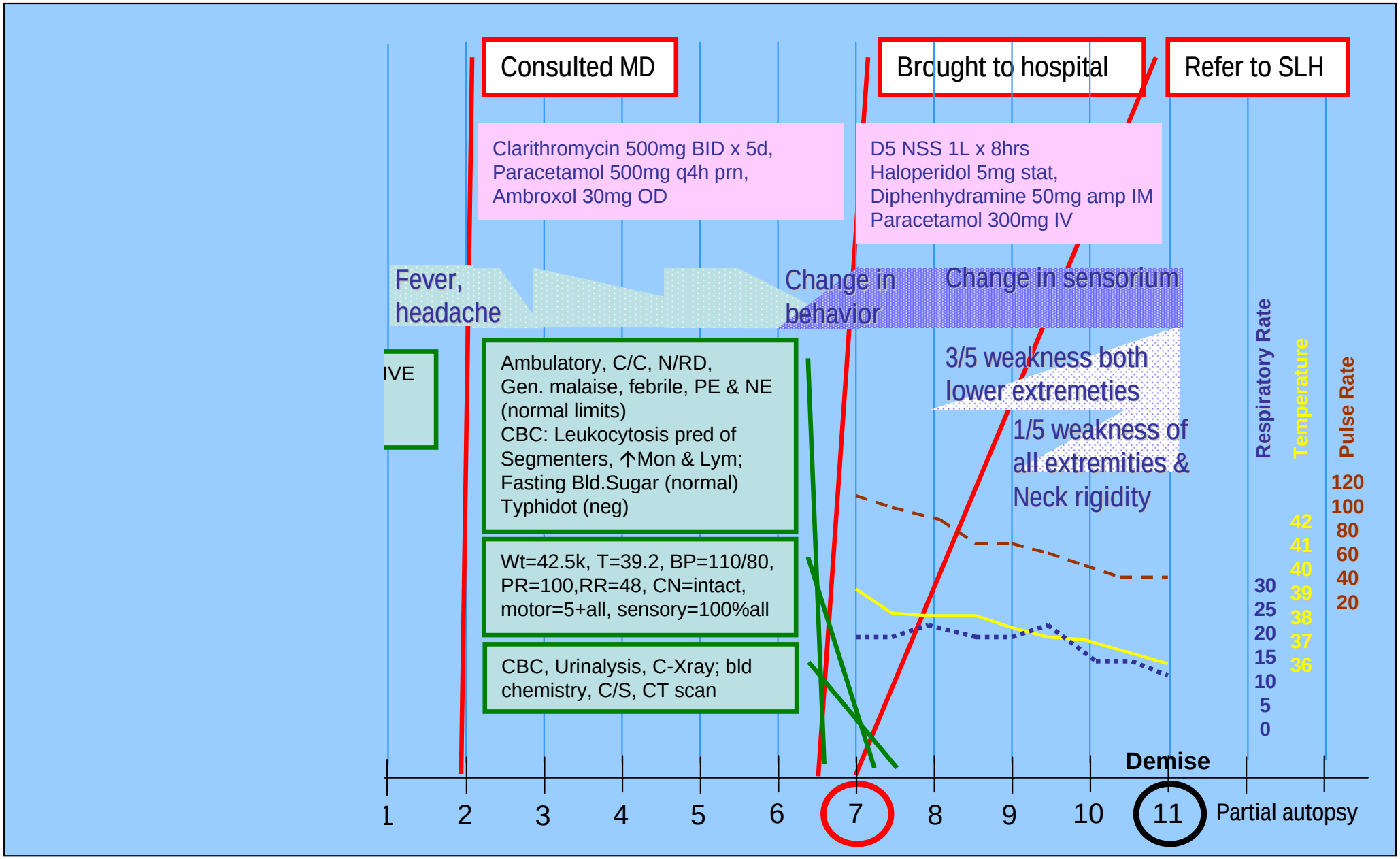

St. Luke's
Medical Center
One of the world's best
Uncommon Cause of Flaccid Paralysis in a 14 year old Filipino
Miguel Martin N. Moreno II, M.D., Kei Miyagi, M.D.,Ph.D.,
Judith M. Reyes, M.D., Filipinas F. Natividad, Ph.D.
Accredited by:
Joint Commission
INTERNATIONAL
SINCE 2003

