Emergence of unique primate T-lymphotropic viruses among central African bushmeat hunters
Wolfe et al 2005 (PNAS)

Ch 5-No one’s idea of a tropical paradise: Haitian immigrants and AIDS
From Markel When Germs Travel
Wolfe et al 2005 (PNAS)

- PLTVs: Primate T-lymphotropic viruses
  - STLVs in nonhuman primates (NHPs)
  - HTLVs in humans, regardless of zoonotic origin
- Distinct groups 1, 2, and 3
  - HTLV-1 and HTLV-2 emerged from PLTV analogs
  - PTLV-3 has no human analog
Wolfe et al 2005 (PNAS)

- HTLV infects 22 million people globally
- Spread sexually, from mother to child, by exposure to contaminated blood (transfusions, IV drugs)
  - No evidence of transmission from NHPs occupationally
  - Recent reports of NHP transmission through natural exposure
- HTLV-1 causes adult T cell leukemia, HTLV-1 associated myelopathy/tropical spastic paraparesis, and other inflammatory diseases
- HTLV-2 less pathogenic, associated with neurological disease
• Methods
  – 11 rural villages in Southern Cameroon
    • Near NHP habitats
  – Surveys to assess behaviors that exposed participants to HNPs
    • ID NHPs, quantify exposure
  – Blood samples on those with NHP contact
    • HTLV antibody screening
    • PCR and sequencing

Wolfe et al 2005 (PNAS)
Wolfe et al 2005 (PNAS)

- Human infection with novel PTLVs
  - New PTLV: HTLV-4
  - 26-34% (*pol*) and 18-25% (*tax*) nucleotide divergence
  - Suggests a long independent evolution, branch of PTLV-2
Wolfe et al 2005 (PNAS)

- Human infection with PTLV-3
  - Similar to STLV-3s in West Africa
  - Suggests infection likely acquire zoonotically through exposure to NHP
  - Cannot exclude possibility of recent cross-species transmission
Wolfe et al 2005 (PNAS)

- Diverse samples of HTLV-1
  - Some subtypes only previously in NHPs
  - Other subtypes associated with specific NHP groups
  - High % shared nucleotides with STLVs

- Strong case for recent zoonotic transmission
• Contact with blood and body fluids of NHPs major factor in emergence of novel HTLVs
• Frequent cross-species transmission based on diversity and shared sequences
• Successful cross-species transmission may not be primary constraint on retrovirus emergence
  – Post-transmission steps: viral adaptation and evolution
Wolfe et al 2005 (PNAS)

- Implications: Increased public health surveillance
  - More screening for new HTLVs
    - Blood banks don’t screen for HTLV
    - Current assays don’t distinguish between HTLVs
  - Health exams of participants with HTLV 3 and 4
    - Disease? Transmissible between humans?
"the shroud of blame can be confusing, misleading, and entirely beside the point of protecting the public health" (Markel 150)
Markel Ch. 5

• 4-H club: high risk groups
  – Homosexuals
  – Heroin users
  – Hemophiliacs
  – Haitians

• Labeled as a member of the group synonymous to being “both a carrier of AIDS and a public health threat”
Markel Ch. 5

• 1986-1991: Ban on HIV+ persons into US

• 1991: HIV+ tourists okay

• 1993: Clinton allowed HIV as legitimate reason to prevent entry to US
Haitian immigrants
1991
- 40,000 refugees intercepted, 75% returned to Haiti
- 12,000 detained in Guantanamo bay for possible entrance to US
- Blood tests given to all refugees detained to screen for HIV
Markel Ch. 5

- Confinement camps
  - Crowded, poor sanitation, high disease prevalence
  - Separate camp for HIV+
  - Little health care, disrespectful
  - Forced Depo Provera injections
Markel Ch. 5

• 1993 Trial to release detained Haitians

• "Haiti is a prison and so is Guantanamo. In both places, the military is in charge and no one has any rights" Frantz Lieuman (Markel 174)