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VL-HIV co-infection in East Africa Current Challenges and Perspectives

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Outline of Presentation

- VL-HIV co-infection in East Africa (focus on Ethiopia)
 - Evolution and trends in incidence and geographical spread
 - Current diagnostic and treatment approaches
 - Outcome data (published and unpublished)
 - Major clinical research questions

East Africa and VL

- Second largest VL foci region in the world
- Annual case report:
 - Sudan – 30,000 cases
 - Ethiopia – 5,000 cases



VL Endemic Areas in Ethiopia

**Highest VL-HIV
coinfection –
North-West
Ethiopia**

 VL endemic
areas



HIV co-infection rate: 20-30%

Main Care and Treatment Providers for Leishmania in

Ethiopia
DNDi

Drugs for Neglected Diseases *initiative*



FMoH
-Task Force
- National Guideline

- The medical care for leishmania patients is for free with the support of the partners
- The medical service in Ethiopia for the poor populations is for free

VL Endemic Area



Magnitude of VL-HIV Co-infection, Ethiopia

| Study | Place, study period | Sample size | HIV prevalence | Over all VL case fatality | VL/HIV mortality |
|-----------------------|------------------------------|--------------|----------------|---------------------------|------------------|
| | AA, Army Hospital, 1992-2001 | 291 soldiers | 48.5% | | |
| Ritmeijer K (3), 2001 | Humera, 1998-99 | 145 | 18.6% | | |
| Lyons (4), 2003 | Humera 1998-2000 | 213 | 23% | | |
| Ritmeijer K (5), 2006 | Humera, 2004 | 375 | 29% | | 14.3% |
| Mengistu G, (6)2007 | Gondar hospital, 1999-2004 | 212 | 87 (41%) | 24.4% | 39.3% |
| Unpublished | Addis Zemen, 2005 | | 10-15% | | |
| Unpublished | Southern regions | | <2% | | |

HIV/VL in Sudan

- 2002 (all age) - Southern Sudan (rural) – 0.4%
- 2005 (adults) – Southern Sudan (urban) – 5%
- 2005 (adults) - Um-el-Kher/Eastern Sudan – 9%

- **Other East African Countries (Kenya, Somalia,..)**
 - Rarely reported

Diagnosis

- Case definition
 - Fever > 2 weeks
 - Splenomegaly
 - Weight loss
 - Visit to endemic area
 - Malaria excluded
- Serology tests (rk39, DAT)
- Tissue aspirate and parasite detection (definitive)

Comparison of VL with and without HIV coinfection (Hurissa et al, 2010)

| Clinical condition | VL/HIV- (%) | VL/HIV+ (%) | OR |
|-----------------------------|-------------|-------------|------------------|
| Fever | 98.7 | 95.7 | 1 |
| Splenomegaly | 100 | 100 | 1 |
| Diarrhoea | 26.2 | 41.3 | 0.96 |
| Respiratory findings | 4.1 | 8.7 | 0.45 |
| TB | 6 | 27.2 | <0.001 |
| Sepsis | 10.1 | 14.1 | 0.339 |
| Other OI | 0 | 15.2 | |
| Good outcome | 94.6 | 68.5 | <0.001 |
| Treatment failure (initial) | 0 | 14.1 | |

Atypical Clinical Manifestations in VL-HIV

visceral leishmaniasis
and diffuse nodular
skin lesions



HIV infected patient with
fever of unknown origin

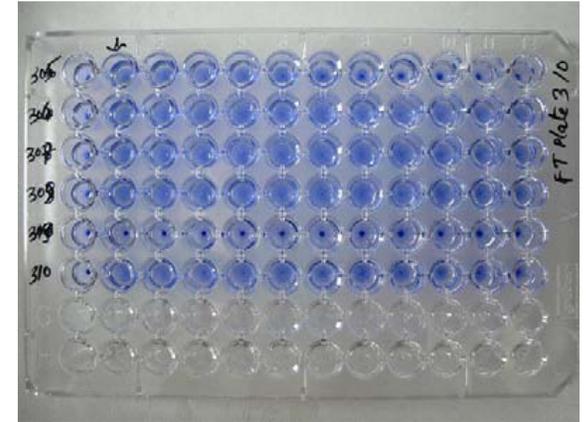
Kaposi sarcoma like lesions in an HIV patient with a positive microscopy for LD bodies



