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About OMICS Group Conferences

OMICS Group International is a pioneer and leading science event organizer, which publishes around 400 open access journals and conducts over 300 Medical, Clinical, Engineering, Life Sciences, Pharma scientific conferences all over the globe annually with the support of more than 1000 scientific associations and 30,000 editorial board members and 3.5 million followers to its credit.

OMICS Group has organized 500 conferences, workshops and national symposiums across the major cities including San Francisco, Las Vegas, San Antonio, Omaha, Orlando, Raleigh, Santa Clara, Chicago, Philadelphia, Baltimore, United Kingdom, Valencia, Dubai, Beijing, Hyderabad, Bengaluru and Mumbai.



Ministério da Saúde
FIOCRUZ
Fundação Oswaldo Cruz
Instituto Oswaldo Cruz

**Expression of cytokines in tissues and
correlation with histopathological changes
in dengue fatal cases from Brazil**

Dr. Marciano Viana Paes
Research in Public Health

Laboratory of Biotechnology and Physiology of Viral Infections /IOC/FIOCRUZ

Dengue

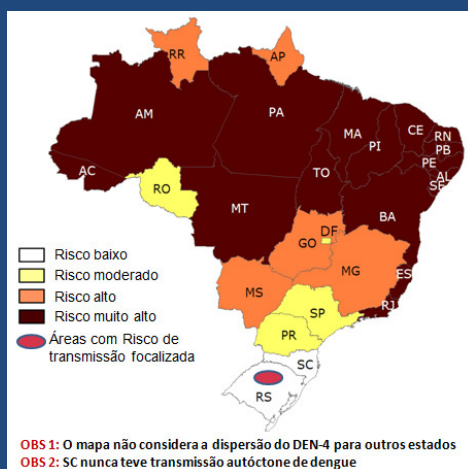
- ✓ Etiological agent: dengue virus
- ✓ Serotypes: DENV-1, DENV-2, DENV-3, DENV-4
- ✓ Genus: Flavivirus
- ✓ Family: Flaviviridae
- ✓ Transmitting agent of the disease: *Aedes aegypti*



Countries / areas at risk of dengue transmission 2012 (WHO)



**2011
(Introduction
of DENV4)**

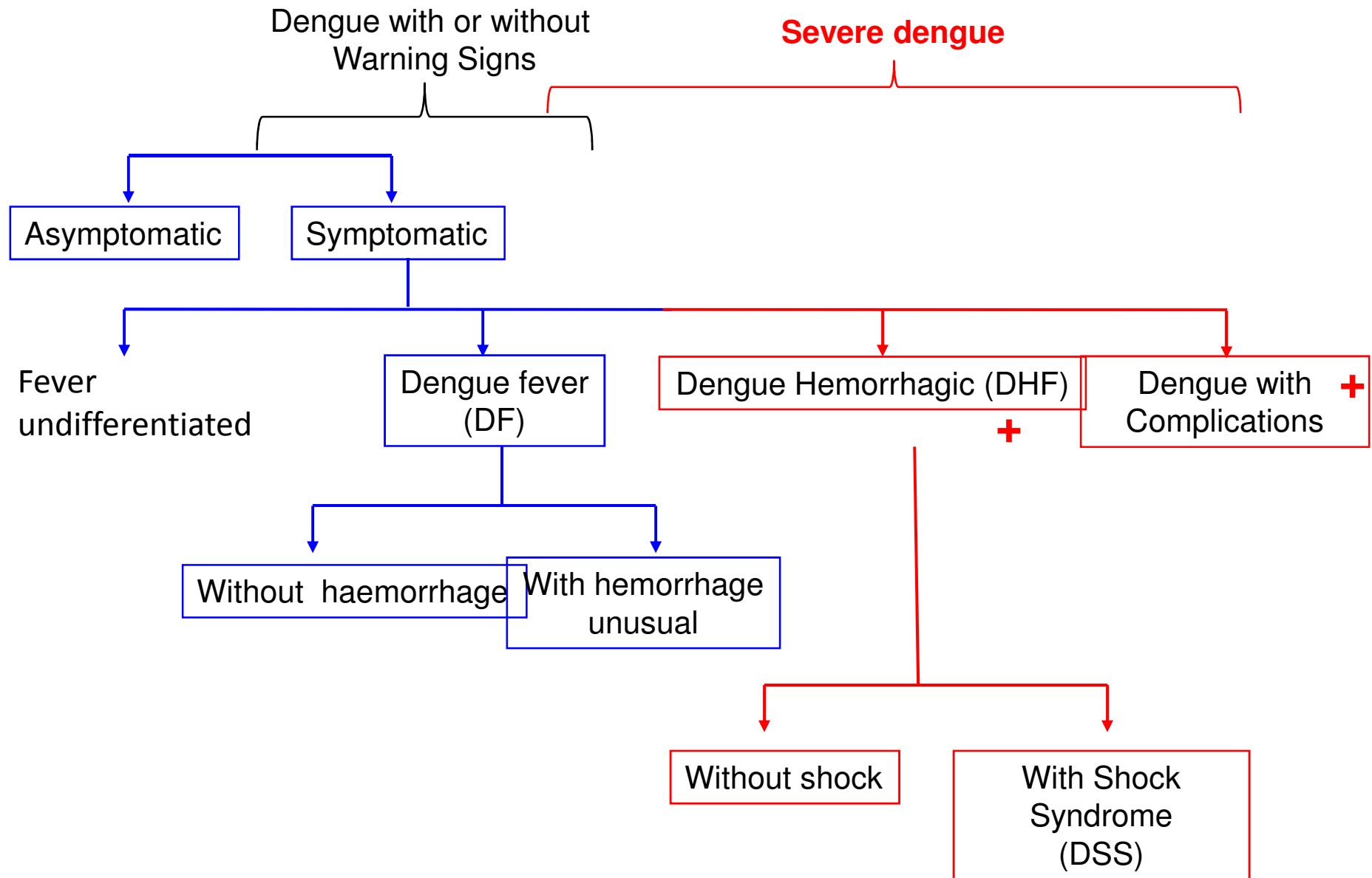


Fonte: <http://www.healthmap.org/dengue/pt> , acessado em abril 2012.

