Infecciones por Arbovirus
Experiencia en la Fundación Valle del Lili

Dic 2018- Dic 2019

Fernando Rosso Medicina Interna Infectología
Centro de Investigaciones Clínicas

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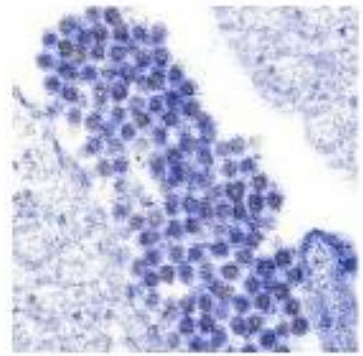
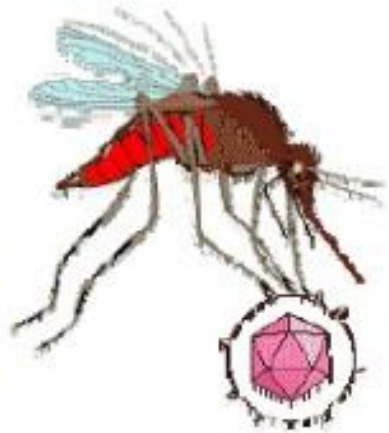
DEFINICIÓN

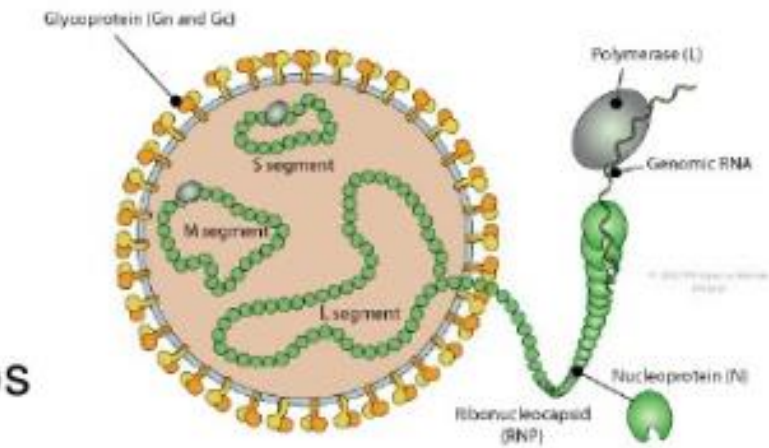
Arbovirus → virus que se multiplican en un artrópodo hematófago y posteriormente son transmitidos por picadura a un vertebrado.





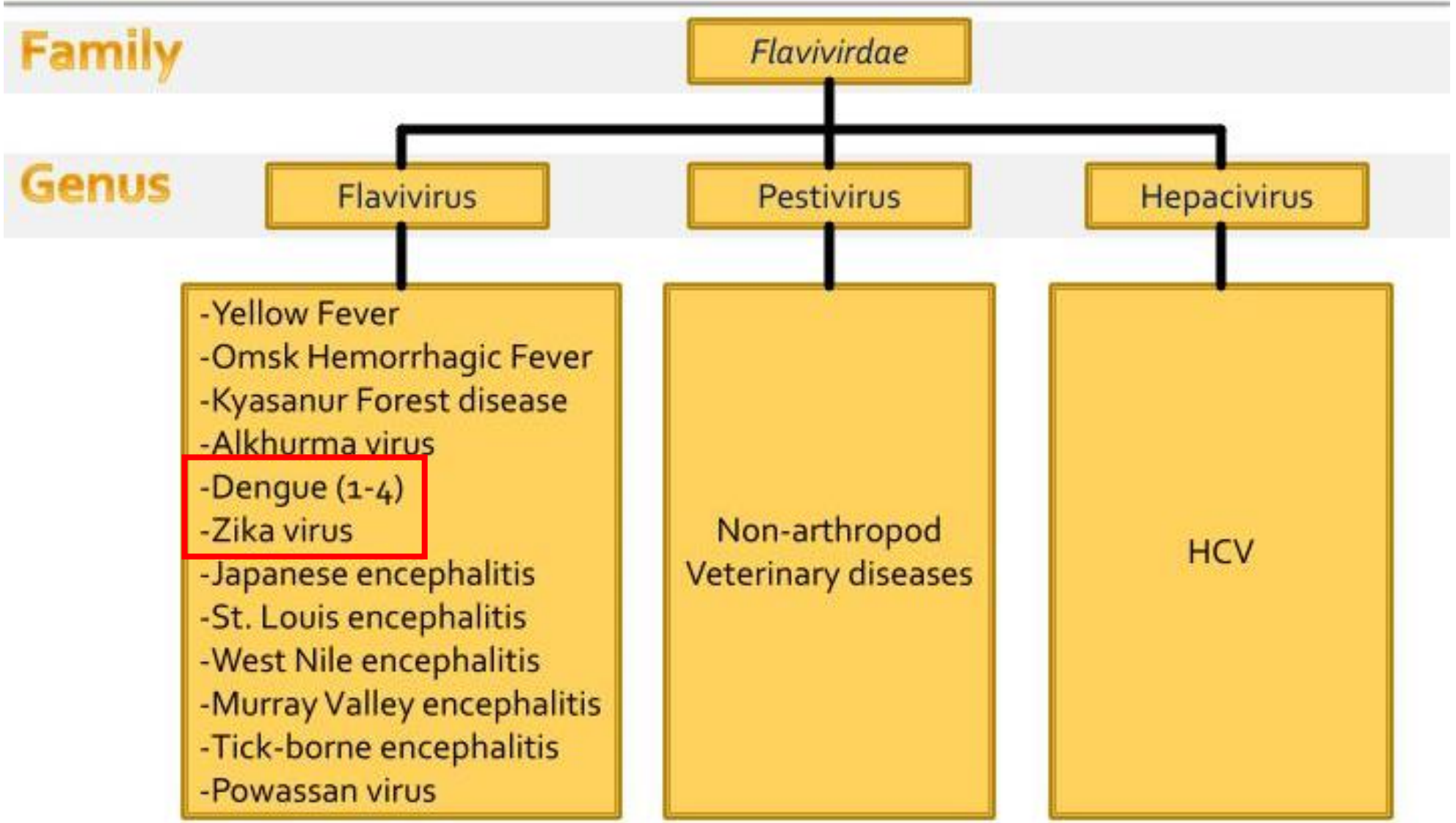
Del inglés: **ar**thropod-**bo**rne **virus**es

•Morfología:
- Viriones envueltos.
- Forma esférica
- Genoma ARNmc



•Transmitidos por vectores

•Hospedadores: Vertebrados e invertebrados



Investigación en Diferentes Áreas

Investigación en áreas clínicas

- **Población especiales**
- Trasplante de órganos sólidos
- Embarazo
- Dengue Severo
- Investigación Traslacional

- Investigación salud pública

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Trasplante de Órganos Sólidos

TRANSPLANT INFECTIOUS DISEASE
AN OFFICIAL JOURNAL OF THE TRANSPLANTATION SOCIETY

CASE REPORT

Chikungunya in solid organ transplant recipients, a case series and literature review

Fernando Rosso, Sarita Rodríguez, Jorge A. Cedano, Barbara L. Mora, Pablo A. Moncada, Juan D. Velez

Transmission of dengue virus from deceased donors to solid organ transplant recipients: case report and literature review

Fernando Rosso[a,b,c,*], *Juan C. Pineda*[b], *Ana M. Sanz*[c], *Jorge A. Cedano*[c], *Luis A. Caicedo*[d]

