

ZIKA VIRUS OUTBREAK

ASSISTED REPRODUCTION PATIENTS SHOULD AVOID PREGNANCY?

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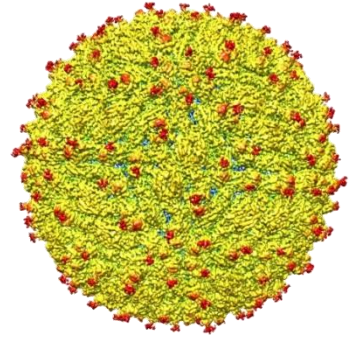
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INTRODUCTION

ZIKA Virus (ZIKV): Characteristics

- ✓ Family Flaviviridae, Group of Arboviruses (**AR**thropod **BOR**ne **VIRUSES**)
- ✓ Transmission by *Aedes* mosquitoes, but also perinatal, blood transfusion and sexual relation
- ✓ Related to Dengue, Yellow Fever, Encephalitis
- ✓ Symptoms: mild fever, conjunctivitis, arthralgia



INTRODUCTION

ZIKA Virus (ZIKV): Epidemiology

- ✓ Isolated from Rhesus monkeys (*Macaca mulata*) in **Ziika Forest**, Uganda, 1947
- ✓ Isolated from humans in 1954, **Nigeria**
- ✓ Between 1954 and 1981 – some cases in Africa and Asia
- ✓ **Brazil**: 2015, April – Universidade Federal da Bahia – ZIKV identification in 8/25 pregnant women.
- ✓ February, 2016: OMS declared **Public Health Emergency of International Concern**



INTRODUCTION

ZIKA Virus (ZIKV): Diagnostic

✓ **Chromatography
Immunoassay (IgM-IgG)**

✓ **ELISA**

- Cross-reaction with others flaviviruses (Dengue, Yellow Fever)
- 4 days-12 weeks of infection on blood

✓ **PCR**

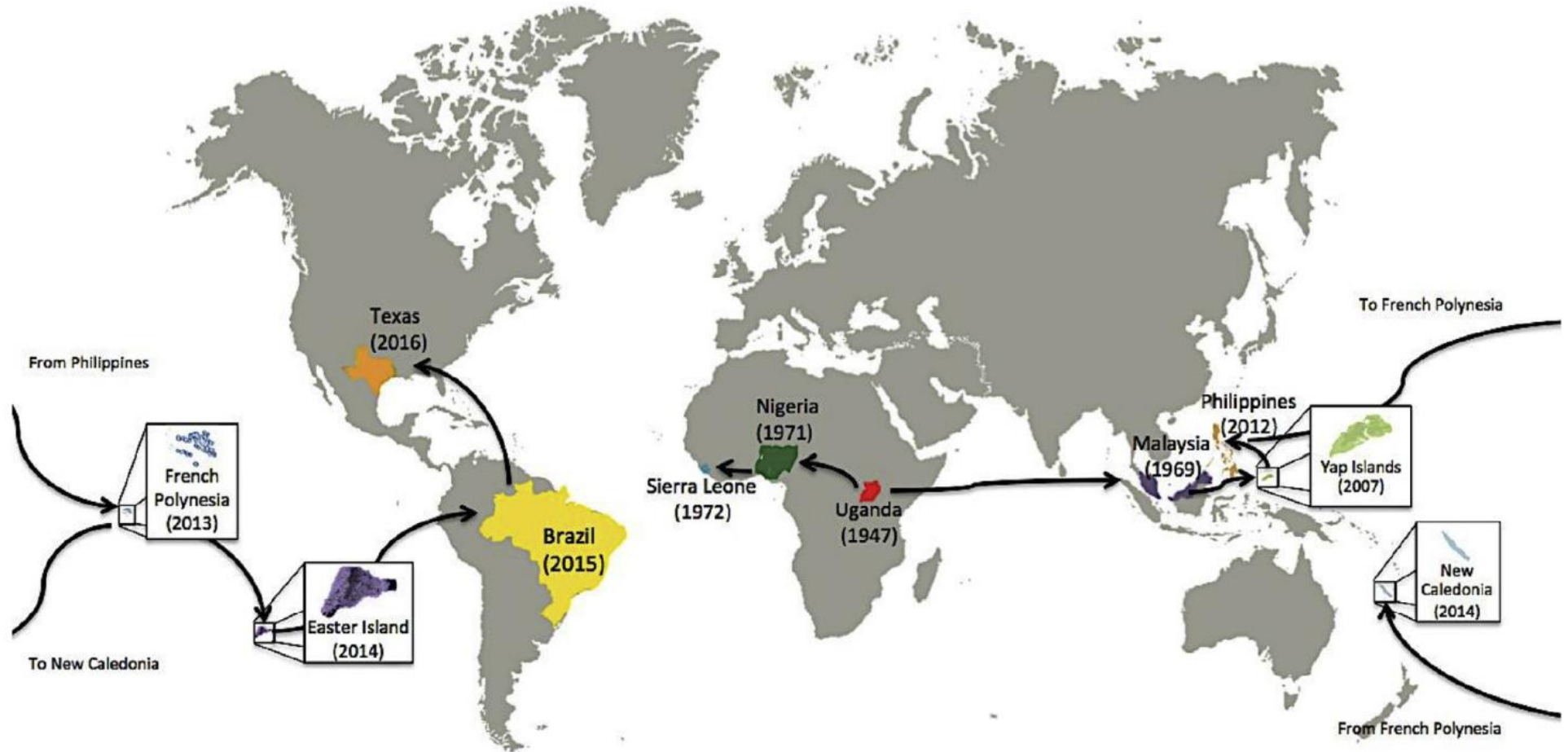
7 days of infection on blood
15 days of infection on urine
180 days of infection on **semen**