Objective

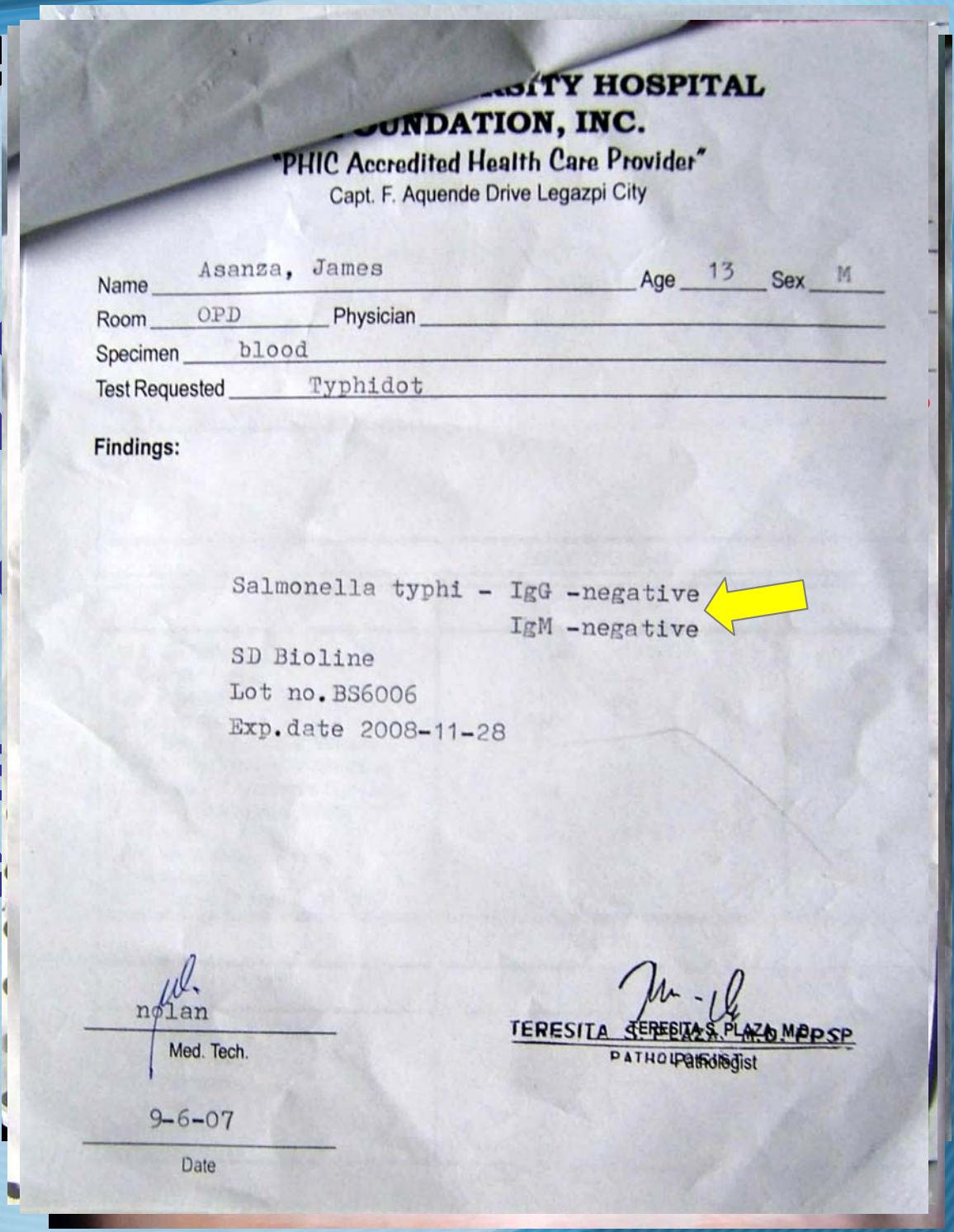
- To present a case with an uncommon cause of flaccid paralysis in a 14 year old Filipino
- Compare our case with literature
  - Similar cases have been encountered in our country, but no documentation has ever been made
  - This may be the first fully documented case of such in the Philippines.

Clinical Course



Out-patient Lab Re

- Direct microsc
- Fluorescent An
- Complete Bloo
- Chest x-ray
- Fasting Blood S
- Typhidot – IgG



ITY HOSPITAL
UNDATION, INC.
"PHIC Accredited Health Care Provider"
Capt. F. Aquende Drive Legazpi City

Name Asanza, James Age 13 Sex M
Room OPD Physician
Specimen blood
Test Requested Typhidot

Findings:

Salmonella typhi - IgG -negative
IgM -negative

SD Bioline
Lot no. BS6006
Exp. date 2008-11-28

nolan
Med. Tech.

9-6-07
Date

TERESITA S. PLAZA, M.D., FPSP
PATHOLOGIST
Pathologist

In-patient Lab Re

- Compl
- Clinica
- Urinal
- Cultur
- CT Sca

National Refer
STD/AIDS Co
DOH, San Lazaro
Tel Nos: 309-952

Name: JAMES EMMANUE
Pavilion: 3
Clinical Impression: VIRAL ENCEPH

I. CULTURE ISOLATE: ____

II. SENSITIVITY TEST:

ANTIBIOTIC	
Amikacin	AK/ AN
Ampicillin	AP
Amp/Sulbactam	SAM
Amox/Clav. Acid	AMC/AUG
Aztreozam	ATM
Azithromycin	AZM
Cefepime	FEP
Cephalotin	KF, CF
Cefotaxime	CTX
Ceftazidime	CAZ
Ceftriaxone	CRO
Cefuroxime	CXM

REMARKS: FOR

RHRectra, R
Medical Technologist

i.scan
CT DIAGNOSTIC CENTER INC.