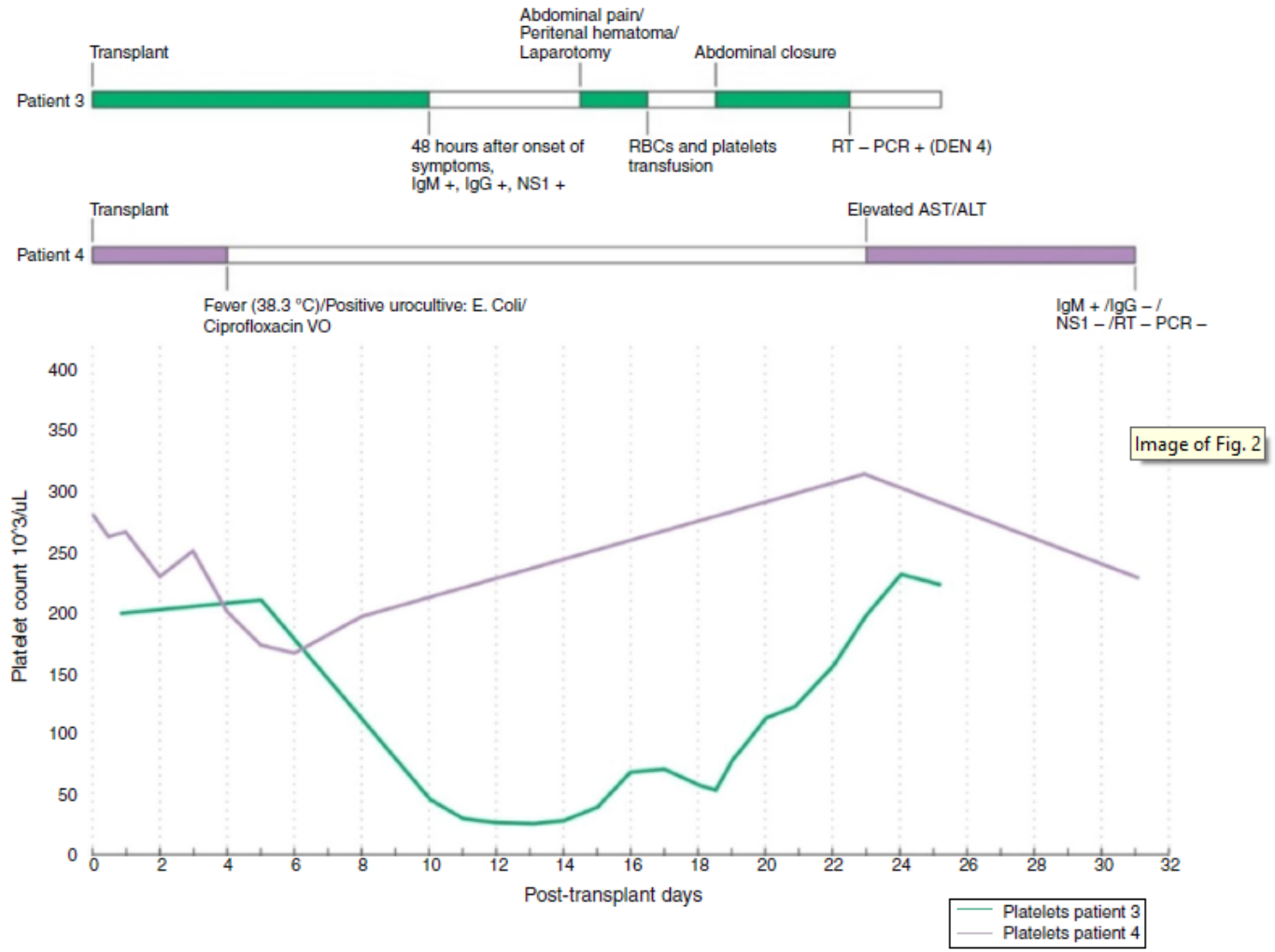


Fig. 2 – Clinical course of dengue infection in recipients 3 and 4.

Trans R Soc Trop Med Hyg 2019; **113**: 431–436
doi:10.1093/trstmh/trz024 Advance Access publication 29 April 2019

A scoping review of transmission of dengue virus from donors to recipients after solid organ transplantation

Jorge Andrés Cedano[a,b], Bárbara Lucía Mora[a], Luis Gabriel Parra-Lara[a], Ramiro Manzano-Nuñez[a] and Fernando Rosso[a,c,d,]**

Table 2. Characteristics of recipients

Author, year	Country, n	Age (years)/ gender/TO	Immunosupression	Initial symptoms	TCP (lowest value)	Platelet nadir	Elevated AST/ALT	Hyperbilirubinemia	Lab-confirmed dengue	Revised 2009 dengue classification
Saigal, 2013	India, 1	38/M/Liver	MPND, TAC, MMF	On postoperative day 6: fever	Yes (NR)	NR	Yes, AST/ALT levels were >3500/2500 UI/mL between postoperative days 8–9	Yes, bilirubin level was >4 between postoperative days 6–12	NS1 positive RT-PCR positive	Severe dengue
Gupta, 2015	India,1	4/M/Liver	NR	On postoperative day 5: fever	Yes (25 000)	Lowest platelet count on postoperative day 7 (25 000)	Yes, AST/ALT levels were >150/200 between postoperative days 5–9	NR	NS1 positive	Dengue with warning signs
Rosso 2018	Colombia, 4	41/M/Heart	MPND, MMF, CyP	On postoperative day 3: myalgia, arthralgia, and general discomfort	Yes (<30 000)	Lowest platelet count (<30 000) on postoperative week 2	Yes, value not reported	Yes, value not reported	IgM positive RT-PCR positive	Severe dengue
		53/M/Liver	MPND, MMF, CyP	On postoperative day 2: fever	Yes (<50 000)	Lowest platelet count on postoperative day 2	Yes, value not reported	Yes, value not reported	IgM positive IgG negative RT-PCR positive	Severe dengue

Am. J. Trop. Med. Hyg., 0(0), 2019, pp. 1–6
doi:10.4269/ajtmh.19-0414

Dengue Virus Infection in Solid Organ Transplant Recipients: A Case Series and Literature Review

Fernando Rosso,[1,2,3*] Ana María Sanz,[2] Luis Gabriel Parra-Lara,[2] Pablo Andrés Moncada,[1,3] Juan Diego Vélez,[1,3] and Luis Armando Caicedo[3,4]

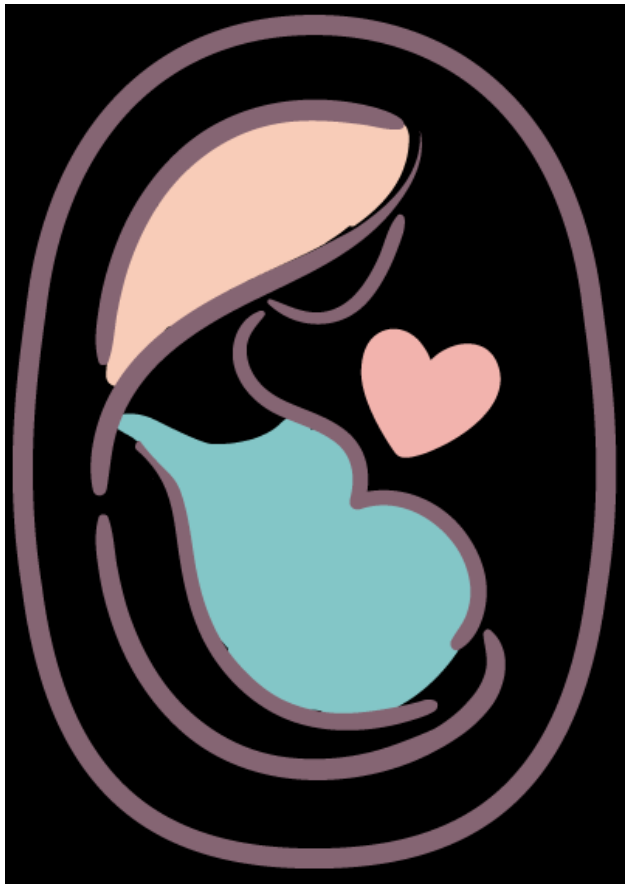
[1]*Departamento de Medicina Interna, Servicio de Infectología, Fundación Valle Del Lili, Cali, Colombia;* [2]*Centro de Investigaciones Clínicas (CIC), Fundación Valle Del Lili, Cali, Colombia;* [3]*Facultad de Ciencias de La Salud, Universidad Icesi, Cali, Colombia;* [4]*Fundación Valle Del Lili, Unidad de Trasplantes, Cali, Colombia*

