Prise en charge d'un cas importé de fièvre hémorragique argentine RETEX

Nicolas Dauby M.D. Ph.D
Maladies Infectieuses - CHU Saint-Pierre - Bruxelles

11ème Journée nationale REB - Mission COREB, Ecole du Val de Grâce - Paris,
19 Juin 2025

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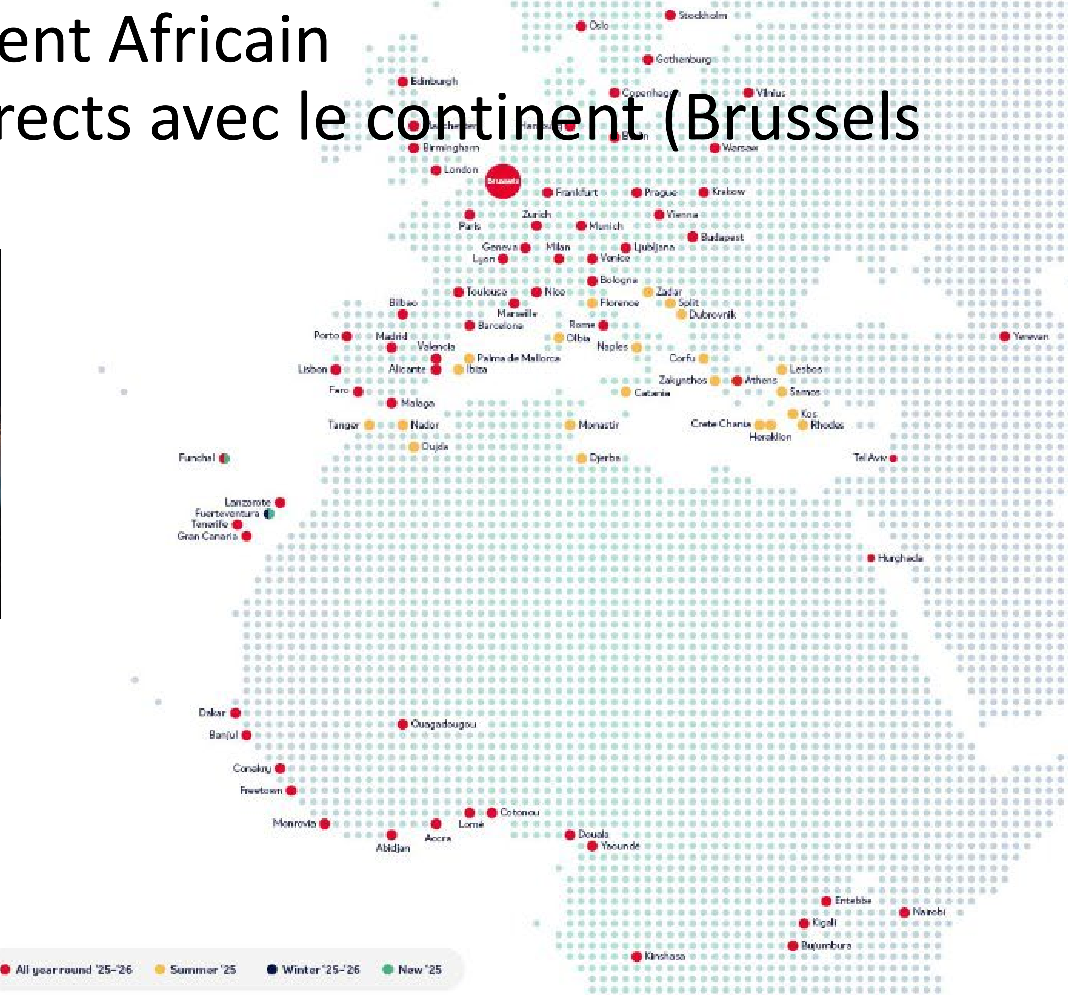
brussels airlines - we fly you to the home of Tintin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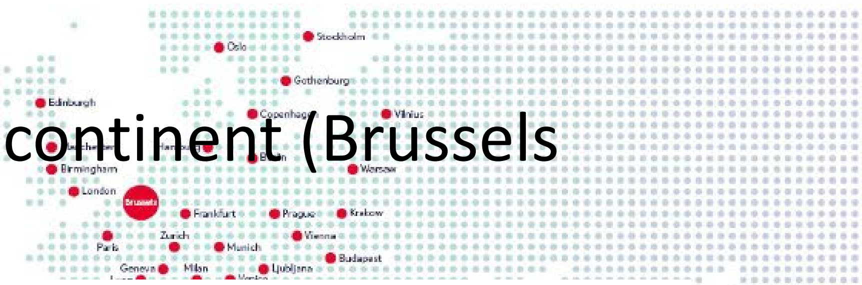
Yaoundé
Entebbe
Nairobi
Kigali
Bujumbura
Kinshasa
● All year round '25-'26
● Summer '25
● Winter '25-'26
● New '25