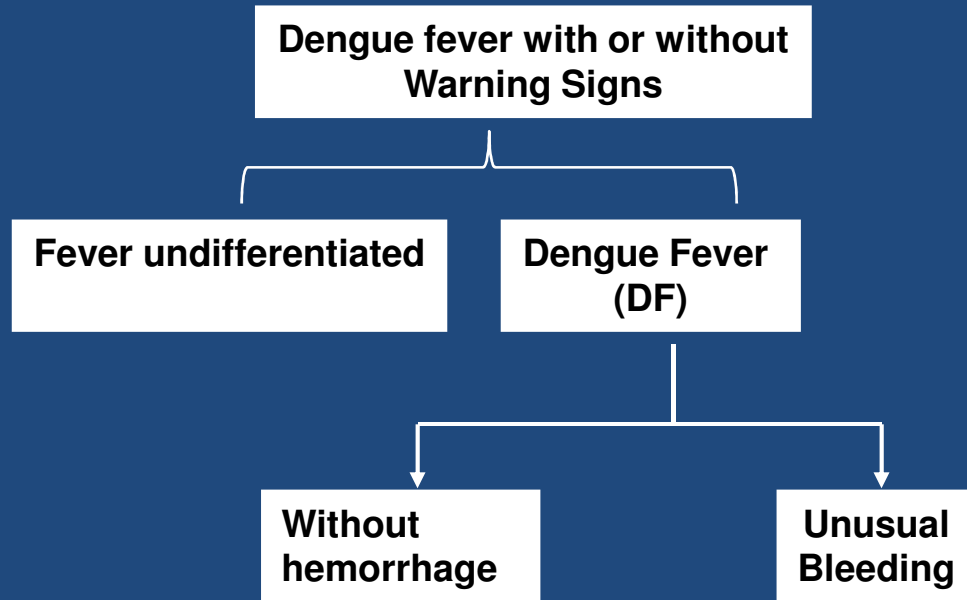
**2012 (January / March)
Nearly 77,000 reported cases**

Fonte: http://www.dengue.org.br/dengue_mapas.html, acessado em março 2012.

Clinical Aspects

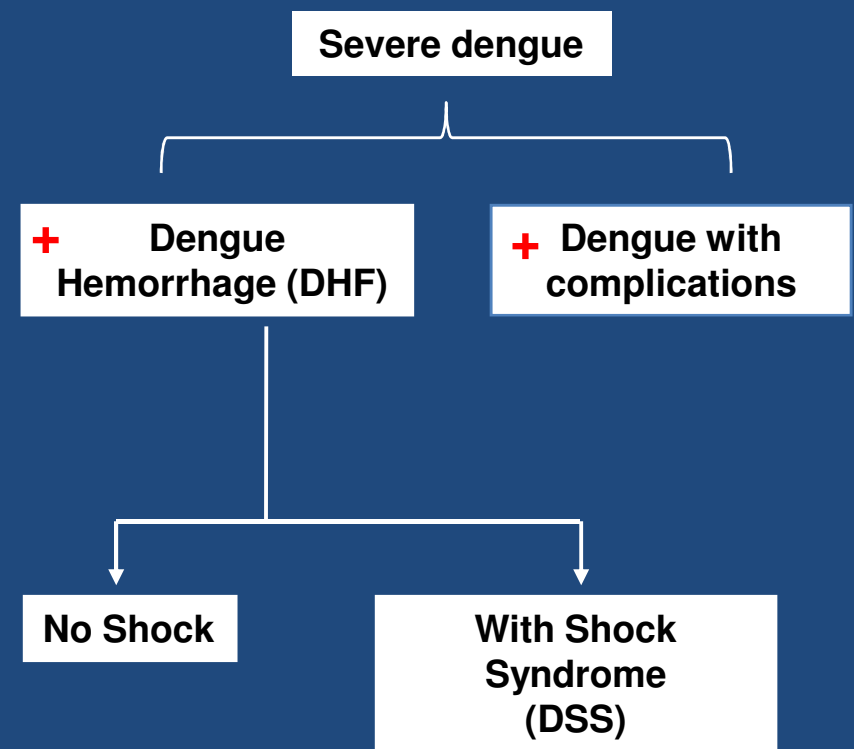


Clinical Aspects



Main Symptoms:

- fever
- headache
- retro-orbital pain
- vomit
- myalgia
- joint pain
- arthralgia
- *rash*



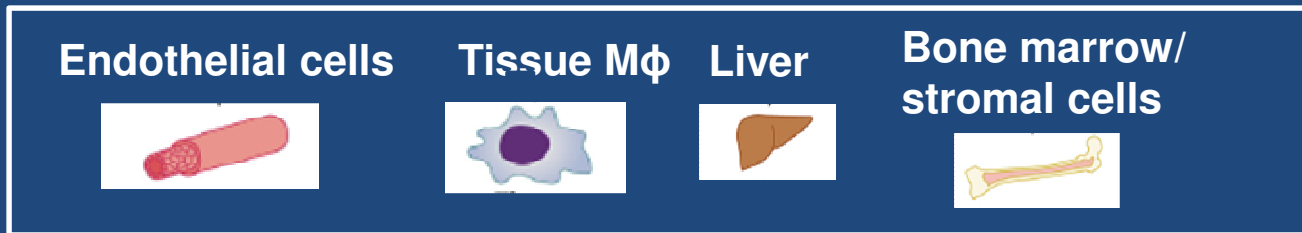
Main Symptoms:

- hemorrhagic manifestations
- thrombocytopenia
- hepatomegaly
- fluid accumulation
- alterations of consciousness
- heart failure