INTRODUCTION

C. Chang et al. / Journal of Autoimmunity 68 (2016) 1–13

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Potential Pathways of Global Zika Virus Spread



INTRODUCTION

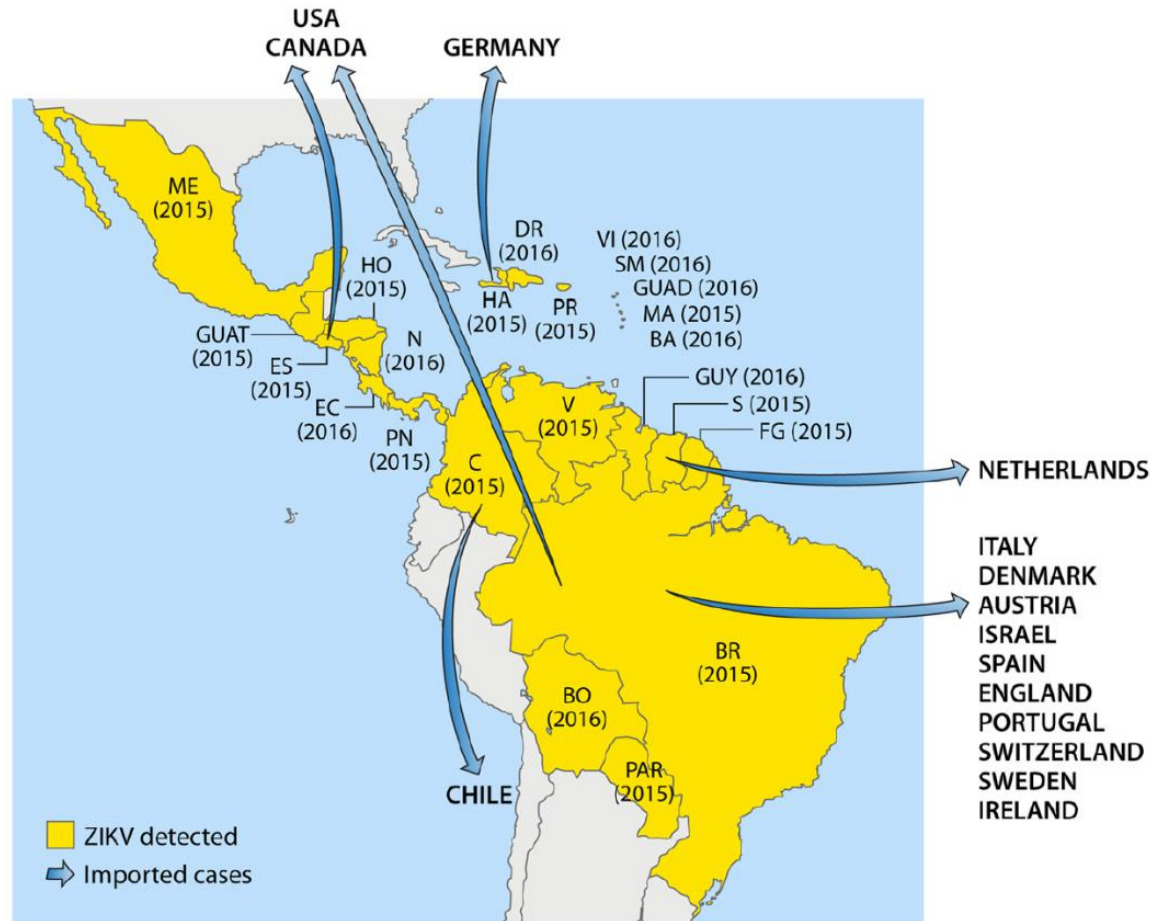


FIG 3 American countries in which ZIKV circulation has been reported up to January 2016. Abbreviations: ME, Mexico; DR, Dominican Republic; VI, Virgin Islands; SM, Saint Martin; GUAD, Guadeloupe; MA, Martinique; BA, Barbados; HA, Haiti; PR, Puerto Rico; HO, Honduras; GUAT, Guatemala; N, Nicaragua; ES, El Salvador; EC, Costa Rica; PN, Panama; V, Venezuela; GUY, Guyana; S, Suriname; FG, French Guiana; C, Colombia; BR, Brazil; BO, Bolivia; PAR, Paraguay.

INTRODUCTION

The NEW ENGLAND JOURNAL *of* MEDICINE