Reports of solid organ transplantation recipients with dengue virus infection

Study	Country	Number of cases	Age*	Gender	Organ	Time from transplant to infection (months)*	Thrombocytopenia	Severe dengue	Graft function alteration	Graft rejection	Deceases
Tan et al.[15]	Singapore	1	23	M	Kidney	0.16	1	1	0	0	0
García et al.[16]	Brazil	1	66	M	Liver	0.7	1	1	1	N/A	1
Renaud et al.[17]	Singapore	6	56.1	M: 4 F: 2	Kidney	53.3	N/A	0	0	0	0
Azevedo et al.[18]	Brazil	27	37 ± 14†	M: 18 F: 9	Kidney	N/A	N/A	1	N/A	0	1
Park et al.[34]	South Korea	1	29	F	Kidney	156	1	0	0	0	0
Prasad et al.[19]	India	8	36.5 (26.3–46,6)	M: 4 F: 4	Kidney	22 (2.75–61)	8	3	4	3	3
Tangnararatchakit K et al.[35]	Thailand	1	16	F	Kidney	0.2	1	1	1	0	0
Nasim et al.[23]	Pakistan	102	28	M: 75	Kidney	1.27 (2 days–14.5 years)	97	12	68	9	7
Weerakkody et al.[7]	Sri Lanka	1	46	M	Liver	26	1	1	1	0	0
Maia et al.[31]	Brazil	2	18†	M: 2	Kidney	0.1	2	2	2		1
Costa et al.[36]	Brazil	10	37 (22.8–A43.8)	M: 5 F: 5	Kidney	44.5 (8.3–A55.7)	7	4	8	0	0
Subbiah et al.[37]	India	20	31.9 ± 8.8†	M: 20	Kidney	12,6 (0.03–108.3)	18	2	8	1	1
Kenwar et al.[38]	India	32	37.2 (19–64)	M: 27 F: 5	Kidney	36.2 (0–168)	26		12		2
Rosso et al.	Colombia	20	50.5 (31–63.5)	F:13	3 livers 17 kidneys	27.6 (3.82–A59.2)	6	7	7	0	0

F = female; M = male; N/A = not available.
* Years median (IQR).
† Years mean ± SD.

Embarazo



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EMERGING INFECTIOUS DISEASES®

EID Journal > Volume 23 > Number 11—November 2017 > Main Article

Volume 23, Number 11—November 2017

CME ACTIVITY - *Synopsis*

Pregnant Women Hospitalized with Chikungunya Virus Infection, Colombia, 2015

Maria Escobar✉, Albaro J. Nieto, Sara Loaiza-Osorio, Juan S. Barona, and Fernando Rosso
Author affiliations: Fundación Clínica Valle del Lili, Cali, Colombia (M. Escobar, A.J. Nieto, S. Loaiza-Osorio, F. Rosso); Icesi University, Cali (M. Escobar, A.J. Nieto, J.S. Barona, F. Rosso)

Cite This Article

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Pregnant Women Hospitalized with Chikungunya Virus Infection, Colombia, 2015

Maria Escobar, Albaro J. Nieto, Sara Loaiza-Osorio, Juan S. Barona, Fernando Rosso

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All other clinicians completing this activity will be issued a certificate of participation. To participate in this journal CME activity: (1) review the learning objectives and author disclosures; (2) study the education content; (3) take the post-test with a 75% minimum passing score and complete the evaluation at http://www.medscape.org/journal/eid; and (4) view/print certificate. For CME questions, see page 1940.

Release date: October 13, 2017; Expiration date: October 13, 2018

THE JOURNAL OF MATERNAL-FETAL & NEONATAL MEDICINE
https://doi.org/10.1080/14767058.2018.1554044

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ORIGINAL ARTICLE

Comprehensive treatment in severe dengue during preterm and term labor: could tocolysis be useful?

María Fernanda Escobar[a], Bárbara Lucía Mora[b], Jorge Andrés Cedano[b], Sara Loaiza[b] and Fernando Rosso[b,c]

[a]High Complexity Obstetric Unit, Fundación Valle Del Lili, Cali, Colombia; [b]Clinical Research Center, Fundación Valle Del Lili, Cali, Colombia; [c]Infectious Diseases Service, Fundación Valle Del Lili, Cali, Colombia

Table 1. Clinical characteristics of the pregnant patients.

Case	GA (weeks)	Warning Signs	Severity Signs	Maternal morbidity	Platelets 24 h previous to labor[a]	Platelets just before labor	Platelets 24 h postpartum	Type of childbirth	Tocolysis used
1	32.6	• Intense abdominal pain • Mucosal bleeding • Pleural effusion	• Dengue hepatitis • Respiratory distress due to plasma leakage • Shock	• Severe Preeclampsia • Sepsis (pulmonary origin)	56,000	70,000	86,000	Cesarean section	• Atosiban: 8 cc/h • Magnesium sulfate: 50 cc/h
2	35.2	• Pleural effusion • Persistent vomiting	• Respiratory distress due to plasma leakage	• Septic shock and organ dysfunction	211,000	136,000	119,000	Cesarean section	• Magnesium sulfate: 75 cc/h
3	36.2		• Respiratory distress	• Coinfection with Influenza B virus	129,000	129,000	119,000	Vaginal birth	• Nifedipine: 10 mg Q6H • Magnesium sulfate: 100 cc/h
4	36	• Persistent vomiting • Mucosal bleeding		• Threatened preterm labor	NA	172,000	NA	Cesarean section	Nifedipine: 10 mg Q6H
5	36	• Mucosal bleeding	• Severe bleeding	• Severe Preeclampsia with hypertensive crisis • Massive postpartum hemorrhage • Premature rupture of membranes	20,000	37,000	135,000	Cesarean section	Magnesium sulfate: 75 cc/h
6	38.2	• Pleural effusion • Pericardial effusion	• Respiratory distress due to plasma leakage • Severe bleeding • Shock	• Severe preeclampsia • Postpartum hemorrhage with hypovolemic shock	94,000	144,000	137,000	Vaginal birth	• Magnesium sulfate: 30 cc/h

GA: Gestational age; NA: Not available.
[a]Five patients had platelet count taken 24 hours before delivery.

Table 2. Newborn clinical characteristics.

Case	Ballard (weeks)	APGAR[a]	Diagnosis/comorbidities	Hospitalization	Days since the beginning of maternal symptoms
1	34	6–8 – 9	Neonatal respiratory distress syndrome requires mechanical ventilation. Develops hyperkalemia Polycythemia	Yes	12 days
2	36	5–6 – 6	Neonatal respiratory distress syndrome that required mechanical ventilation and inotropic. Developed pulmonary hypertension. Developed intraventricular hemorrhage. Neonatal sepsis	Yes	4 days
3	36	8–9 – 10	No	No	–
4	39	8–9 – 10	Neonatal hyperbilirubinemia	Yes	13 days
5	36.5	8–9 – 10	Neonatal jaundice due to Rh incompatibility. Exposed to Magnesium sulfate (Mother with preeclampsia)	Yes	13 days
6	39	6–7 – 9	Neonatal respiratory distress that resolves with oxygen. Exposed to Magnesium sulfate (Mother with preeclampsia). Patient presents with erythema on thorax and abdomen on the second day of life.	Yes	10 days

[a]APGAR score taken at 1–5–10 min.