Pathology of the DENV

Replication

- monocytes/macrophages
- and dendritic cells



Hemorrhage

Plasma Extravasation

Shock

The study of histopathology aspects is difficult in dengue of fatal cases

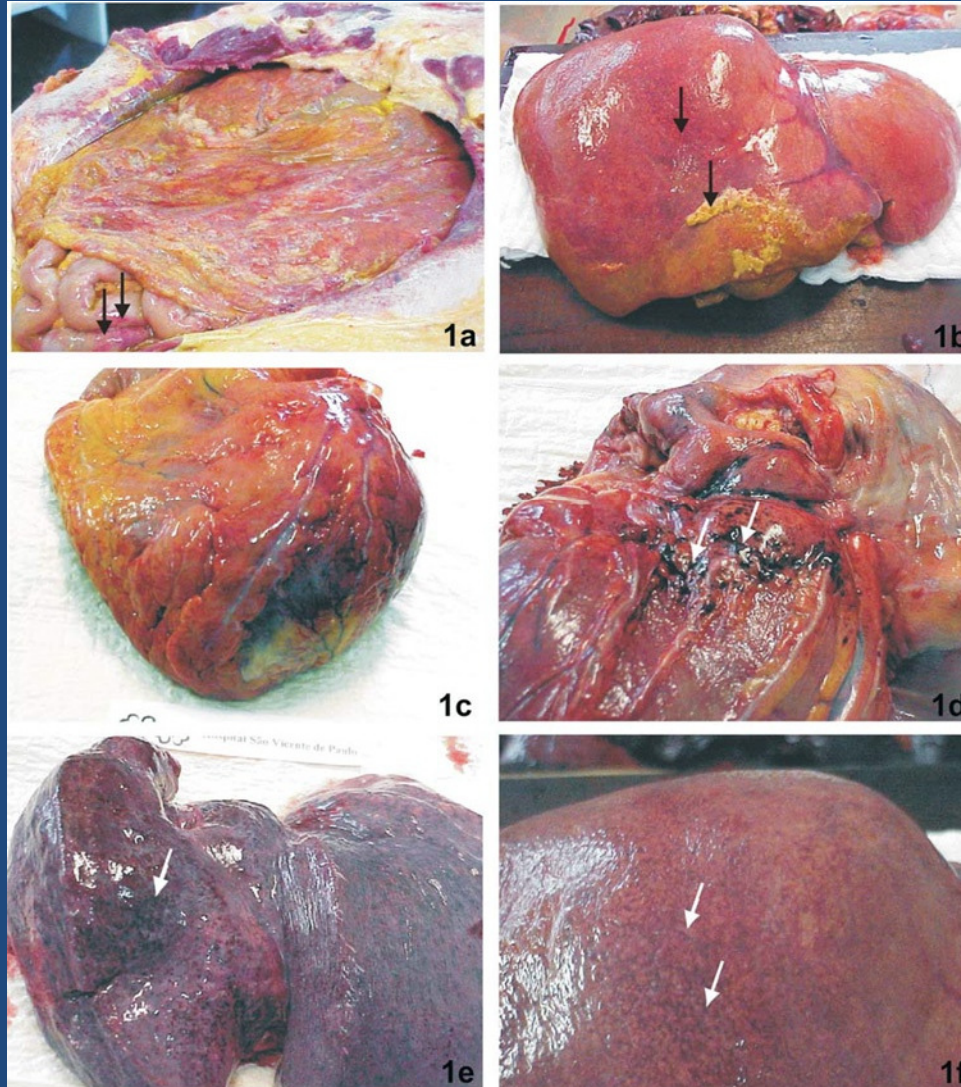
- Studies with autopsies in fatal cases have been performed in only a small number of these patients, all over the world, specially in Brazil.

Pathologic Study of a Fatal Case of Dengue-3 Virus Infection in Rio de Janeiro, Brazil

C.A. Basílio-de-Oliveira¹, G.R. Aguiar³, Baldanza M.S.³, O.M. Barth², W.A. Eyer-Silva¹ and M.V. Paes²

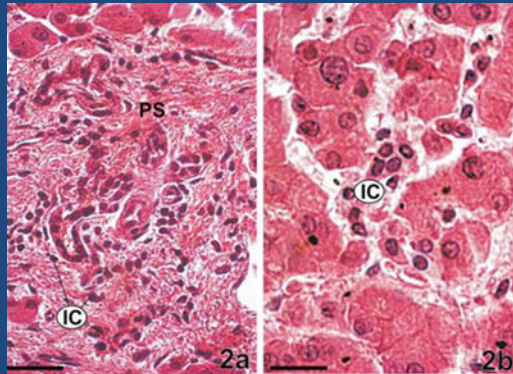
*1- Gaffrée and Guinle Teaching Hospital, Federal University of Rio de Janeiro;
2- Virology Department, Oswaldo Cruz Institute, Fiocruz-RJ; 3- São Vicente Hospital; Rio de Janeiro, RJ, Brazil*