Unusual clinical features delay diagnosis of leishmaniasis

Performance of Rapid tests

- **Variable and inconsistent findings**
- **sensitivity of rk39 ELISA – 22% in Spain** (Medrano et al, 1998)
- **Few studies in East Africa**



| Sensitivity | Rk39 | DAT |
|--------------|------------------|------------------|
| HIV negative | 87% / 84% | 87% / 94% |
| HIV positive | 77% / 77% | 75% / 89% |

MSF Experience
in North West
Ethiopia

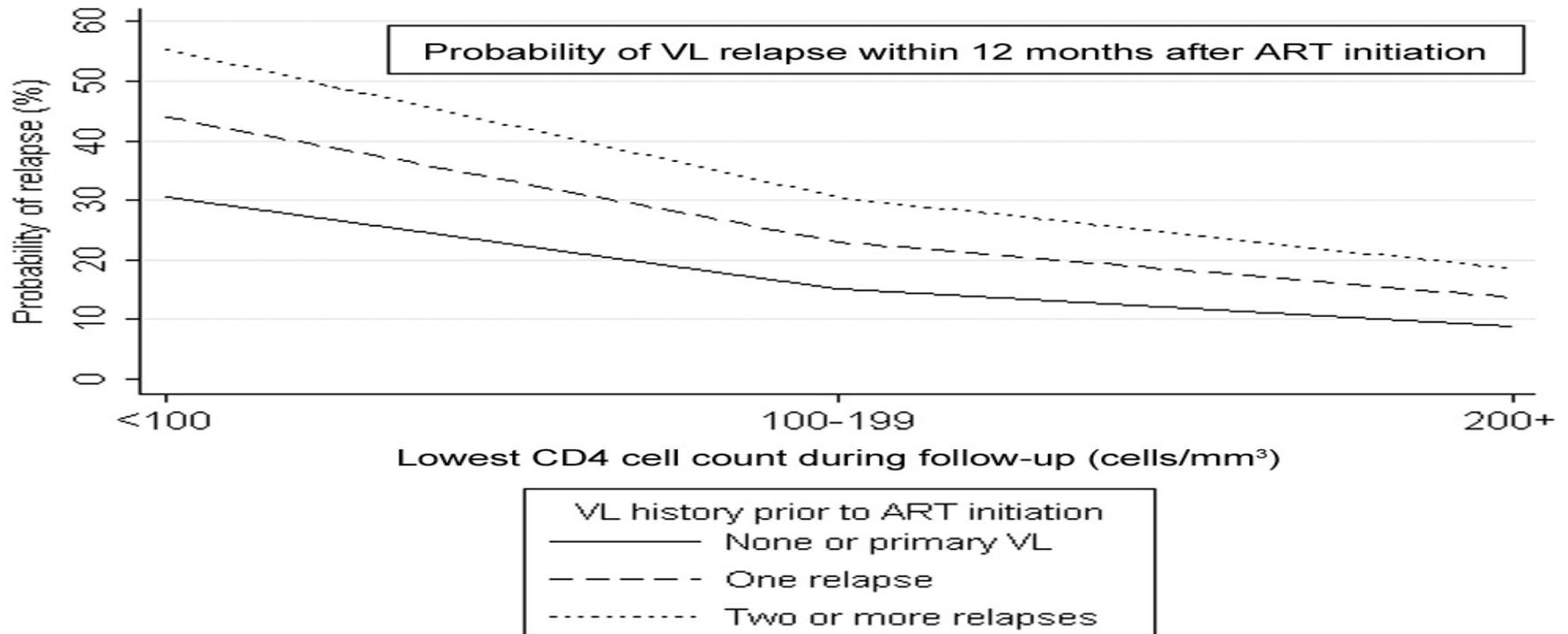
Black and red written figures are from different studies

Treatment Outcomes (antimonials)

| | | HIV Neg | HIV Pos |
|---|-----------------------------------|--------------|--------------|
| Ritmeijer K et al. 2001, Experience from Humera, N- W Ethiopia | No treated | 112 | 27 |
| | Death during treatment | 3.6% | 33.3% |
| | Final cure (6m) | 92.1% | 43.5% |

| Case fatality rate | All VL | VL HIV |
|-----------------------------|---------------|---------------|
| Mengistu G, Gondar, 2007 | 24.4% | 39.3% |

High Probability of Relapse



probability of relapse associated with CD4 cell count (post commencement of ART). Source: ter Horst *et al*, 2008; *CID*, 46: 1702-9

Challenges

- Increased prevalence of co-infections
- Atypical clinical picture
- Diagnostic challenges
 - Atypical manifestation
 - Low yield of easy diagnostics (serology)
 - Need for repeated invasive procedures
- Management challenges
 - High failure and relapse rate

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