The Application of Clinical Genetics

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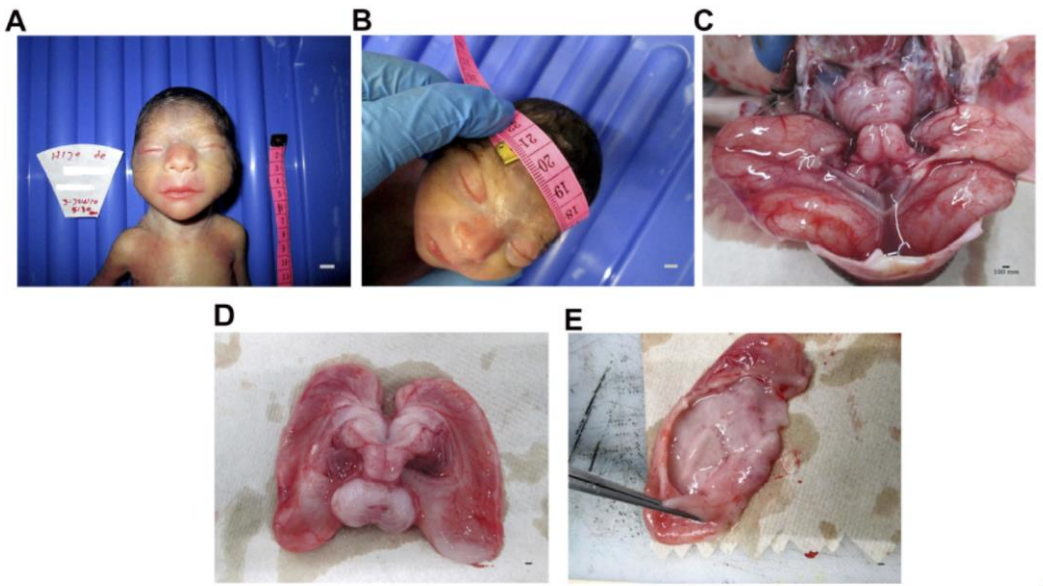
CASE SERIES

First report case with negative genetic study (array CGH, exome sequencing) in patients with vertical transmission of Zika virus infection and associated brain abnormalities

This article was published in the following Dove Press journal:
The Application of Clinical Genetics

Estephania Candelo[1,2]
Gabriela Caicedo[1]
Fernando Rosso[3]
Adriana Ballesteros[4]
Jaime Orrego[4]
Luis Escobar[5]
Pablo Lapunzina[6,7]
Julián Nevado[6,7]
Harry Pachajoa[1,8]



Dengue Severo – Unidad de cuidado intensivos

Trends in dengue mortality over fifteen years at Intensive Care Unit: Can we improve?

October 2-6 • Washington, DC • www.idweek.org
IDWeek 2019™
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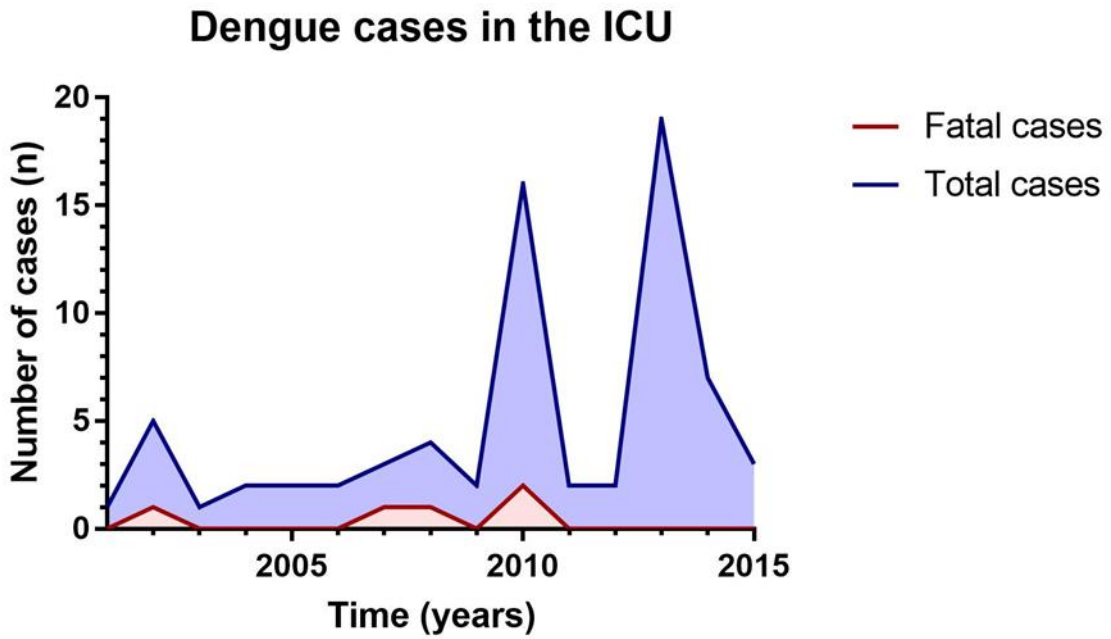
Fernando Rosso MD, MSc; Luis Gabriel Parra-Lara MD, Ana María Sanz MD; Gustavo Ospina-Tascón MD, PhD; Marcela Granados MD,



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Could Mean Platelet Volume Predict Platelet Count Recovering Dengue Virus Infection?

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Ana María Sanz MD; Diana Marcela Martínez Ruíz MSc; Andrea ValenciaMSc, Liliana Flórez MSc; Diego Alejandro Tovar Ríos MSc; Fernando Rosso Suárez MD, MSc

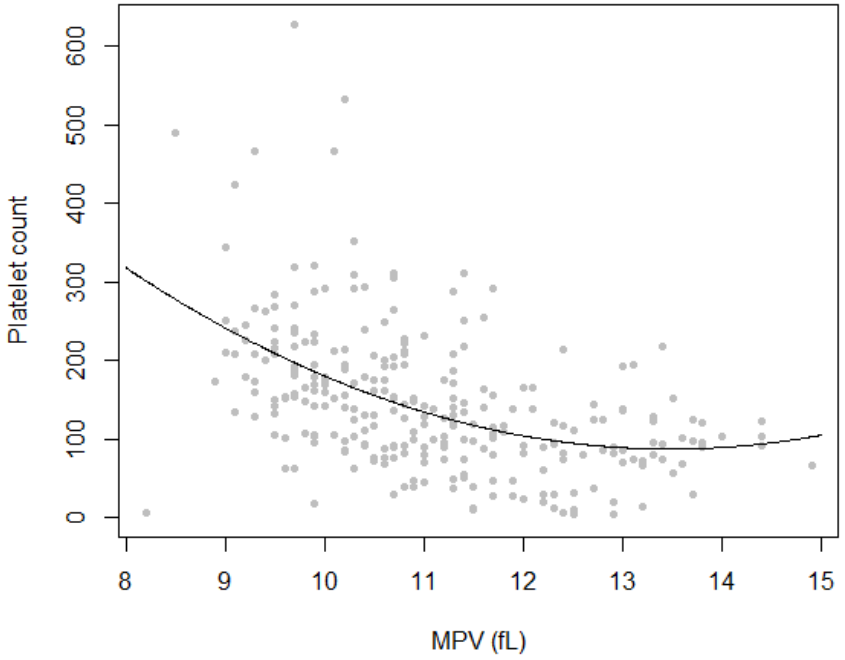

Figure 1. Regression model for platelet count estimation from MPV

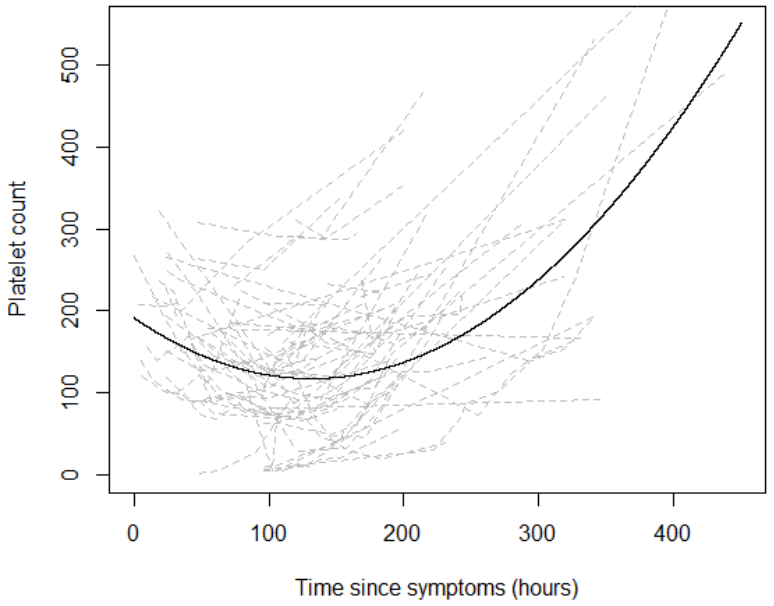

Figure 2. Adjusted-regression model for platelet count estimation from time

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Hematocrit levels and the microcirculatory dysfunction in patients with Severe dengue / dengue shock syndrome: a preliminary observation