Pathological changes

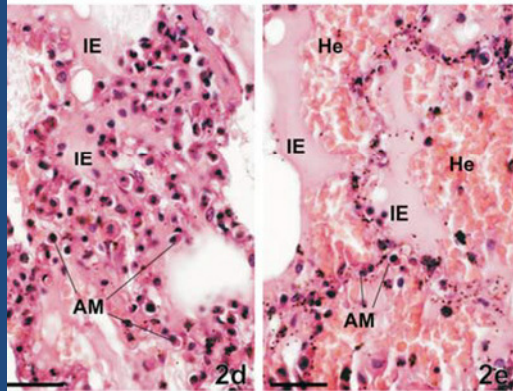


Histopathological changes and viral antigens

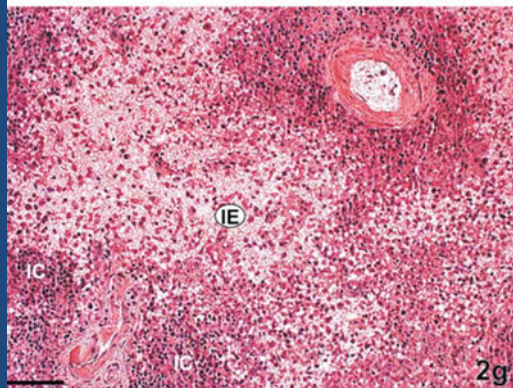
Liver



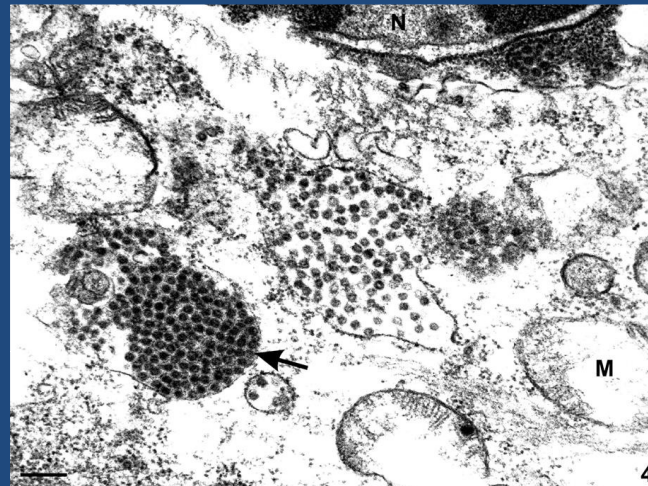
Lung



Spleen



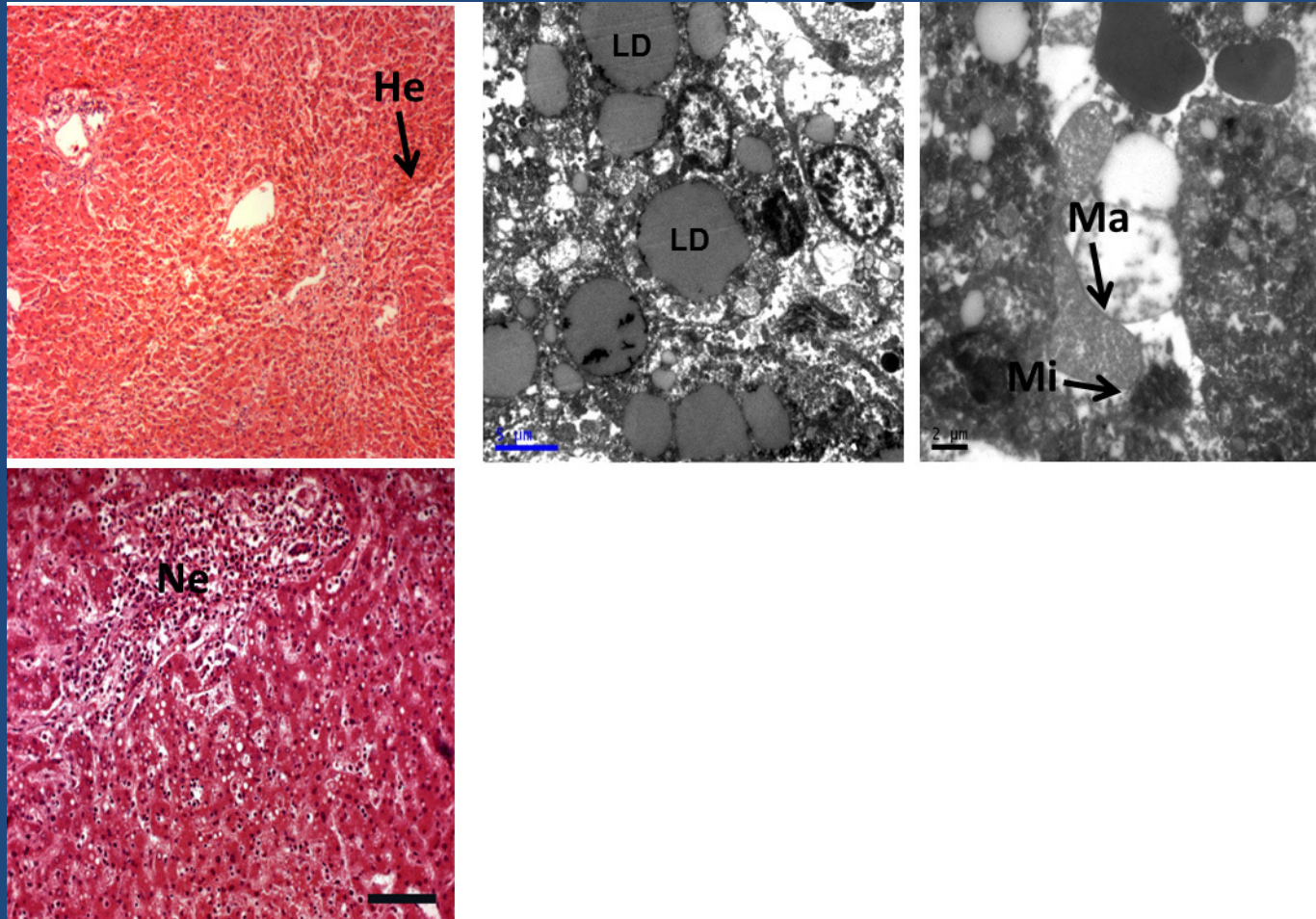
Isolation of DENV-3
C6/36



The pathology of dengue in human fatal cases regarding histopathology, ultrastructure and virus replication in multiple organs.