Bruxelles et le continent Africain
Liaisons aériennes directs avec le continent (Brussels Airlines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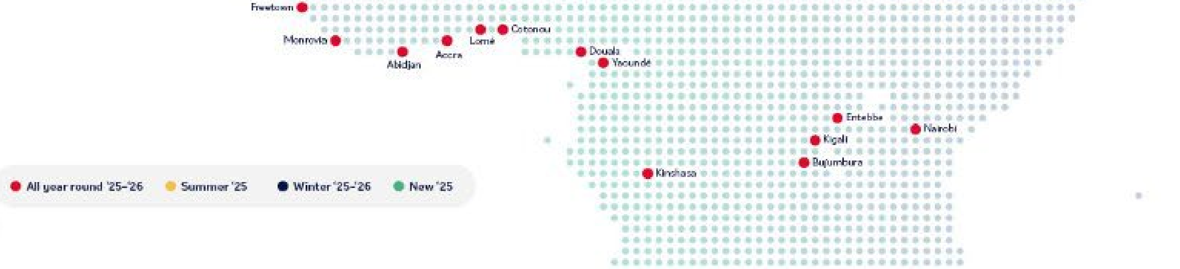
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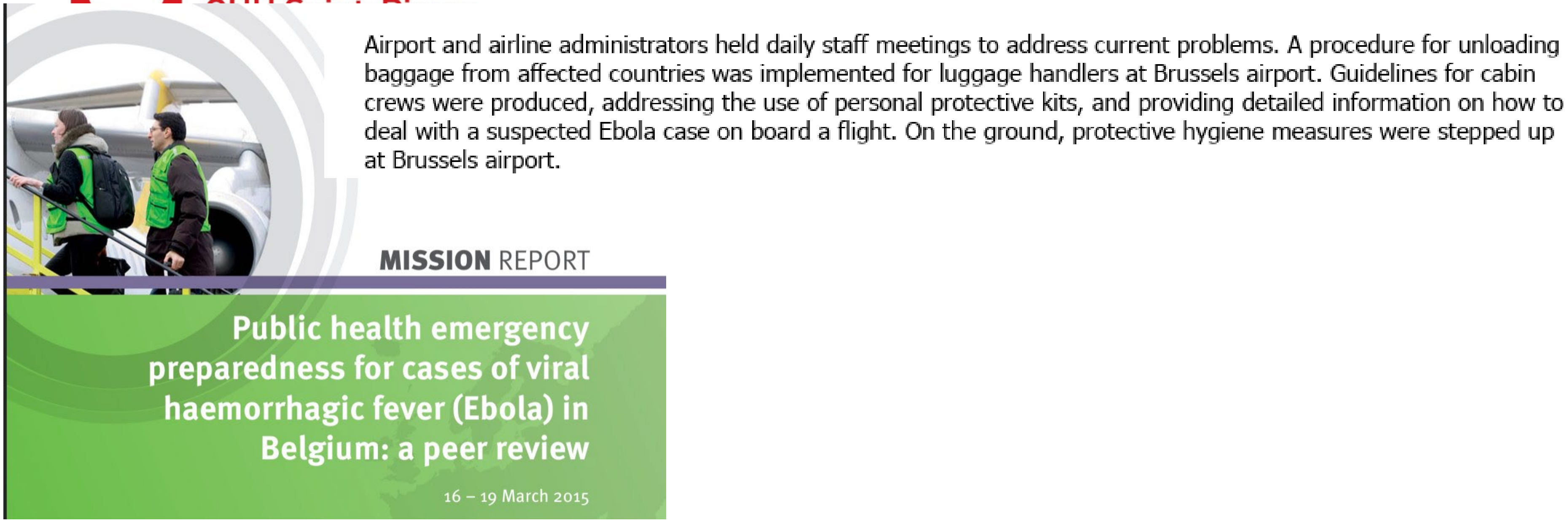