77 Malakas St.,
Quezon City
928-6197 • 927-2659

ASANZA, JAMES EMMANUEL 14/M 07-3358
DR. MORAN 09/08/07 SLH

C.T. SCAN OF THE HEAD

Plain and contrast enhanced axial images reveal no intracranial hemorrhage and mass lesion.

There are symmetrical low density zones in lenticular nuclei of both basal ganglia without contrast enhancement.

The rest of the supra and infratentorial gray as well as the white matter densities are normal.

The ventricles and cerebral sulci are not dilated.

The midline structures are not displaced.

There is no vascular malformation.

The sella turcica, posterior fossa and basal skull structures are unremarkable.

IMPRESSION:

1. LOW DENSITY ZONES OR EDEMA IN BOTH BASAL GANGLIA PROBABLY DUE TO AN INFLAMMATORY PROCESS (ENCEPHALITIS)
2. NO INTRACRANIAL HEMORRHAGE OR MASS.

Ignacio O. Lim, M.D.

Thank you for your referral

i.SCAN CT Diagnostic Center, Inc. 77 Malakas St., Quezon City.
928-6197 • 927-2659

Salient features

- Previously healthy 14 year old male
- Presented with flu-like symptoms a month after being bitten by a rabies-positive stray dog in the left leg
- Post exposure vaccination by HRIG was given on the 7^{th} and 10^{th} day after being bitten
- Clinical course from onset of signs & symptoms to demise lasted for only 11 days.

Clinical Diagnosis

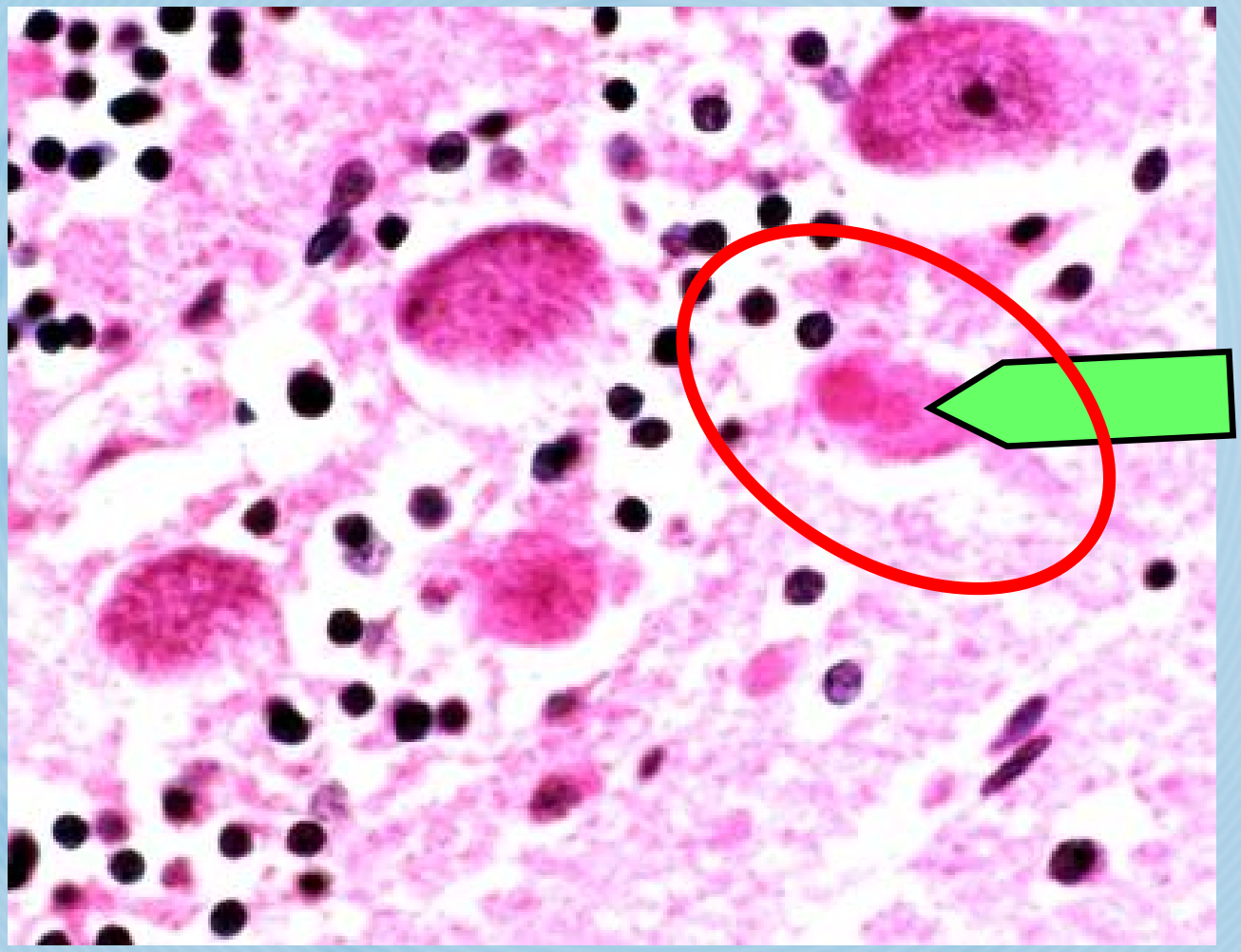
Rabies, Paralytic / Dumb type

Partial Autopsy (Cranium)