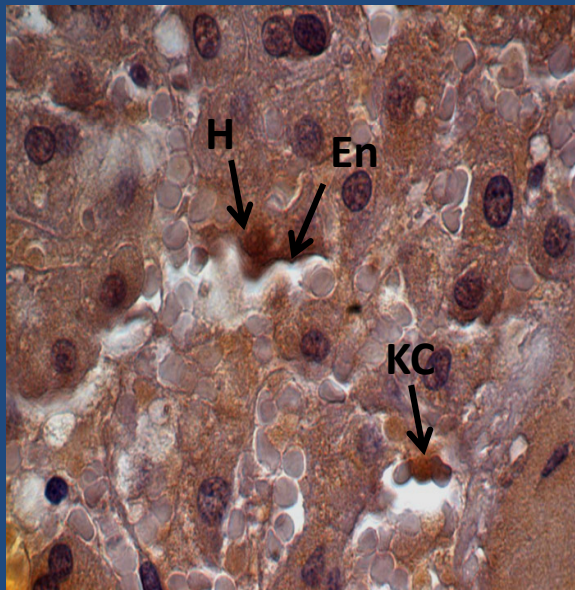
Póvoa TF¹, Alves AMB¹, Basilio-de-Oliveira CA², Nuovo GJ³, Chagas VLA⁴ and Paes MV^{1*}

Histopathology and Ultrastructural aspects: Liver

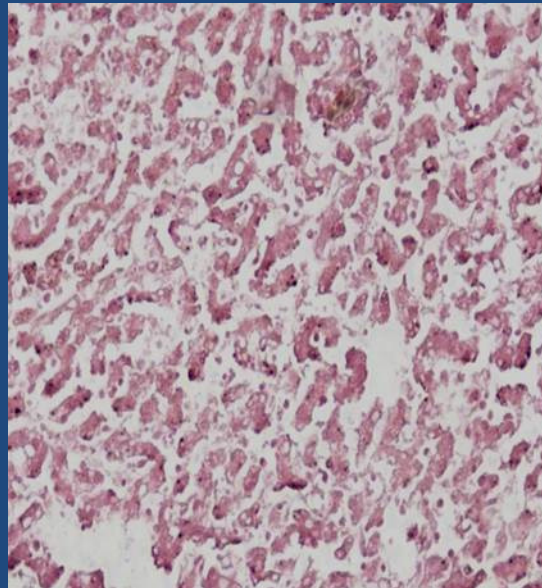


Replication: liver

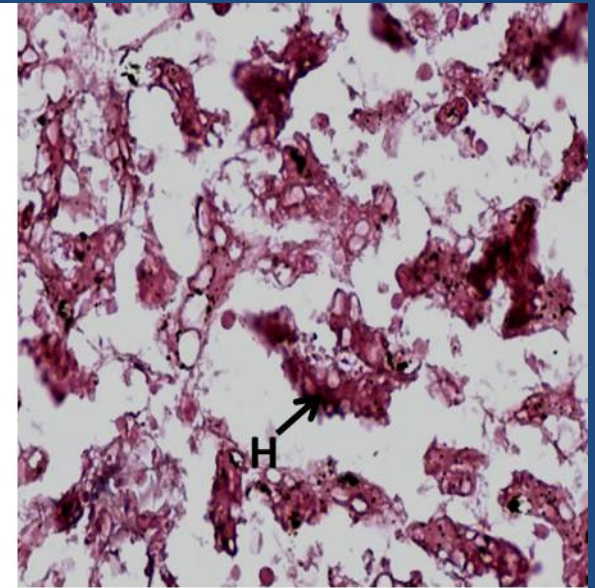
Imunohistochemistry
anti- DENV (NS3)



In situ Hybridization
(with RNA negative strand)

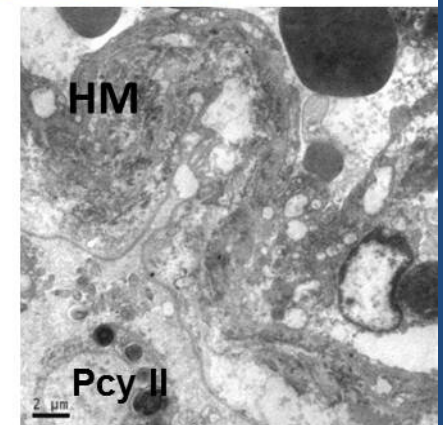
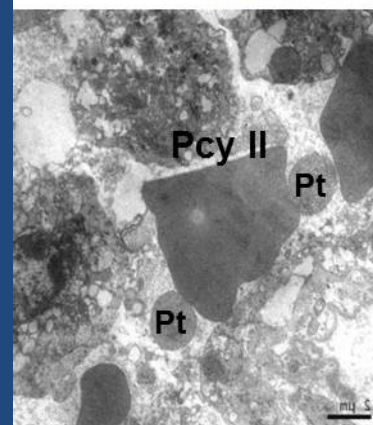
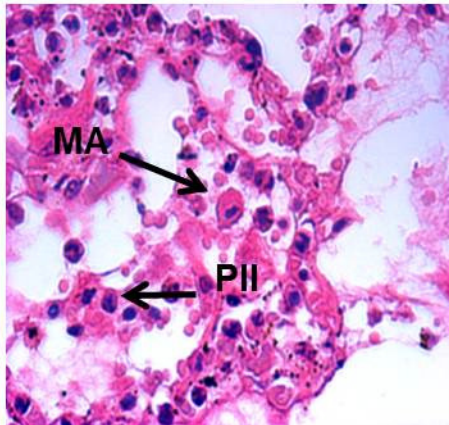
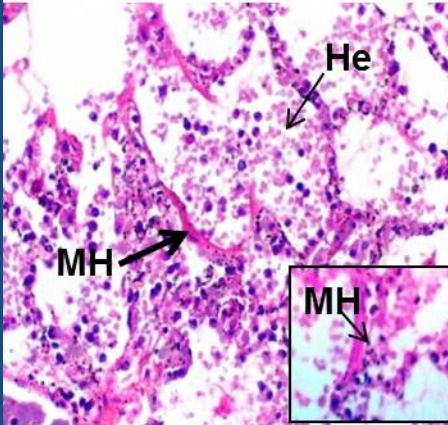
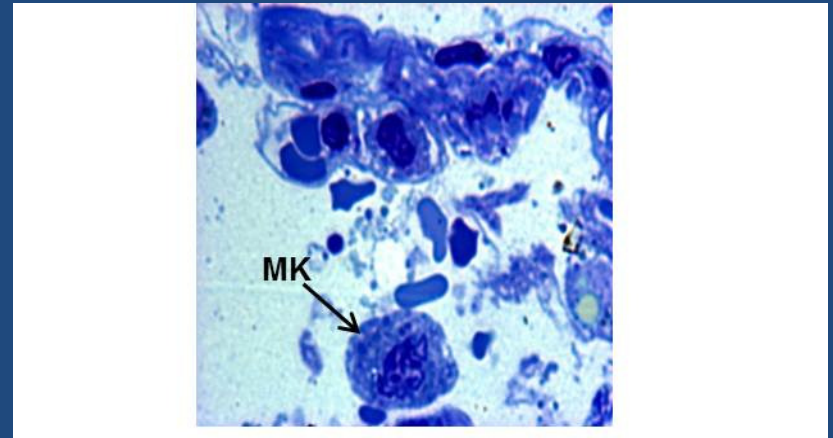
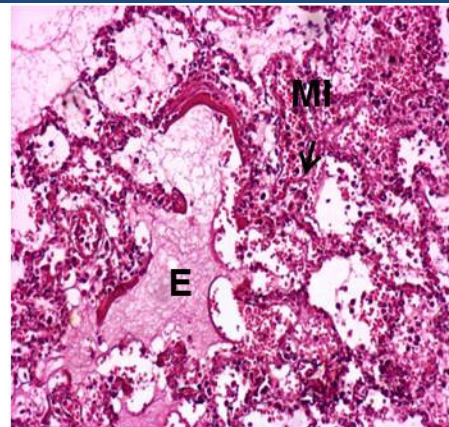
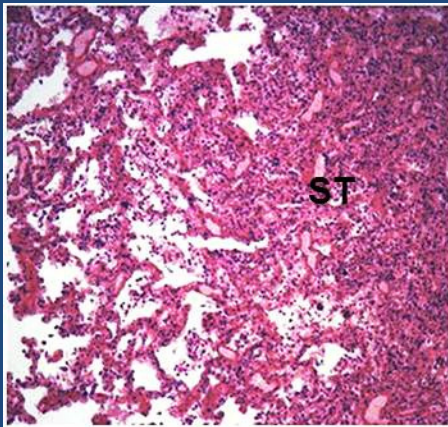