Airport and airline administrators held daily staff meetings to address current problems. A procedure for unloading baggage from affected countries was implemented for luggage handlers at Brussels airport. Guidelines for cabin crews were produced, addressing the use of personal protective kits, and providing detailed information on how to deal with a suspected Ebola case on board a flight. On the ground, protective hygiene measures were stepped up at Brussels airport.

MISSION REPORT

Public health emergency preparedness for cases of viral haemorrhagic fever (Ebola) in Belgium: a peer review

16 – 19 March 2015

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MISSION REPORT

Public health emergency preparedness for cases of viral haemorrhagic fever (Ebola) in Belgium: a peer review

16 –

In the period 2/2014–2/2015, 11 ‘probable cases’ tested negative for Ebola. Initially, they met three criteria, a fact which was discussed with the health inspectors in charge at the time. The cases were then admitted to isolation units and laboratory tests were made (PCR). Other possible cases did not meet all three criteria and could not be confirmed.

- Country of possible infection: Guinea (n=8); Sierra Leone (n=2); Liberia (n=1)
- Type of exposure: humanitarian aid workers: n=5 (2 high-risk exposure), recent contact with local hospital: n=1, recent contact with known or possible Ebola patient/funeral: n=3, unable to assess: n=2
- Admitted to reference hospitals: Saint-Pierre University Hospital, Brussels (n=5); Antwerp University Hospital (n=4); Leuven University Hospital (n=2)
- Tested in Hamburg (BNI): n=5, Antwerp (ITM): n=6

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MISSION REPORT

Public health emergency preparedness for cases of viral haemorrhagic fever (Ebola) in Belgium: a peer review

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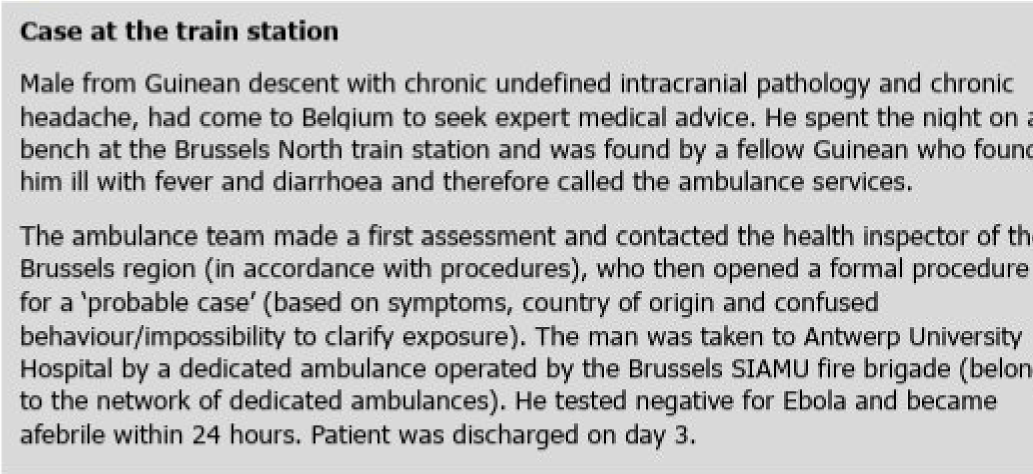
Figure 2: Suspected cases


Case at the train station

Male from Guinean descent with chronic undefined intracranial pathology and chronic headache, had come to Belgium to seek expert medical advice. He spent the night on a bench at the Brussels North train station and was found by a fellow Guinean who foun him ill with fever and diarrhoea and therefore called the ambulance services.