- Edematous, congested brain
- No hemorrhages

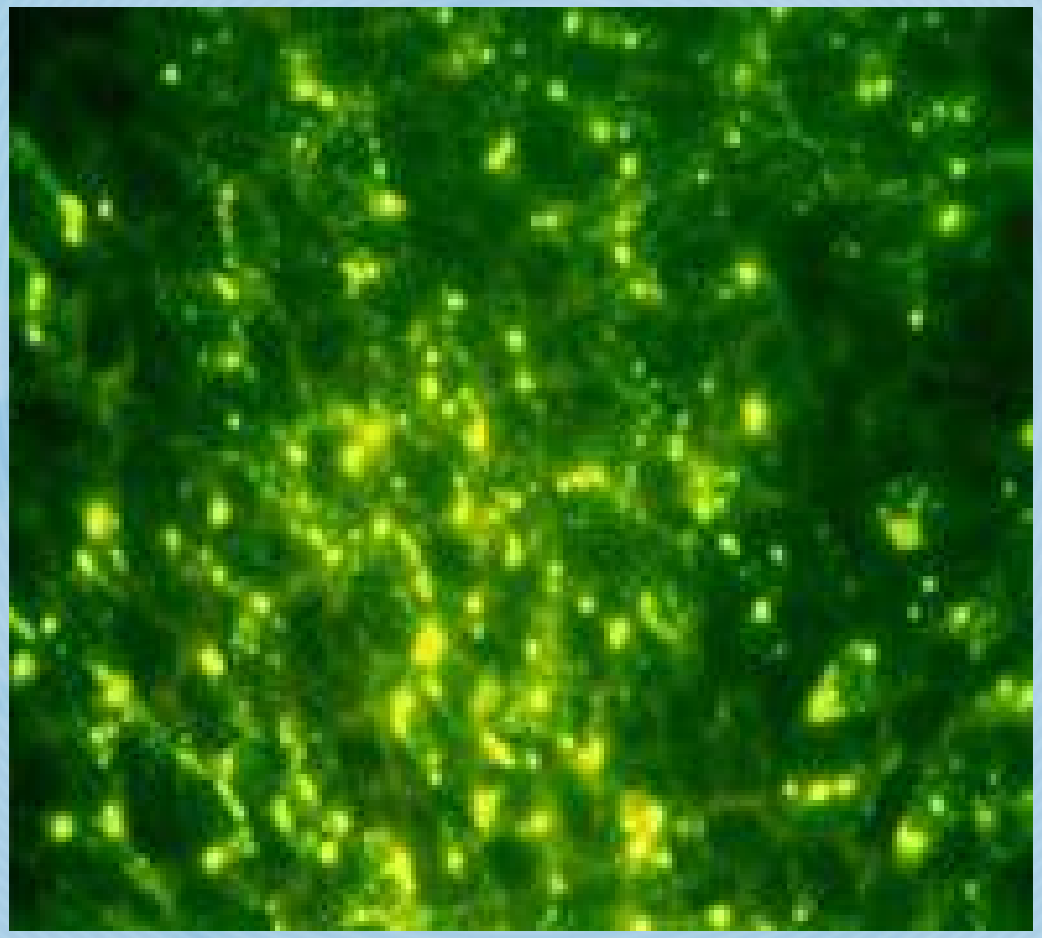
Post Mortem lab analysis

- H & E of brain tissue



Post Mortem lab analysis

- Direct fluorescent antibody test



Post Mortem lab analysis

- Electron Microscopy (negative stain)

Final Diagnosis

Rabies infection,
Paralytic or Dumb type

Paralytic Rabies (Dumb type)

- Seen on 20% of all cases
- Initially non-specific S/Sx of a viral inf'n
  - Fever, headache, malaise, Resp and Git disorders
- Negative hydro~ and Aerophobia
- Symptomatic course lasting 4~10 days
- Death within 18 days
- Post-mortem changes
  - Inflammatory changes
  - Vascular changes
  - Inclusion bodies

Overview

- Rabies = Latin for “madness” derived from “rabere” to rave
- Is related to the Sanskrit word for violence, “RHABAS”
- The Greek term for Rabies, “lyssa”, also means madness, and it provides the genus name lyssa virus
- Viral disease that produces almost uniform fatal encephalitis in humans and most other mammals.