control



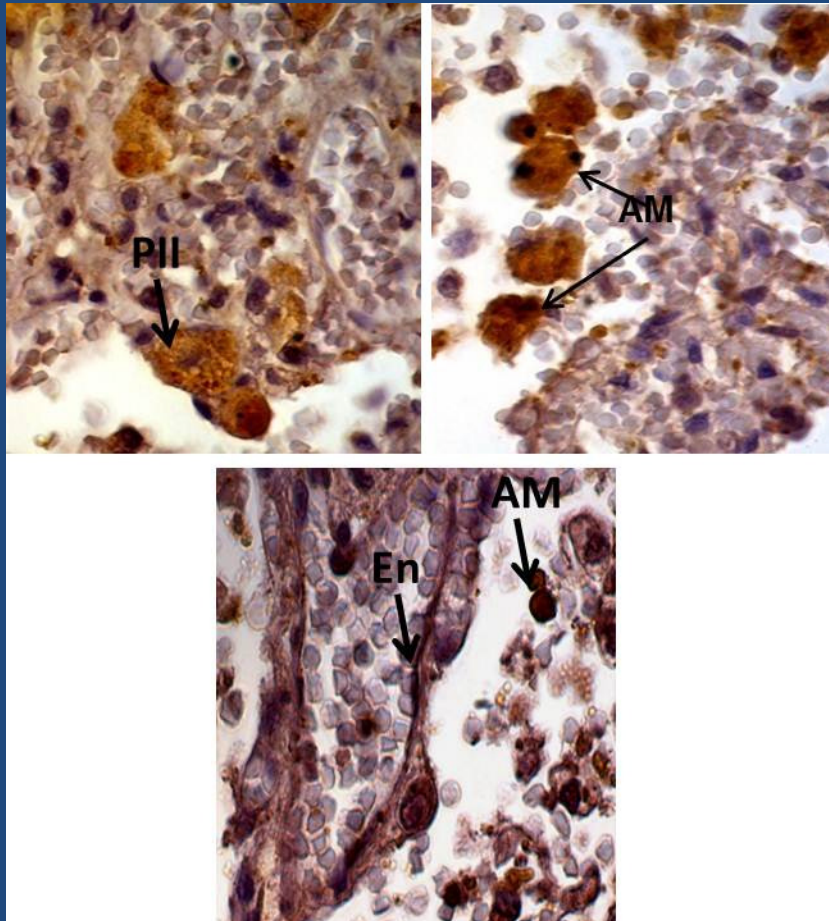
DENV

Histopathology and Ultrastructural aspects: Lung

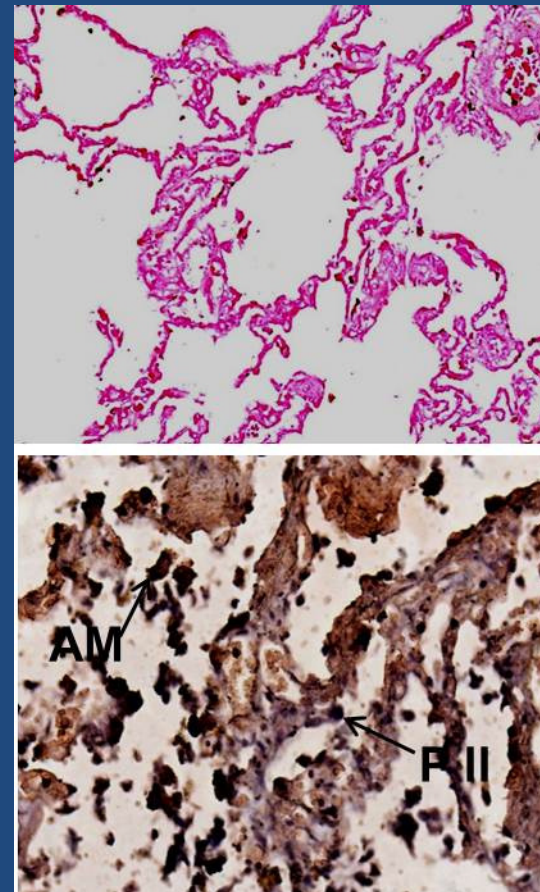


Replication: lung

Imunohistochemistry
anti- DENV (NS3)