The ambulance team made a first assessment and contacted the health inspector of th Brussels region (in accordance with procedures), who then opened a formal procedure for a 'probable case' (based on symptoms, country of origin and confused behaviour/impossibility to clarify exposure). The man was taken to Antwerp University Hospital by a dedicated ambulance operated by the Brussels SIAMU fire brigade (belon to the network of dedicated ambulances). He tested negative for Ebola and became afebrile within 24 hours. Patient was discharged on day 3.

In the period 2/2014
which was discussed
units and laboratory
confirmed.

- Country of po
- Type of expos
  n=1, recent c
- Admitted to re
  Hospital (n=4); Leuven University Hospital (n=2)
- Tested in Hamburg (BNI): n=5, Antwerp (ITM): n=6

A propos d’un cas, Janvier 2020

- Dame de 41 ans, avocate ‘vit à Buenos Aires’
- En voyage touristique avant une formation, avec une collègue
- Vol Buenos Aires → Amsterdam (4 j) puis bus vers Bruxelles-Midi

Admise aux urgences le 6/01/2020 au CHU Saint-Pierre: confusion, désorientation depuis la veille (encéphalopathie), fébrile,

Sa collègue rapporte des vomissements depuis quelques jours,
pas de photophobie
mal de gorge

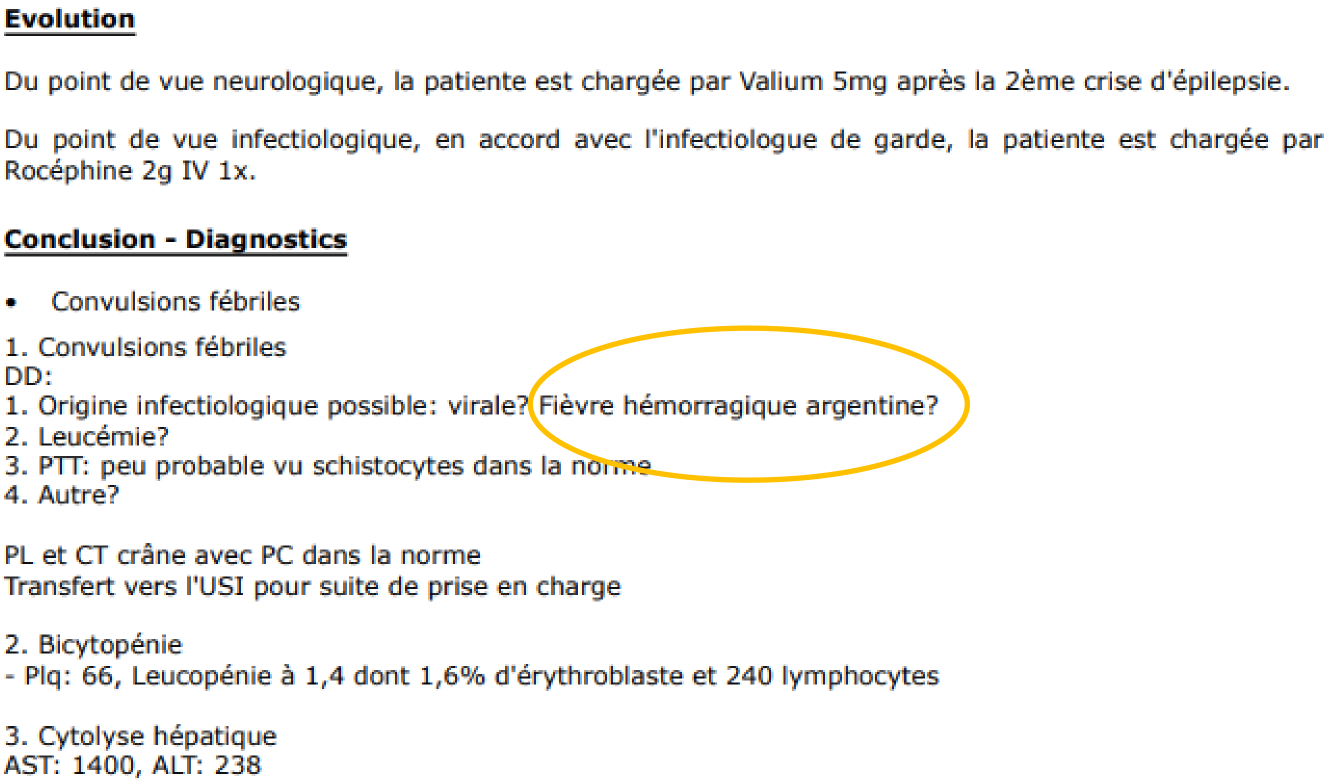
- Convulsions et saignements vaginaux (pas aux points de ponction, pas de purpura ni pétéchies)
- Difficulté à dire son nom
- Conjonctivite