History

- First mentioned in the 23rd century B.C.
- Was encoded in the Babylon Eshnuna code during the 23rd century
- 500 B.C. – Democritus provided a clear description of animal rabies
- First century A.D. – wound cauterization was the preferred treatment
- Mid – 20th century – wound cautery for rabid animals
- 1903 – rabies was diagnosed clinically by Aldechi Negri – who described the site cytoplasmic inclusions – the only pathologic markers
- 1958 – development of fluorescent antibody test.

The Virus

- Belongs to the family rhabdoviridae, Bullet shape morphology
- Has two main structural components
  - Phospholipid envelop with surface glycoprotein spikes (G –protein)
  - A helical ribonucleoprotein (RNP) core and N-protein – encases genomic negative, non-segmented, single stranded RNA
- Unstable at pH <3 or >11

The Virus

- Stable for many years when frozen at –70ºC or freeze dried and held at 0~4ºC
- Rapidly inactivated by desiccation, ultraviolet irradiation, sunlight, trypsin, B-propiolactone, ether, detergents, heating at 60oC for 30 minutes

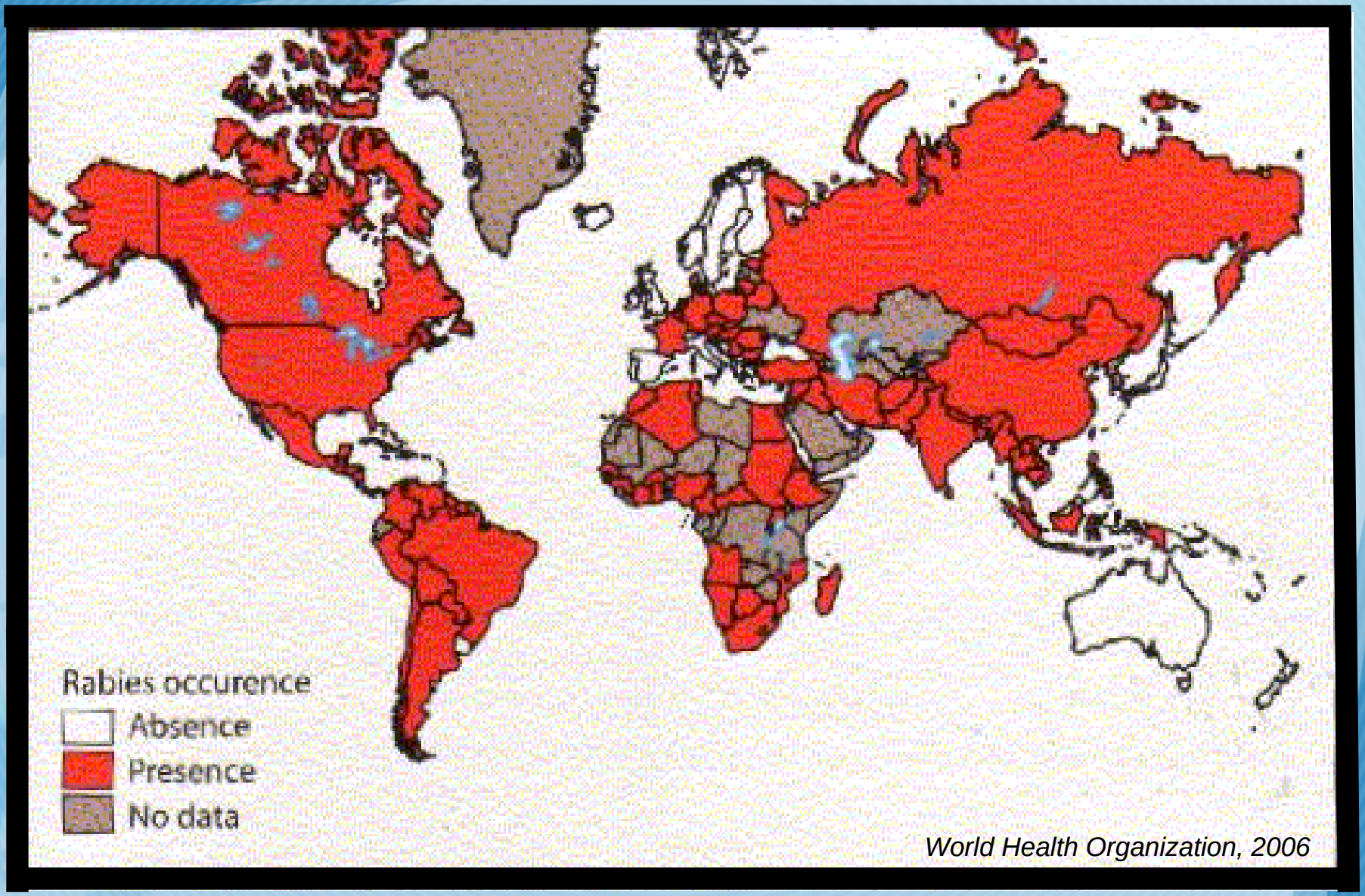
Worldwide Incidence of Rabies

The prevalence of rabies varies throughout the world. The regions most affected are tropical developing countries within Asia, Africa and Latin America, where over 99% of all human deaths reported annually occur.