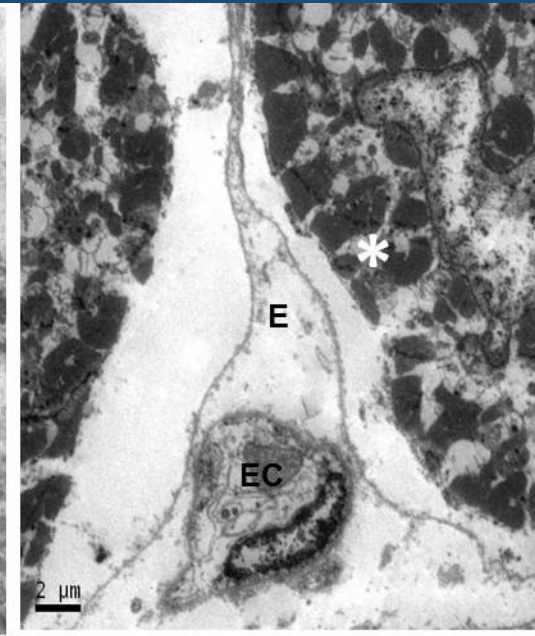
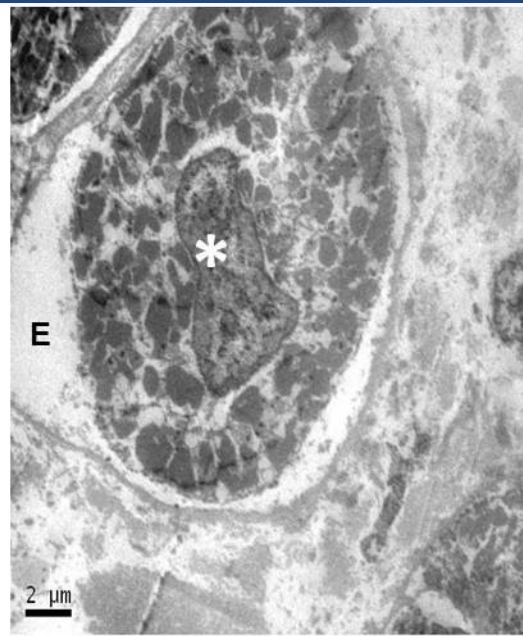
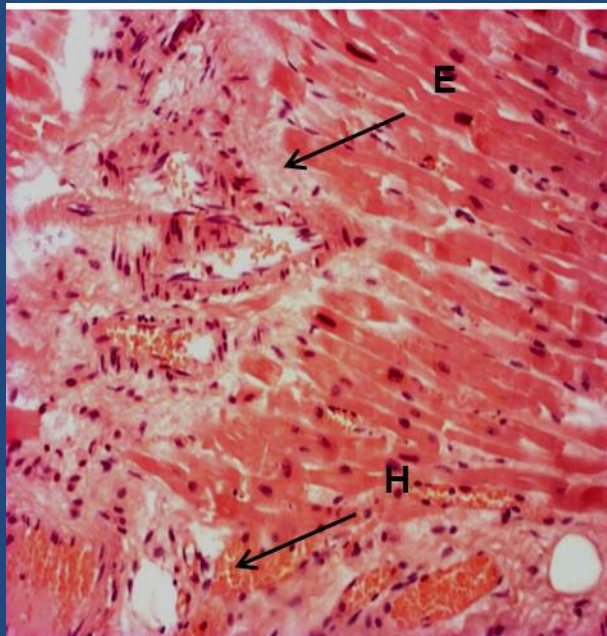
In situ Hybridization
(with RNA negative strand)



