Second Joint Conference

*of the British HIV Association **[BHIVA]***
and the
*British Association for Sexual Health and HIV **[BASHH]***

20-23 April 2010, Manchester Central Convention Complex

SECOND JOINT CONFERENCE OF BHIVA AND BASHH 2010

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COMPETING INTEREST OF FINANCIAL VALUE ≥ £1,000:	
Speaker Name	**Statement**
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Date	13 April 2010

20-23 April 2010, Manchester Central Convention Complex

STIs, HIV and unusual rashes from unusual places

Tropical fungal skin infections & HIV

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Skin disease in HIV patients

- High prevalence
- Early marker of underlying HIV infection
- Atypical clinical presentation
- More severe
- More persistent
- Refractory to conventional treatment
- Recurrent
- May indicate progression of HIV

Skin disease & HIV infection

Higher incidence of:

- Drug reactions eg. SJS, TEN
- STDs
- Skin cancers eg. BCC, SCC, KS

- Inflammatory skin diseases
- Skin infections/ infestations

Correlation of skin disease with CD4 count,
Goldstein *et al, J Am Acad Dermatol*, 1997

500 HIV+ patients

15% CD4 > 200
22% CD4 50-200
63% CD4 < 50

		Mean CD4
• Herpes zoster	2.1%	400
Commonest diseases (> 66%)		
• Drug reaction	6.3%	300
• Condylomata acuminata	8.0%	
• Kaposi's sarcoma	8.5%	
• Eosinophilic folliculitis	4.0%	
• Pruritic papular eruption	11.0%	< 100
• Herpes simplex	10.8%	
• Molluscum contagiosum	8.1%	
• Seborrhoeic dermatitis	7.4%	
• Xerosis	5.3%	

Infectious skin diseases

Viral
- VZV
- HSV
- HPV
- Pox virus

Bacterial
- Staph aureus

Fungal
- Candida, Malassezia
- Tinea: dermatophytes
- Deep cutaneous & disseminated opportunistic

Tropical infections involving the skin

- Leprosy (immune reconstitution)
- Leishmaniasis (visceral leishmaniasis)
- Tuberculosis (tuberculids)
- Mycoses (deep cutaneous & disseminated)
- Onchocerciasis
- Lymphatic filariasis
- Trypanosomiasis
- Schistosomiasis
- Amoebiasis
- Dengue fever
- Viral haemorrhagic fevers
- Rickettsial infections

Systemic & opportunistic mycoses

- Cryptococcosis
- Histoplasmosis
- Penicilliosis (SE Asia)
- Paracoccidioidomycosis (Latin America)
- Coccidioidomycosis (SW USA, Latin America)

Endemic Pulmonary

Subcutaneous mycoses

- Mucormycosis
- Sporotrichosis
- Mycetoma
- Chromoblastomycosis
- Lobomycosis (Amazon, Latin America)

Differential diagnosis

- Cryptococcus
  Cutaneous dissemination 10-15%
- Histoplasmosis
  Cutaneous dissemination < 5%
- Penicilliosis (SE Asia)
  Cutaneous dissemination > 50%

Fungal dissemination to skin

- First clue to underlying infection
- Non-invasive investigations
- Molluscum-like lesions common presentation
- Predilection for face & upper part of body
- With HIV, atypical lesions

Molluscum-like lesions
How to differentiate between the mycoses?

- Cryptococcosis
- Histoplasmosis (+ mucosal)
- Penicilliosis
- Paracoccidioidomycosis (+ mucosal)
- Coccidioidomycosis
- Aspergillosis

Characteristic endemic regions

Polymorphic: Histoplasmosis
Paracoccidioidomycosis

Histoplasmosis – *H.capsulatum*

- Inhalation of spores ← soil, avian droppings

- Disease progression & severity depend on:
  - Intensity of exposure
  - Host immunity

Haematogenous dissemination usually resolves with development of cell-mediated immunity

Histoplasmosis & HIV

Progressive dissemination

Reactivation of prior infection

- Fever, weight loss,
- Polymorphic skin lesions: molluscum-like, nodules, ulcers
- Painful mucosal lesions
- Lymphadenoapthy, hepatosplenomegaly