Fernando Rosso, Edgardo Quiñones, Ana María Sanz , Gustavo Ospina-Tascón

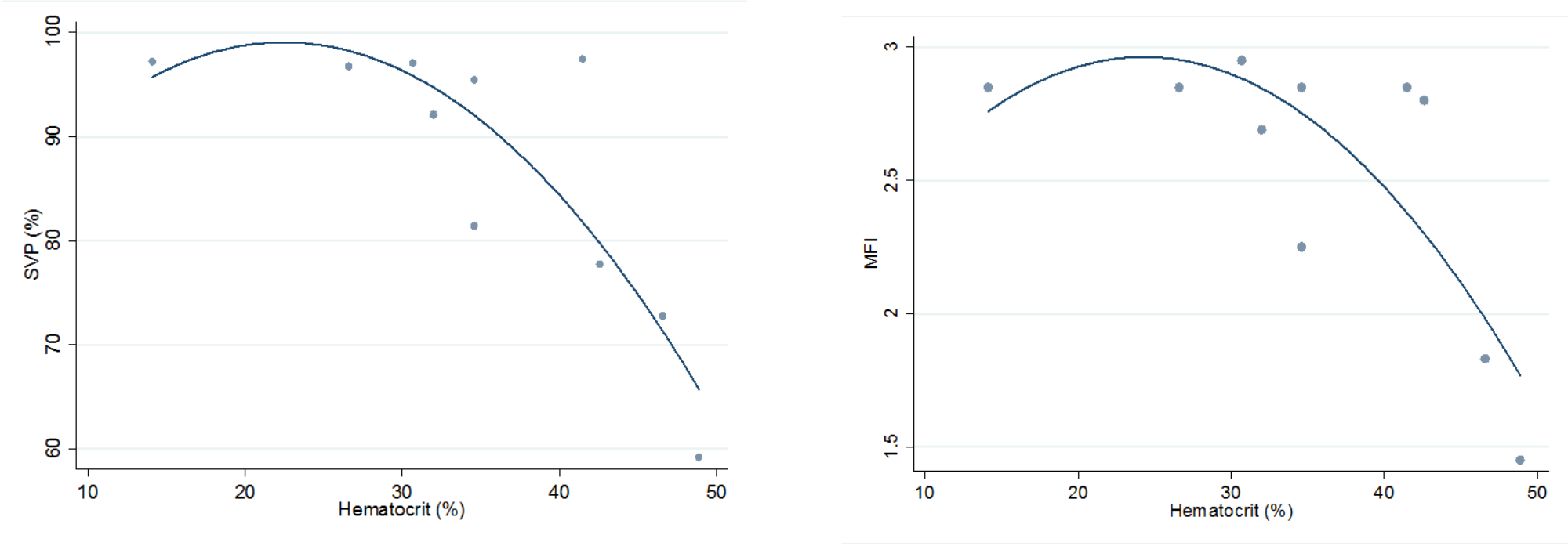

Figure 1. Correlation between changes in microcirculatory flow index (MFI), proportion of perfused vessels (PPV) and hemoglobin.

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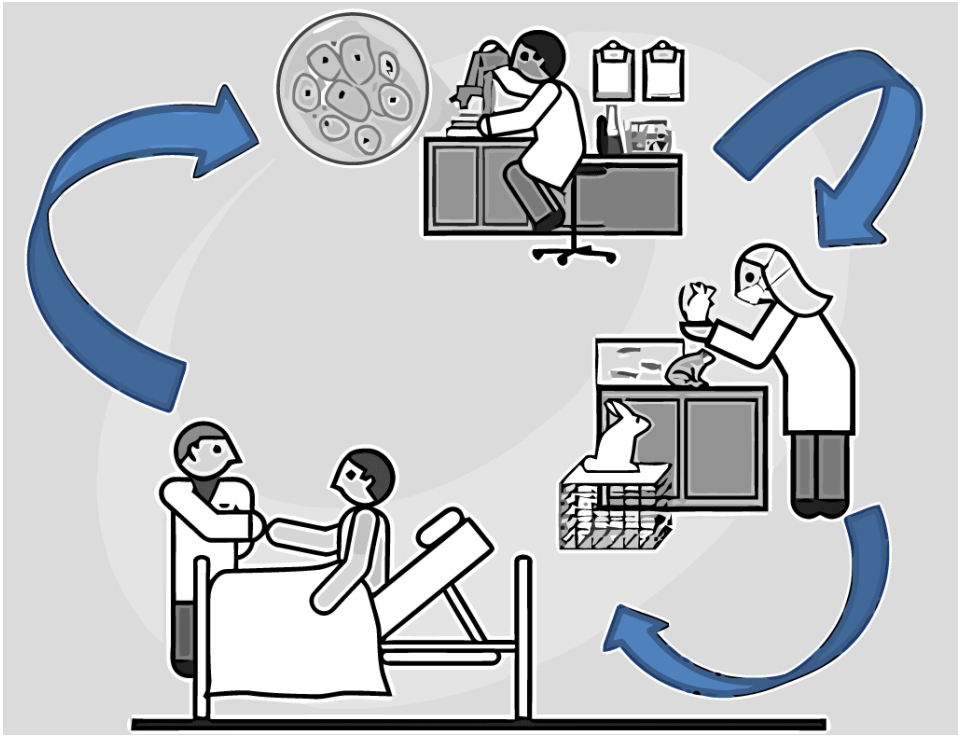
Investigación Traslacional



PNAS

Virus-inclusive single-cell RNA sequencing reveals the molecular signature of progression to severe dengue

Fabio Zanini[a,1], Makeda L. Robinson[b,c,1], Derek Croote[a], Malaya Kumar Sahoo[d], Ana Maria Sanz[e], Eliana Ortiz-Lasso[f], Ludwig Luis Albornoz[f], Fernando Rosso[e,g], Jose G. Montoya[c], Leslie Goo[h], Benjamin A. Pinsky[c,d], Stephen R. Quake[a,h,i,2], and Shirit Einav[b,c,2]

[a]Department of Bioengineering, Stanford University, Stanford, CA 94305; [b]Department of Microbiology and Immunology, Stanford University School of Medicine, Stanford, CA 94305; [c]Division of Infectious Diseases and Geographic Medicine, Department of Medicine, Stanford University School of Medicine, Stanford, CA 94305; [d]Department of Pathology, Stanford University School of Medicine, Stanford, CA 94304; [e]Clinical Research Center, Fundación Valle del Lili, Cali 760026, Colombia; [f]Pathology and Laboratory Department, Fundación Valle del Lili, Cali 760026, Colombia; [g]Division of Infectious Diseases, Department of Internal Medicine, Fundación Valle del Lili, Cali 760026, Colombia; [h]Chan Zuckerberg Biohub, San Francisco, CA 94158; and [i]Department of Applied Physics, Stanford University, Stanford, CA 94305

Proc Natl Acad Sci U S A. 2018 Dec 26;115(52):E12363-E12369. doi: 10.1073/pnas.1813819115. Epub 2018 Dec 7.