control

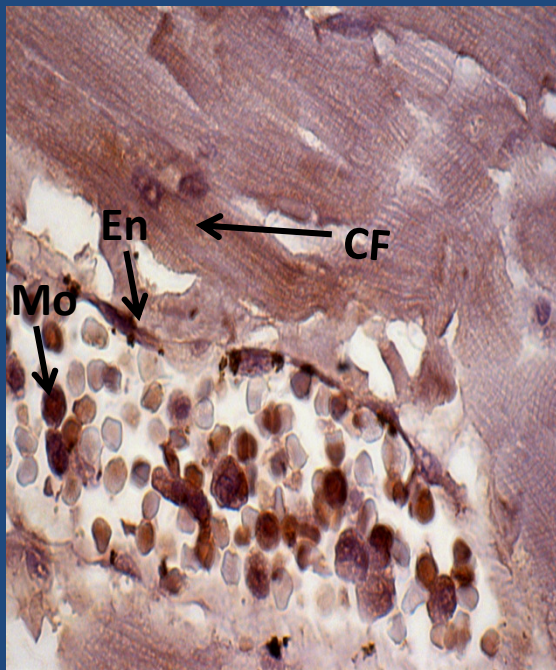
DENV

Histopathology and Ultrastructural aspects: Heart

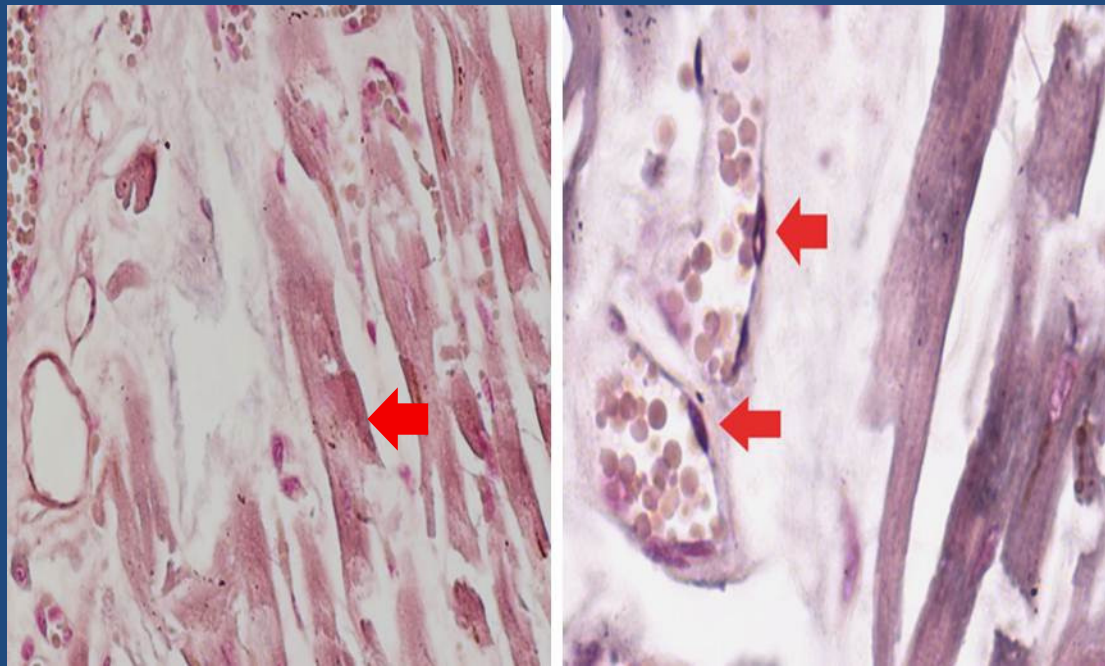


Replication: Heart

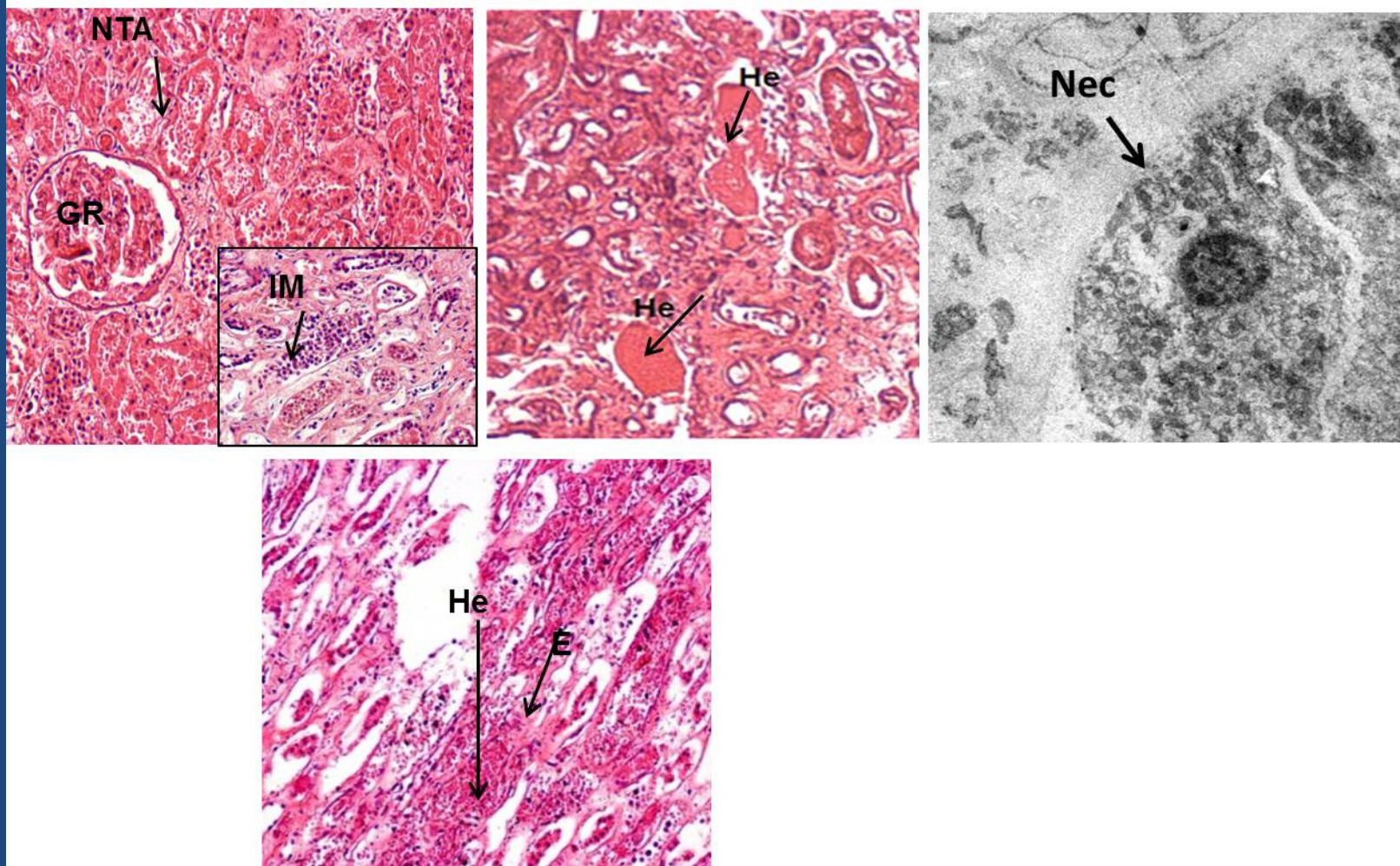
Imunohistochemistry
anti- DENV (NS3)



In situ Hybridization
(with RNA negative strand)



Histopathology and Ultrastructural aspects of kidney



Acknowledgments

➤ LABIFIV

Tiago Fajardo Póvoa - MSc

Dra. Ada M. B. Alves

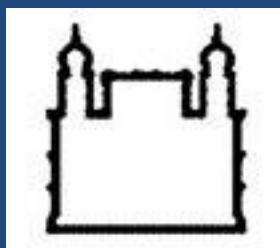
➤ Dr. Basílio de Oliveira (Hospital Gafrée e Guinle - UNIRIO)

➤ Hospital Clementino (UFRJ)

➤ Hospital Miguel Couto

➤ Dr. Gerard Nuovo - Anatomic Pathology/ Medical Center at The *Ohio State University*

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