HIV-2 2 HIV-2 Bands must be present: gp36 and gp140(Band 1 and 2)

2.2.7. HIV Pro-viral DNA

The integrated HIV DNA is known as Pro-viral DNA and it remains present in a patient's cell during virological suppressions. Therefore, testing for pro-viral DNA could be useful in situations like looking for archived resistance (not clear clinical benefit), diagnosing HIV where RNA not detected and unusual serology e.g? HIV 1 / 2 co-infection.

TRANSGENDER HORMONES: ASSESSMENT, PRESCRIBING AND MONITORING

Dr Peter Hammond
Consultant Diabetes and Endocrine, Harrogate and District NHS Foundation Trust

Article by Cristina Fernandez

Dr Peter Hammond, consultant endocrinologist and the lead endocrinologist for the Leeds regional identity service, presented "Transgender hormones: assessment, prescribing and monitoring".

Gender service provision is based at 13 clinics in the United Kingdom and 3 pilots in England. Gender identity teams have endocrinologists, physicians, psychiatrists, psychologists, language therapists, and occupational therapists, and have close links to associated surgeons. Where indicated, gender clinics initiate hormone therapy, offer speech and communication therapy, prescribe facial hair removal, and recommend surgery. Some treatments are funded by the gender clinic, others by primary care and some not at all.

The diagnostic criteria for gender incongruence in adolescents and adults are under the "Conditions related to sexual health" chapter in ICD-11. The principles of hormone treatment are to administer sex hormones appropriate to the intended gender and reduce exposure to endogenous sex hormones. Adolescents have more stringent eligibility criteria for GnRH agonist and sex hormone treatment than adults.

Trans males can receive gel or injectable testosterone. Trans females oral or transdermal oestrogen. Maximum hormonal effect can take 1-5 years to be observed. For trans males polycythaemia, weight gain, acne, androgenic alopecia, vaginal atrophy, clitoral pain and sleep apnoea are observed side effects. For trans females VTE, gallstones, hypertriglyceridemia, elevated liver enzymes and weight gain; although the absolute risk depends on the route of administration of oestrogen. Other treatments for trans females include GnRH agonists and anti-androgens. Current unknowns are how long sex hormones should be prescribed for and the benefit of progesterone in trans females.

HIV AND PEOPLE WHO INJECT DRUGS(PWID)

Dr Rebecca Metcalfe
Consultant in genitourinary medicine and HIV, Clinical Director, NHS Greater Glasgow and Clyde

Article by Alex Maxwell

Dr Metcalfe, Consultant in Sexual Health and HIV in Glasgow, gave an excellent overview of her experience of managing HIV in People Who Inject Drugs (PWIDs).

Glasgow is experiencing an outbreak of HIV amongst this group since 2014, with 188 cases recorded by the end of 2020. They are epidemiologically and virologically linked, Clade C with the primary NNRTI mutations V179E and W138A, as well as a smaller Clade B outbreak.

Factors associated with raised risk of HIV infection are injecting cocaine, homelessness, frequent incarceration and public injecting.

This has led to development of services (GECHO- Glasgow Enhanced Care HIV Outbreak model) to adapt to the needs of this population, such as nurse led 'outreach model', HIV medication dispensing in community pharmacies alongside ORT, 'in reach' consultant BBV clinic model (based in 'hotspot' locations), early medical review/early ART/TasP.

There has been a dramatic drop in the median time from diagnosis to starting ART in PWIDs in Glasgow- 264 days in 2015 to 23 days in 2019. Viral suppression increased from 18% in 2015 to 86% in 2019.

A PrEP model for sexual contacts of PWIDs was developed based on the initial GECHO service framework: active case finding, flexible location for baseline assessment and monitoring with remote physician review, supervised dispensing at community pharmacies alongside opiate replacement therapy, with reporting of adherence breaks to the PrEP team. There is also active follow-up by sexual health nurses.

Main learning points: advocacy for health inequalities is **hard work!** Evidence can help support your clinical case for service change, work with interested partners. Reinforce harm reduction at every opportunity and support your colleagues to do the same.

Can you support your vulnerable populations by adapting service models?

HIV CARE DIFFICULTIES FOR MIGRANTS/ASYLUM SPEAKERS AND REFUGEES

Dr Fionnuala Finnerty
Specialist Registrar in genitourinary medicine and HIV, Brighton and Sussex University Hospital

Article by Sarah Cavilla

Dr Finnerty from Brighton presented on HIV care difficulties for migrants, asylum seekers and refugees. Cases highlighted the challenges this vulnerable patient group face in hostile environments; the difficulties in accessing treatment, confusion about entitlements, destitution testing to be qualified for support, HIV prevention and stigma. She explained the difference between refugees (who have successfully sought asylum), asylum seekers and undocumented migrants. In a survey of HIV and reproductive and sexual health professionals, only 29% understood the healthcare entitlements for migrants in the UK, although 78% had encountered them in clinical practise. 71% wanted further training.

The stigma and impact of sexuality was emphasized with figures from 2015-17 showing that three quarters of asylum applications made based on sexual orientation were rejected; with cases of people being deported back to countries where homosexuality is illegal, and they face danger.

European surveillance reported that amongst sub-Saharan migrants who acquired HIV after migration; 58% acquired it during settlement (0-6 years) and 42% after this period; demonstrating

the need for HIV prevention strategies to target this vulnerable group. HIV infection prevalence in refugee and undocumented migrant population were discussed; 3.4% of pregnant asylum seekers to the Netherlands in 2015 were living with HIV.

Governmental policies, media coverage and examples such as HIV treatment being denied in detention are having a detrimental impact on the global progress of HIV care and UN AIDS targets. Further recommended reading resources include "HIV and migration in the UK report" on the National Aids Trust Website.

Committee Steering Group 2022

Michael Ewens	Chair
Matthew Page	Vice-Chair
Jozef Shaw	Finance/Sponsorship
Cristina Fernandez	Research Officer
Alex Langrish	Education Officer
Johanna Denman	Education Officer
Yee Suh Teh	Social Media/Newsletter

Our ambition is to always strive for better, to help achieve:

zero new infections

zero discrimination

zero AIDS-related deaths

by 2030

For healthcare professionals only
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