Penicilliosis – *Penicillium marneffei*

- Endemic SE Asia, S China
- Rare before AIDS epidemic
- 3rd opportunistic infection after TB and crypto
- 10-25% prevalence with HIV
- Advanced HIV infection, CD4<100

- Fever, weight loss, pulmonary, lymphadenopathy, hepatosplenomegaly
- Skin lesions (upto 70%)

P. marneffei - diagnosis

- Biopsy: skin, lymph node, bone marrow
- Culture: blood, bone marrow
- PCR

Paracoccidioidomycosis
Paracoccidioides brasiliensis

- Endemic in Latin America, 80% Brazil
- Previously confined to rural areas (agriculturalists)
- ↑ Urban areas & immunocompromised

Pulmonary infection + dissemination
→ mucocutaneous
→ reticuloendothelial system

Fatal: pulmonary fibrosis, CNS, Addisonian crisis

Paracoccidioidomycosis

- With HIV:
  - 80% dissemination (cf 2% immunocompetent)
  - 60% skin involvement (cf. 10% non-HIV)
- Polymorphic skin lesions
- Centrofacial localization
- 50% pharangyeal/ nasal ulcers
- Massive cervical lymphadenopathy (scrofuloderma-like)

Paracoccidioidomycosis – DIAGNOSIS

- Direct microscopy (ulcer secretion)
- Biopsy (skin)
- Fine needle aspiration cytology (lymph node)
- Culture (sputum/ skin)

Subcutaneous mycoses

- Mucormycosis (worldwide)

Traumatic inoculation, localized, chronic:

- Sporotrichosis (worldwide)
- Mycetoma
- Chromoblastomycosis
- Lobomycosis (Amazon, Latin America)

Subcutaneous mycoses: investigations

- Direct microscopy with KOH
- Culture
- Histology
- Radiology (Xray/ US/ CT)
- (Serology – monitor infection)

MUCORMYCOSIS, ubiquitous saprophytes

Class Zygomycetes, Order Mucorales

Mucor or *Rhizopus* species

Rare but aggressive opportunistic infection

Predisposing conditions:

- Diabetes (DKA)
- Organ transplantation
- Long-term immunosuppressants
- Leukaemia/ lymphoma
- AIDs

Mucormycosis

Infection acquired:

- Inhalation
- Ingestion
- Deposition of spores in wounds

Fungi invade and grown within blood Vessels → thromboembolism → necrosis

Mucormycosis

Clinical variants:

- Rhino-orbital-cerebral
  (commonest but highest mortality)
- Pulmonary
- Disseminated
- Gastrointestinal
- Primary cutaneous (best prognosis)

Management of mucormycosis

- Prompt recognition
- Tissue biopsy to demonstrate fungal morphology
- Radiological imaging ?intracranial involvement
- Multidisciplinary management – surgical emergency
- Treatment of predisposing factors eg. DKA, HIV
- Aggressive surgical debridement
- IV antifungals (amphotericin)

Mucormycosis & HIV

- Rare
- Severe
- Overall mortality of 40%
- Disseminated or affects multiple sites

  eg. Basal ganglia, kidneys, respiratory tract
- Disease often inaccessible to surgical debridement

Sporotrichosis - *Sporothrix schenckii*

Saprophyte, worldwide distribution

Traumatic inoculation
Gardeners, florists, forestry workers, miners

- Fixed-type - nodular
  - ulcerative
- Lymphocutaneous
- Disseminated (with HIV infection)

HIV & disseminated sporotrichosis

- Uncommon, advanced HIV infection
- Haematogenous spread of asymptomatic pulmonary infection

- Ulcerative cutaneous lesions
- Pyelonephritis
- Arthritis
- Meningitis
- Osseous infection

Treatment: amphotericin, itraconazole

Diagnosis

- Direct microscopy
- Culture
- PCR (useful in fixed cutaneous lesions with few parasites)
- Histopathology –
  non-specifc granulomatous reaction

Summary

- HIV patients are at risk of opportunistic fungal infections
- May disseminate to the skin allowing early detection of infection
- Skin lesions allow non-invasive means of diagnosis
- Paracoccidiodomycosis has a long latency period and must be considered in patients with history of travel to endemic regions
- Mucormycosis is rare but rapidly fatal and requires early tissue sampling and involvement of mycologists