A. Asia
   1. India
   2. Pakistan
   3. Bangladesh
   4. Vietnam
   5. Philippines
   6. China

B. Africa
C. Americas
D. Europe

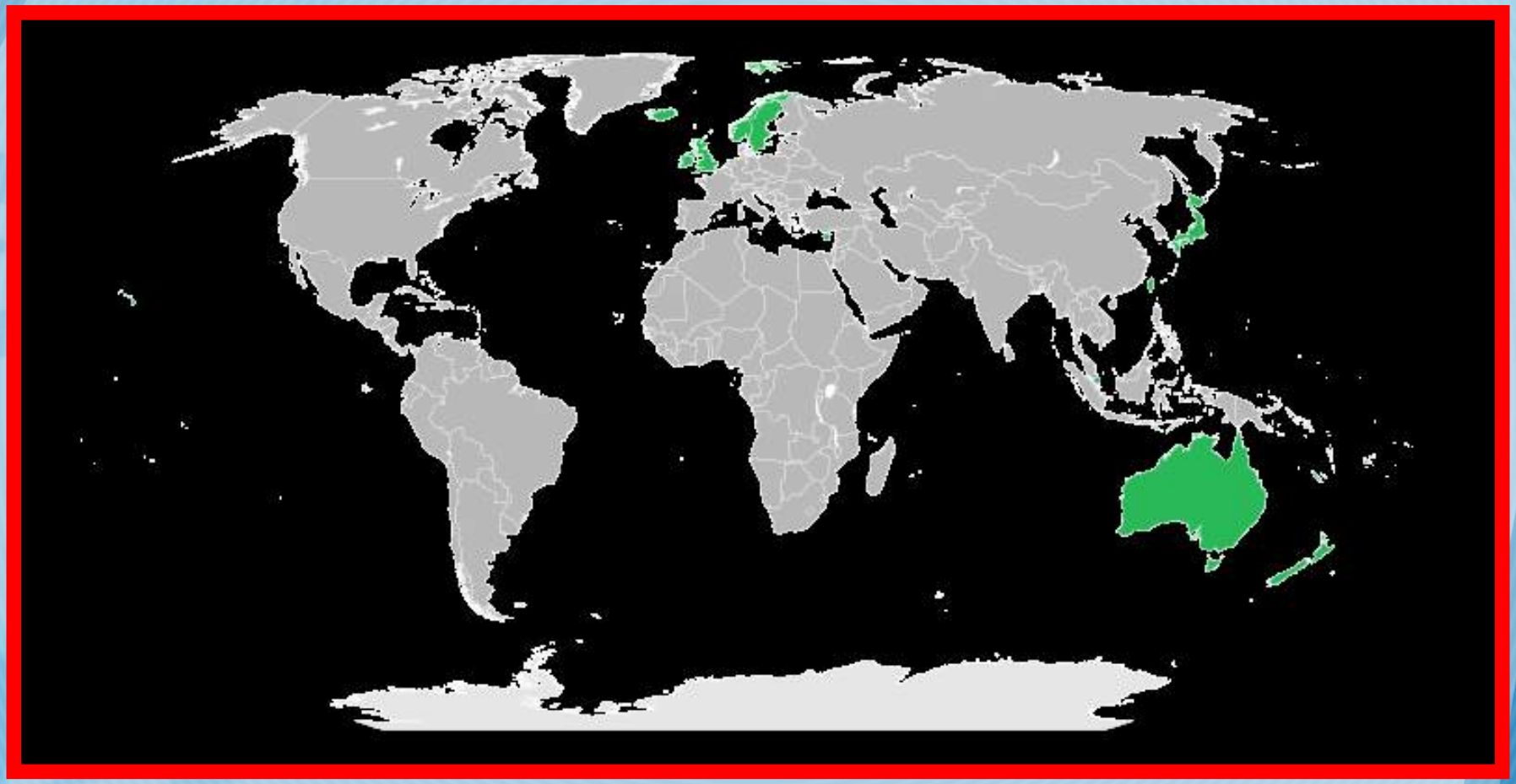
The WHO considers some island countries such as the UK, Iceland, Taiwan, Australia, New Zealand and Japan to be free of terrestrial rabies, as well as some European countries including Greece, Sweden, Finland, and Norway.



World Health Organization, 2006

Rabies occurs worldwide, with very few countries or regions being considered “rabies free”.

Rabies – free countries*



*World Health Organization, 2006

Epidemiology

- Rabies virus circulates in a variety of mammal hosts or “reservoir” depending on the geographic location.
- In developing countries, rabies mainly circulates in the dog population and thousands of human fatalities are caused every year by bites from rabid dogs.
- Rabies can transfer or “spill over” from infected wildlife reservoirs to non- reservoir animals (e.g. cats, monkeys, horses, cattle, sheep and goats).