Stanford University

We explored immune activation of bystander cells, clonality and somatic evolution of adaptive immune repertoires, as well as viral genomics. This multifaceted approach could advance understanding of pathogenesis of any viral infection, map an atlas of infected cells, and promote the development of prognostics

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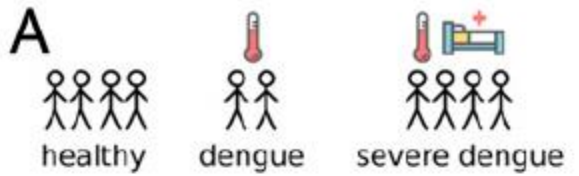
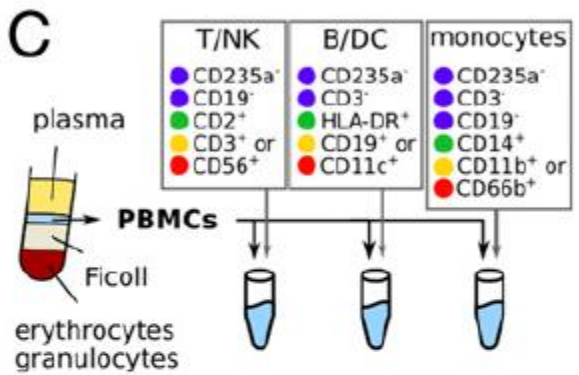
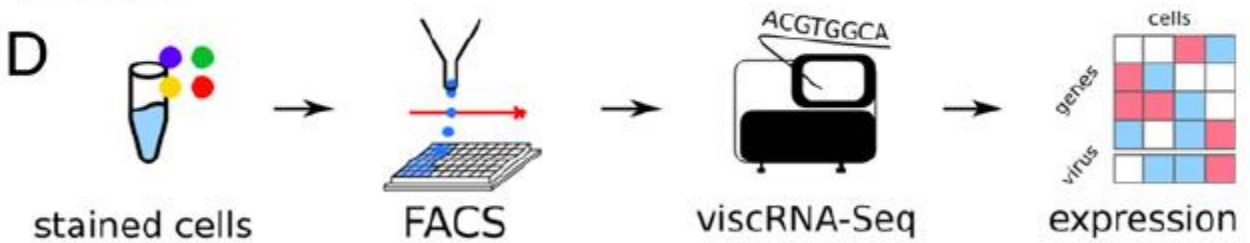


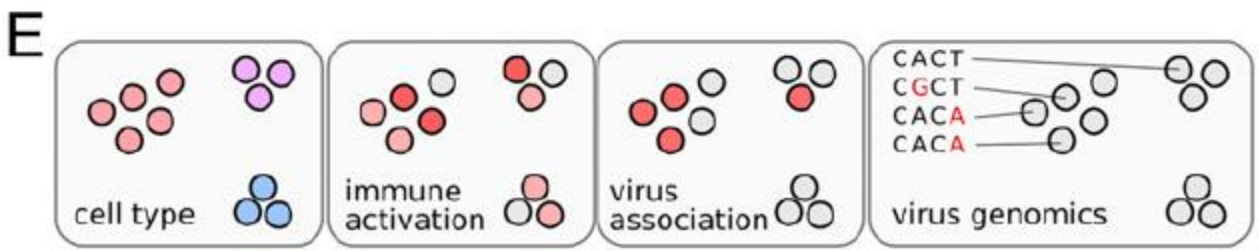
B

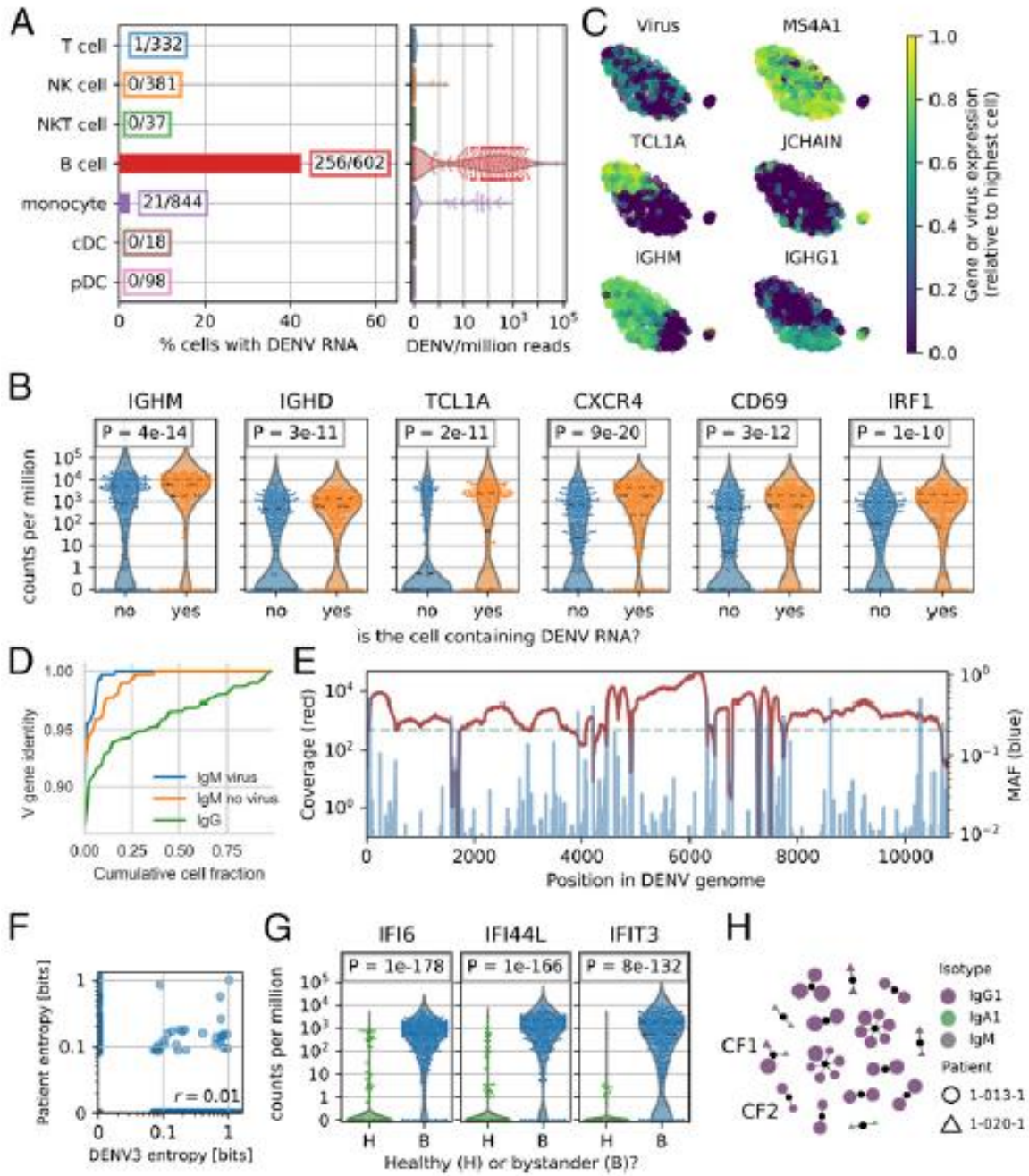
subject	diagnosis	serotype	viral load*
3-013-1	healthy	N.A.	0
3-027-1	healthy	N.A.	0
3-018-1	healthy	N.A.	0
3-006-1	healthy	N.A.	0
1-008-1	dengue	4	8×10^3
1-020-1	dengue	1	1×10^6
1-013-1	severe	4	9×10^3
1-026-1	severe	3	9×10^8
1-010-1	severe	3	6×10^5
1-036-1	severe	3	5×10^7

* copies / ml of plasma









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Cell Reports
Report

A 20-Gene Set Predictive of Progression to Severe Dengue

Makeda Robinson,[1,2,10] Timothy E. Sweeney,[3,4,9,10] Rina Barouch-Bentov,[1] Malaya Kumar Sahoo,[5] Larry Kalesinskas,[3,4] Francesco Vallania,[3,4] Ana Maria Sanz,[6] Eliana Ortiz-Lasso,[7] Ludwig Luis Albornoz,[7] Fernando Rosso,[6,8] Jose G. Montoya,[1] Benjamin A. Pinsky,[1,5] Purvesh Khatri,[3,4,11,*] and Shirit Einav[1,2,11,12,*]