SPECIAL REPORT

Zika Virus and Birth Defects — Reviewing the Evidence for Causality

Sonja A. Rasmussen, M.D., Denise J. Jamieson, M.D., M.P.H.,
Margaret A. Honein, Ph.D., M.P.H., and Lyle R. Petersen, M.D., M.P.H.

N ENGL J MED 374;20 NEJM.ORG MAY 19, 2016

RAPID COMMUNICATIONS

Longitudinal follow-up of Zika virus RNA in semen of a traveller returning from Barbados to the Netherlands with Zika virus disease, March 2016

C Reusken^{1,2}, S Pas^{1,2}, C GeurtsvanKessel¹, R Mögling¹, J van Kampen¹, T Langerak¹, M Koopmans¹, A van der Eijk¹, E van Gorp¹

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www.eurosurveillance.org

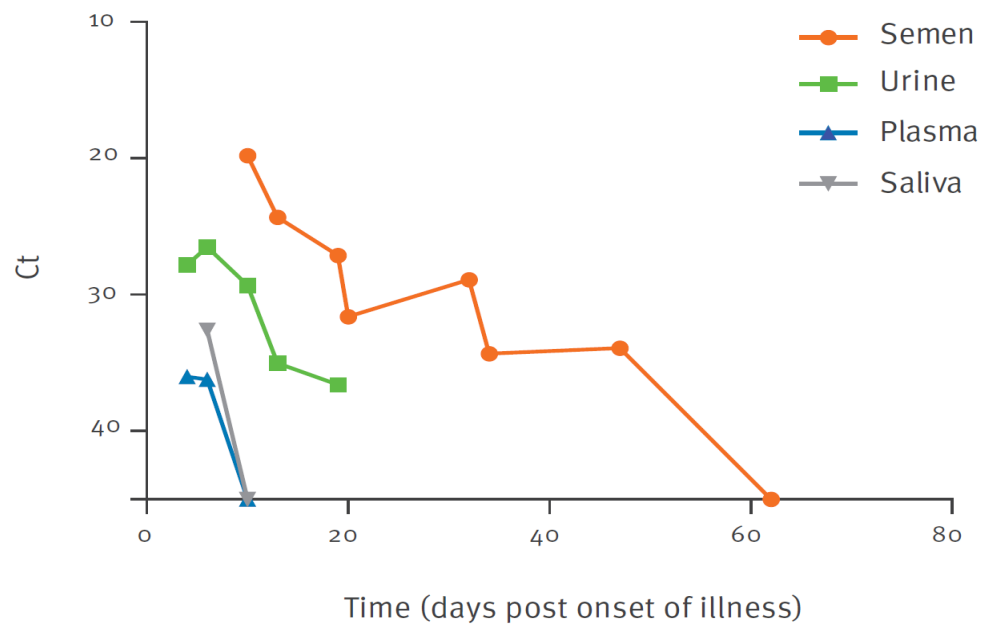
Citation style for this article:

Reusken C, Pas S, GeurtsvanKessel C, Mögling R, van Kampen J, Langerak T, Koopmans M, van der Eijk A, van Gorp E. Longitudinal follow-up of Zika virus RNA in semen of a traveller returning from Barbados to the Netherlands with Zika virus disease, March 2016. Euro Surveill. 2016;21(23):pii=30251. DOI: <http://dx.doi.org/10.2807/1560-7917.ES.2016.21.23.30251>

Article submitted on 27 May 2016 / accepted on 09 June 2016 / published on 09 June 2016

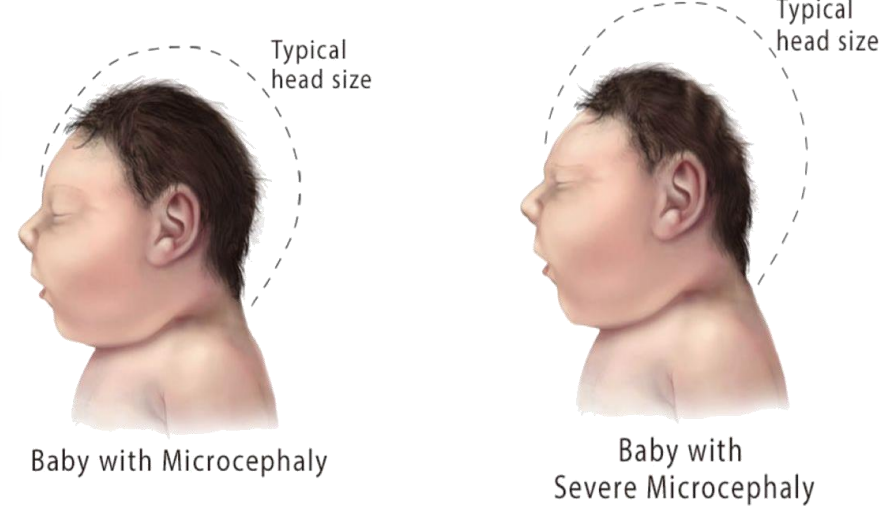
FIGURE

Semi-quantitative kinetics of Zika virus RNA loads in various types of clinical samples according to time post-disease onset, in a Dutch traveller returning from Barbados, March 2016*



INTRODUCTION

Microcephaly



- ✓ **7,438 cases reported in Brazil since ZIKV emerged (until May of 2016)**
 - **1,326 cases** suggestive of congenital infection
 - **205 cases** association with ZIKV confirmed

- ✓ Placental, CNS and Brain changes



INTRODUCTION



Should women simply avoid pregnancy?

- ✓ Increase in age decreases the chance of getting pregnant
- ✓ Pregnancy with advancing age may open up chances for other diseases
- ✓ The population will continue to live with the mosquitoes indefinitely
- ✓ **How high is the risk of microcephaly caused by ZIKV?**

OBJECTIVES

- ✓ Compare the results of ZIKV tests performed at a university affiliated-IVF center
- ✓ Discuss critically if ZIKV Outbreaks can negatively affect the woman decision to get pregnant

METHODS

ZIKV test

- Chromatography immunoassay
- ELISA

954 ICSI cycles

April-November/2016

Critical Discussion

- risk of microcephaly due to ZIKV infection
- prevalence of others harmful pathogens to vulnerable pregnant women and infants

RESULTS

Distribution of ZIKV testes by Chromatography immunoassay and ELISA in the five Brazilian regions

Region	N	%	Chromatography immunoassay test	ELISA test
North	28	3.0	0	0
Northeast	27	2.8	0	0
Central West	40	4.2	0	0
Southeast	830	87.0	112	0
South	29	3.0	0	0
Total	954	100	112	0