Rabies exists in 2 epidemiologic forms:

- Urban

  Propagated by unimmunized domestic dogs and cats
- Sylvatic

  Propagated by skunks, foxes, raccoons, wolves, and bats

Rabies in the Philippines*

Incidence = 5-8 per million population

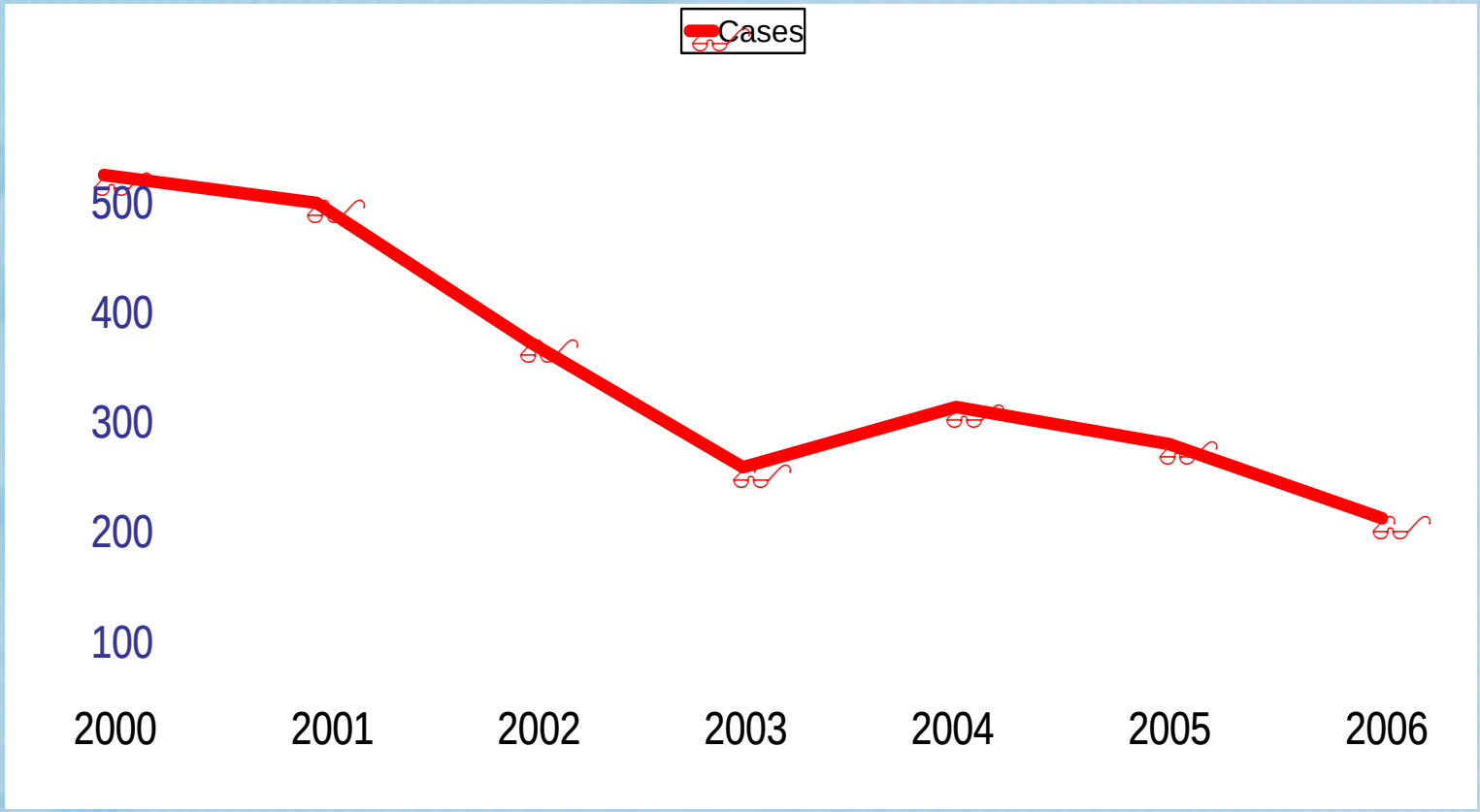
- **200-500 cases/year**
- **male > female**