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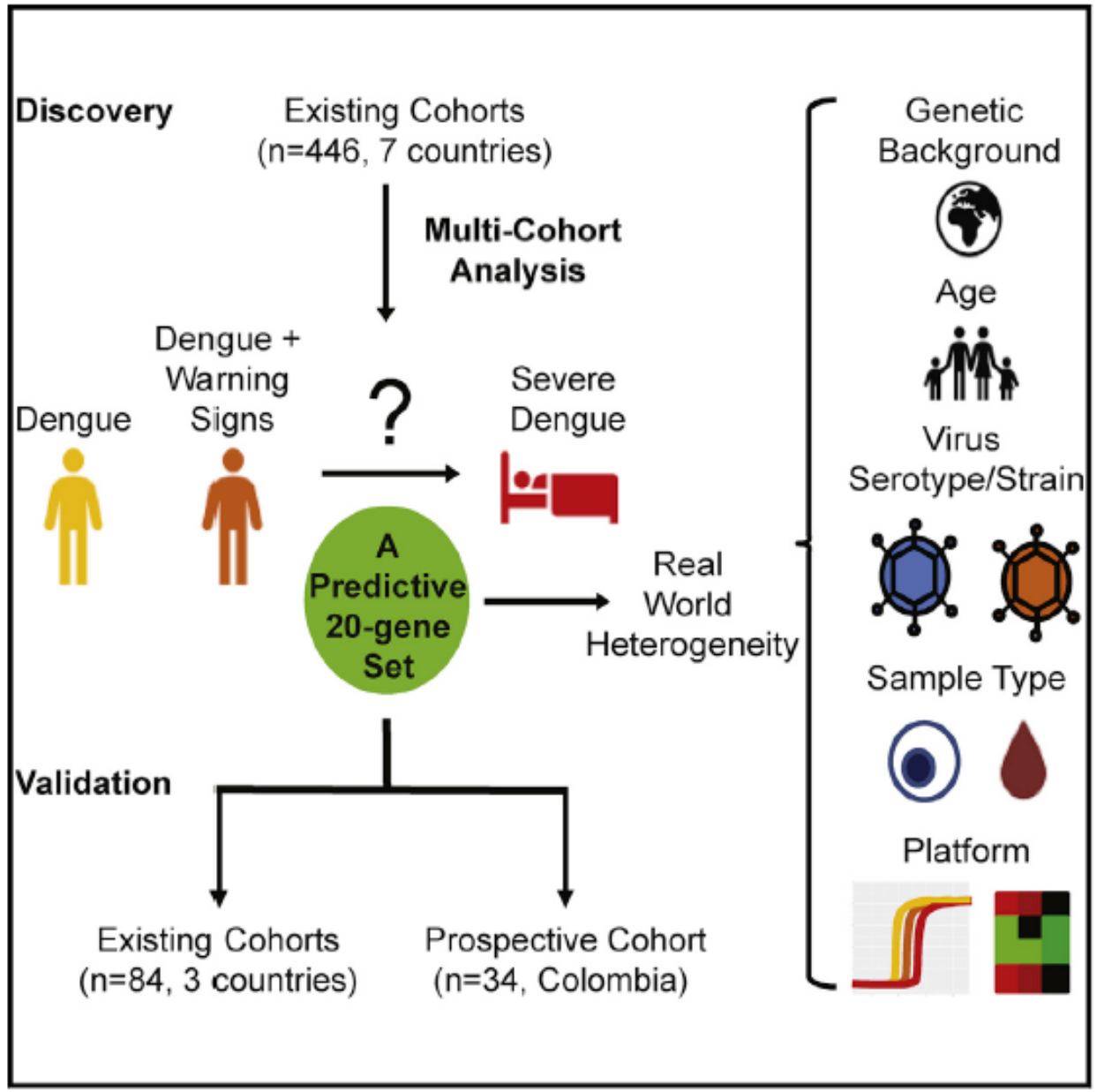
https://doi.org/10.1016/j.celrep.2019.01.033



A

Systematic Search
10 clinical whole blood or PBMC dengue datasets identified

↓

Multi-Cohort Analysis
7 discovery datasets comparing DF vs. DHF/DSS (N=446)

↓

Significance Thresholding
Hedge's g and Fischer's sum of logs FDR threshold q<0.1, ES>1.3 fold

↓

Forward Search Optimizing AUC in Discovery Datasets

↓

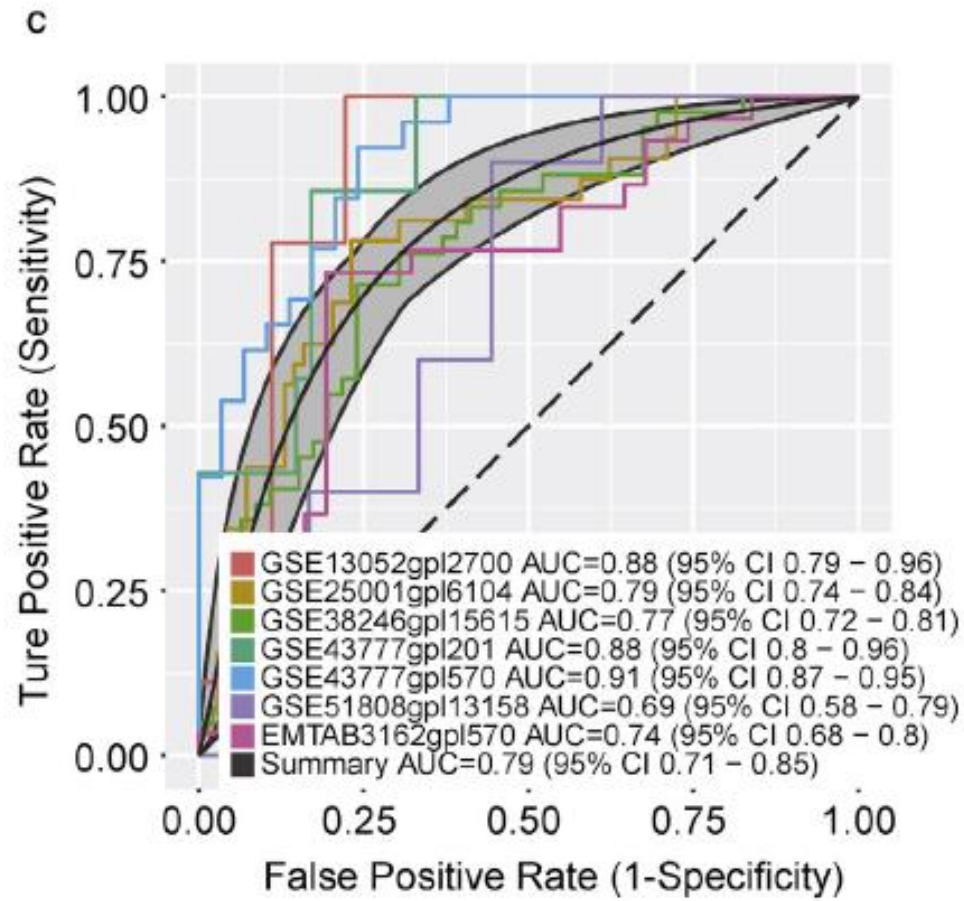
DEFA4, GYG1, TOR3A, PTPRM, SPON2, GRAP2,
CACNA2D2, CACNA2D3, TMEM63C, AK5, CHD3, CX3CR1,
TRERF1, GBP2, SERINC5, SOX13, NCR3, ABI3, C3orf18, ENPP5

↓

In Silico Validation of Severe Dengue Signature
3 validation datasets (N=84)

↓

Prospective Validation of Severe Dengue Signature
Prospective Colombia Cohort (N=34)



Investigación Salud Pública

A Mobile Application for management and surveillance of vector-borne diseases in Cali, Colombia: An evaluation of usability and acceptability in a hospital setting