Endemic
Regions

RESULTS

The prevalence of bacterial, viral and parasitic infections during pregnancy

Type	Pathogens	Prevalence	Reference
Bacteria	Chlamydia trachomatis	2.57%	(Mylonas 2012)
	Neisseria gonorrhoea	0.7% to 7%,	(Rao et al. 2008)
	Neisseria gonorrhoea (risk group)	15–35%	(Benzaken et al. 2006)
	Treponema pallidum	0.71%	(Gottlieb et al. 2008)
Parasites	Trypanosoma cruzi	1% to 40%	(Martins-Melo et al. 2014)
	Toxoplasma gondii	8% - 22%	(Hill and Dubey 2016)
	Plasmodium falciparum	2.9%	(Kourtis et al. 2014)
Virus	Parvovirus B19 (endemic period)	1.5%	(Valeur-Jensen et al. 1999)
	Parvovirus B19 (epidemic period)	13.0%	(Valeur-Jensen et al., 1999)
	Cytomegalovirus	0.3%	(Preece et al. 1986)
	Varicella Zoster	0.16% - 0.46%	(Helmuth et al. 2015)
	Herpes Simplex Virus	2%	(Brown et al. 2005)
	Microcephaly due to ZIKV	0.88%	(Johansson, Mier-y-Teran-Romero et al. 2016)

DISCUSSION

- ✓ **ZIKV infection** in patients undergoing ART in a center in the Southeast is **null**, even when performed in patients from the endemic regions

DISCUSSION

AGÊNCIA NACIONAL DE VIGILÂNCIA SANITÁRIA
DIRETORIA COLEGIADA

RESOLUÇÃO - RDC No- 72, DE 30 DE MARÇO DE 2016

Altera a Resolução da Diretoria Colegiada - RDC n.º 23, de 27 de maio de 2011, que dispõe sobre o regulamento técnico para o funcionamento dos Bancos de Células e Tecidos Germinativos e dá outras providências.



ANVISA

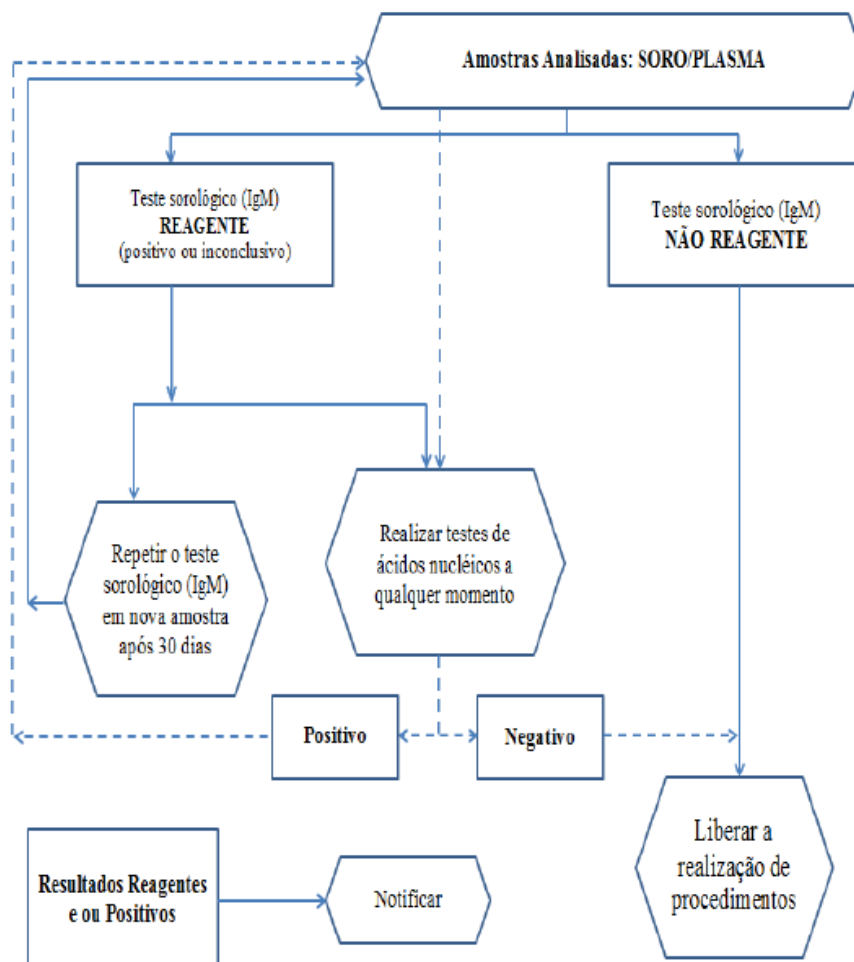
Agência Nacional de Vigilância Sanitária

Nota Técnica n.º 008/2016/GSTCO/GGMED/DIARE/ANVISA

Referência	RDC n° 72, de 30 de março de 2016
Assunto	Critérios técnicos para o gerenciamento do risco sanitário de células, tecidos germinativos e embriões humanos para uso terapêutico frente aos casos de infecção por vírus Zika no Brasil.