Age specific incidence rate: 2 peaks

- **5~14 years old**
- **45-64 years old**

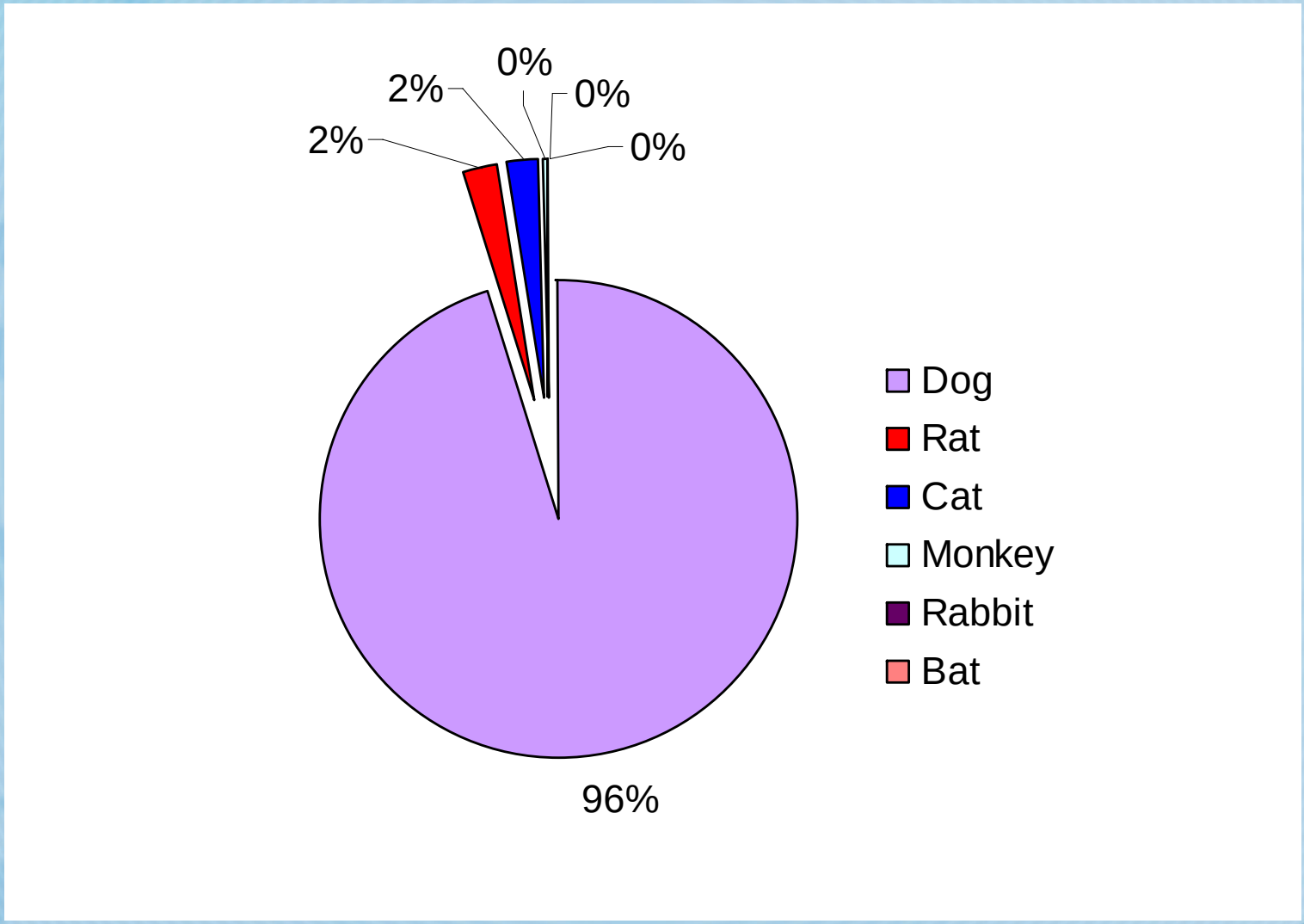
**Philippine Health Statistics, DOH, 2006*

Total In-patient Census for Rabies cases*



** San Lazaro Hospital*

Source of Animal bites consultation*



** San Lazaro Hospital, 2006*

Pathogenesis

Break in skin / mucosal surface → replicates in muscle cell and infects muscle spindle → nerve that innervate spindle → moves centrally within the axon → spinal cord → spreads throughout the CNS → spreads to the rest of the body via peripheral nerves

2 CLINICAL FORMS

A. Furious (Classical) form

- Gross: brain is unremarkable except for vascular congestion
- Microscopic: encephalitis (perivascular lymphocytic cuffing and necrosis) with Negri bodies
- Approximately accounts for 80% of reported human rabies patients
- Between 50-80% develop hydrophobia.

Pathology

B. Paralytic (Dumb) form

- Primarily affects the spinal cord with severe inflammation and necrosis
- Segmental demyelination occurs in the peripheral nerves
- Approximately accounts for 20% of reported human rabies patients
- Flaccid muscle paralysis is a prominent feature of this form
- “Dumb” rabies reflects the paralysis of the laryngeal muscles which inhibits speech
- Mild sensory disturbance may also occur.

Management

- Heavy sedation, adequate analgesia
- Cardiovascular and respiratory support
- Isolation of patient
  - to prevent secondary infection
  - to prevent exposure of staff to rabies virus which maybe present in saliva, tears, and other body fluids.

Acknowledgements

St. Luke's Medical Center
One of the world's best

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Thank you