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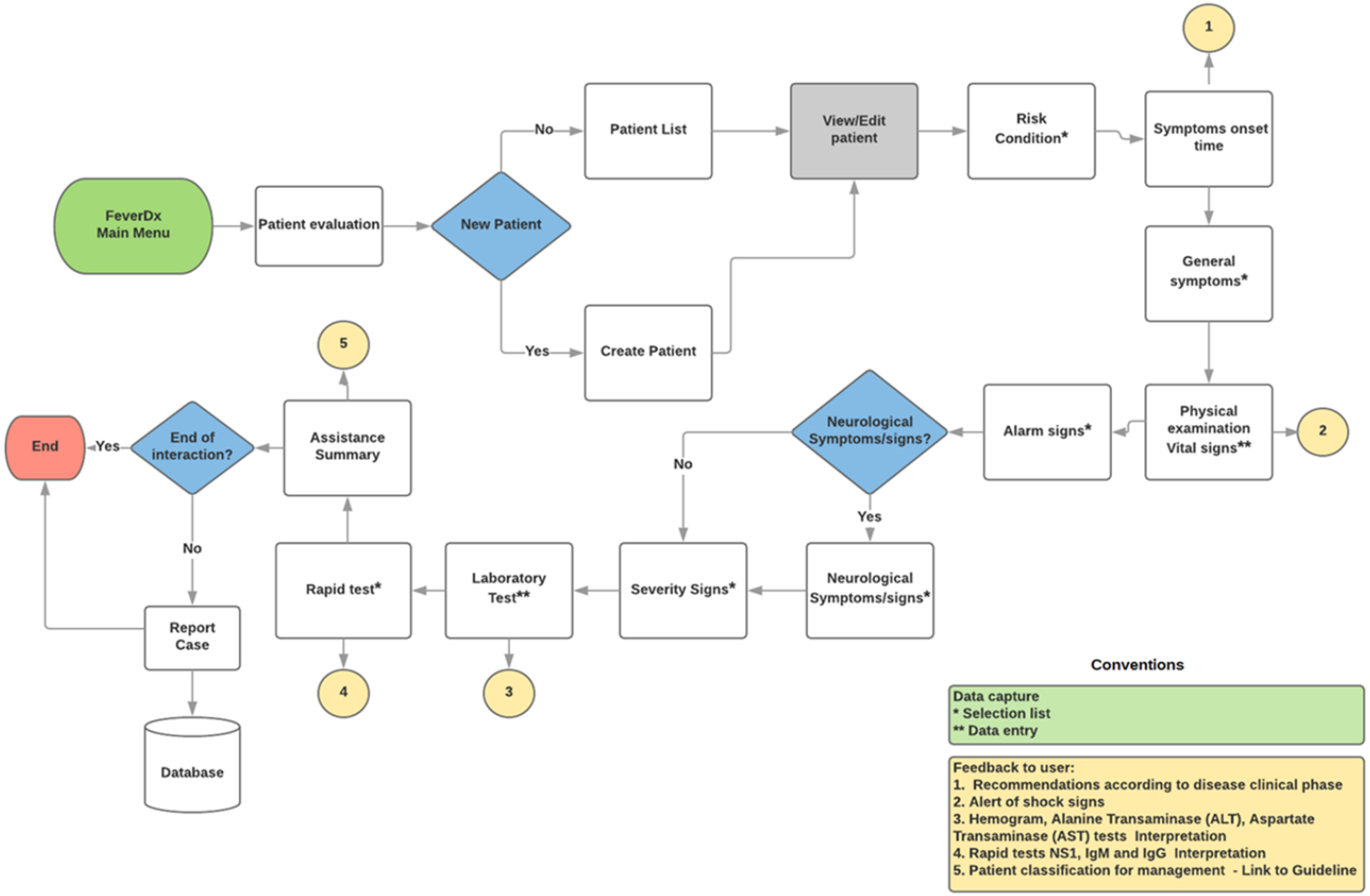
Sarita Rodríguez Ing MD ; Ana María Sanz MD; Gonzalo Llano PhD, Andrés Navarro PhD, Luis Gabriel Parra-Lara MD, Amy R Krystosik PhD, Fernando Rosso MD MSc.



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A Mobile Application for management and surveillance of vector-borne diseases in Cali, Colombia: An evaluation of usability and acceptability in a hospital setting

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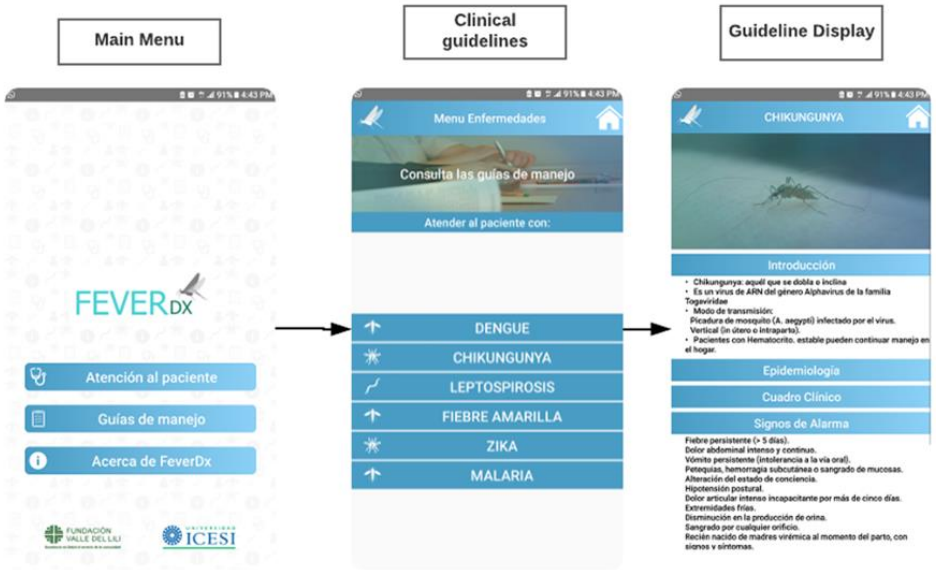

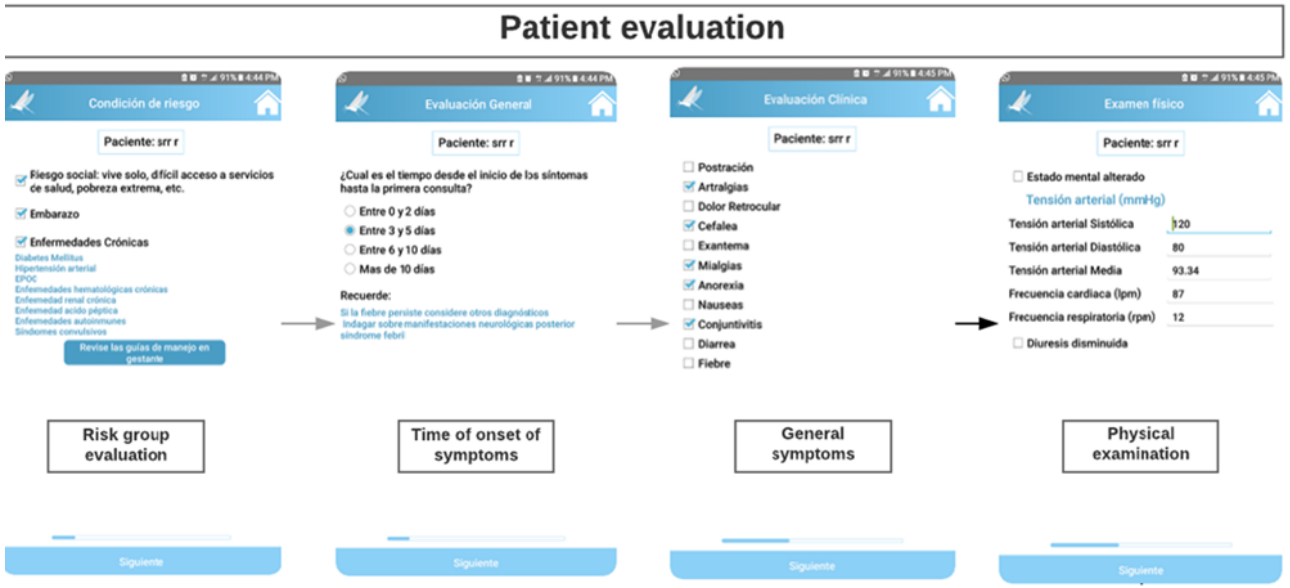

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