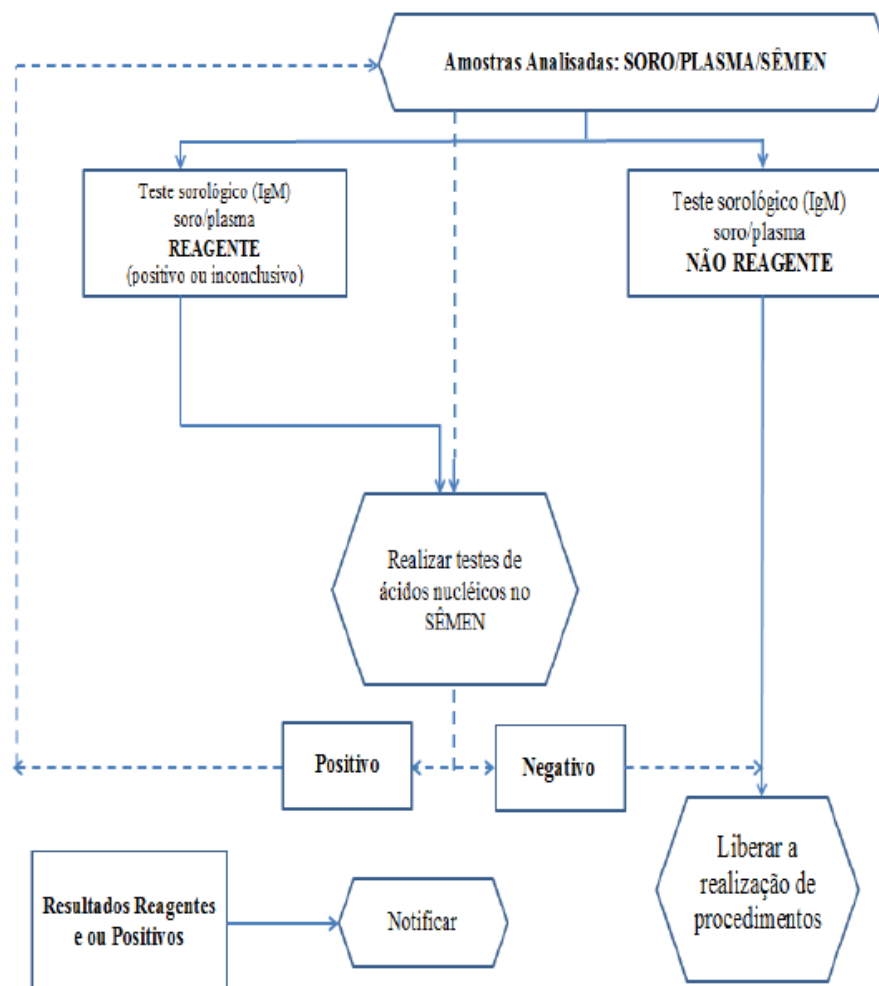


Algoritmo I - Testagem de Zika Vírus em Amostras de Pacientes MULHERES em Reprodução Humana Assistida





Algoritmo II - Testagem de Zika Vírus em Amostras de Pacientes HOMENS em Reprodução Humana Assistida



DISCUSSION

- ✓ Do the patients need to suffer even more **stress** from performing the ZIKV test?
- ✓ How to ensure that the infection will **not** occur in the following months?

DISCUSSION

- ✓ Although ZIKV infection risk is extremely high, especially in endemic regions, the microcephaly risk due to ZIKV is **not higher** than the risk of miscarriage and birth defects due to other recognized pathogens

DISCUSSION

- ✓ Pregnant women, or those who wish to become pregnant, should stay away from **alarming news** that takes away the tranquility of their pregnancies.



#VAMOSCONVERSAR

Realização



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Patrocínio



Obrigado!
Gracias!



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