**Ebola**

Summary

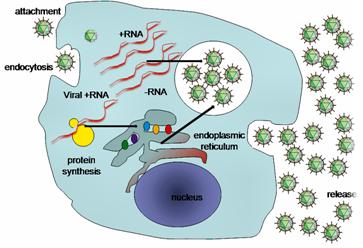
* Introduction
* 1) Viruses
* 2) Interspecies Transmission processes
* 3) Biodiversity Damage
* Conclusion / Opening

1. Virus

a : What is a virus?

* + - Considered like a non-living entity
    - Needs a host to survive
    - 2 types: DNA and RNA virus
    - Life cycle

Life cycle



b : Description of Ebola Virus

* + - Photography
    - Infection processes
    - Specificities

Ebola virus Photography

80 nm in diameter

Filovirus family

~ 19000 nucleotids

288 amino acids

codes for seven structural proteins and one non-structural protein



Infection processes

* Blood
* Organ secretion
* Body fluids

Specificities

* 4 types of Ebola virus :
  + - Zaire
    - Sudan
    - Ivory Coast
    - Reston
* Incubation period : 2 to 21 days
* Pathologies : hemorrhagic fever, death by stroke

1. Human contagion
   * 1. Transmission between species
     2. Geographical distribution
     3. Mode of action and Symptoms

Transmission between species

Mecanism of action

* Every tissues are affected, excepted bones and muscles.
* The virus creates blood clots.
* Clots goes towards internal organs (lungs, eyeballs…).
* It prevents oxygen to rise tissues.
* The virus also destroys connective tissues (affinity with collagen).

Symptoms

* Initial symptoms :
  + High temperature (at least 38.8°C)
  + Muscle, joint, abdominal pain
  + Nausea
  + Blood stream slow down
* Late symptoms:
  + Diarrhea
  + Vomitting blood
  + Hemorrhage of sclerotic arterioles
  + Internal and external haemorrhages from orifices (nose, mouth, skin, eyes)

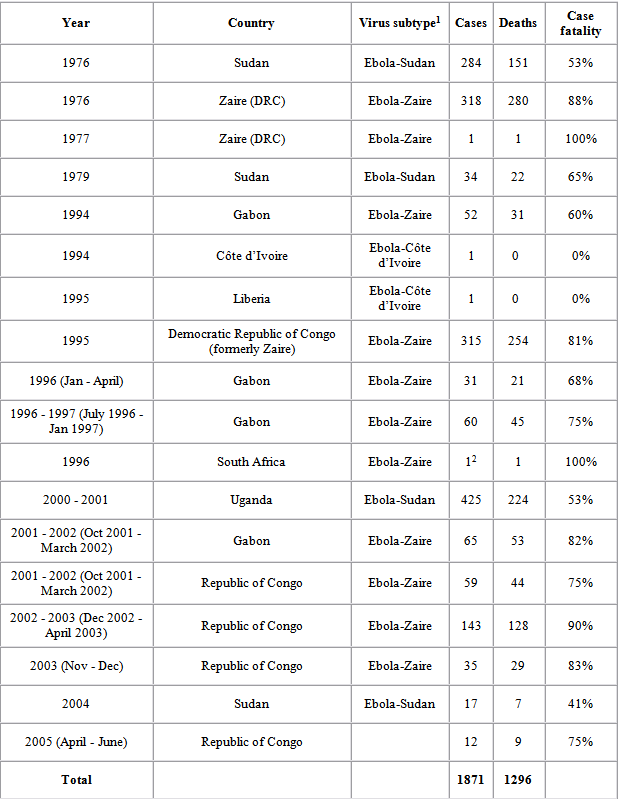
1. Biodiversity damages

Lethality rate : between 50% and 90%

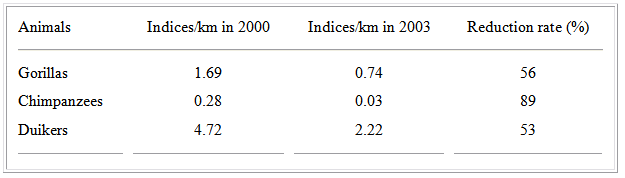
Death after 6-10 days

Outbreaks of Ebola Virus in Africa from 1976 to 2005

*(OMS)*



Gorilla, chimpanzee, and duiker population indices



*Multiple Ebola virus transmission events and rapid decline of Central African wildlife, SCIENCE, 2004.*

Conclusion

* Ebola virus is extremely virulent
* The infected organism does not have time to react to the virus
* First symptoms appear during the critical period.

Opening

* Methods needed to detect the virus as soon as possible: PCR ≠ ELISA techniques
* How bats can be protected against the Ebola Virus?