Biologie: hypoplaquettose (66.000) , neutropénie, rhabdomyolyse, cytolyse hépatique (AST 1400) , insuffisance rénale (Créatinine 1.13)

CT Scan cérébral normal

Ponction Lombaire 0 élément nucléé

Traitement empirique par Ceftriaxone 2g



Evolution

Du point de vue neurologique, la patiente est chargée par Valium 5mg après la 2ème crise d'épilepsie.

Du point de vue infectiologique, en accord avec l'infectiologue de garde, la patiente est chargée par Rocéphine 2g IV 1x.

Conclusion - Diagnostics

- Convulsions fébriles

1. Convulsions fébriles
DD:
1. Origine infectiologique possible: virale? Fièvre hémorragique argentine?
2. Leucémie?
3. PTT: peu probable vu schistocytes dans la norme
4. Autre?

PL et CT crâne avec PC dans la norme
Transfert vers l'USI pour suite de prise en charge

2. Bicytopénie
- Plq: 66, Leucopénie à 1,4 dont 1,6% d'érythroblaste et 240 lymphocytes

3. Cytolyse hépatique
AST: 1400, ALT: 238

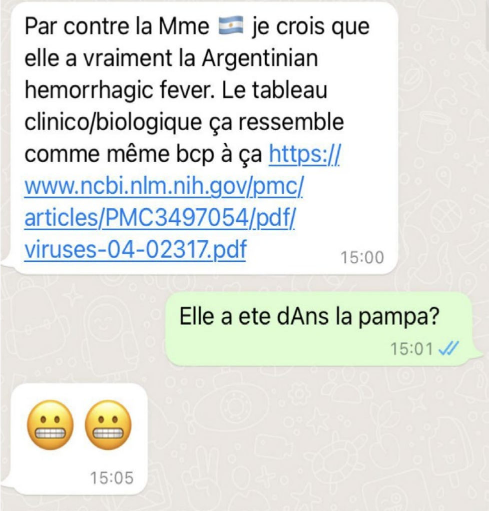
Admission aux soins intensifs

J 1

- **Hémoculture positive (½) E. Coli**
- **Traitement antibiotique adapté**
- **Ponction de moelle : aplasie médullaire**

J 2

Complément d'anamnèse
Syndrome "grippal" depuis 1 semaine
Sous amoxiciline depuis lors
Départ pour Amsterdam en étant malade
Une prise de sang à Buenos Aires le 30/12
- **Plaquette 144.000**



Par contre la Mme 🇦🇷 je crois que elle a vraiment la Argentinian hemorrhagic fever. Le tableau clinico/biologique ça ressemble comme même bcp à ça https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3497054/pdf/viruses-04-02317.pdf 15:00

Elle a ete dAns la pampa? 15:01 ✓✓

😬😬 15:05

Admission aux soins intensifs

J 4

- **Ananmèse avec le compagnon**
  - Epidémie de fièvre hémorragique Argentine (virus Junin) dans la région où ils habitent, campagne de vaccination en cours mais à court de vaccins….
  - La ville d'origine est Perez (Province Santa Fe)
  - Pas d’activité agricole mais parfois jogging dans la campagne

- **Entretien avec Dr Claudia Perandones, directrice de ANLIS : diagnostic hautement probable d'une infection par le virus Junin**

- **Décision de traitement empirique par Ribavirine 30 mg /kg (dose de charge puis 15 mg/kg/6h 4 jours)**
- **Intubation pour obstruction pharyngée haute avec bascule linguale**
- **Code "ROSE"**

J 5, en soirée

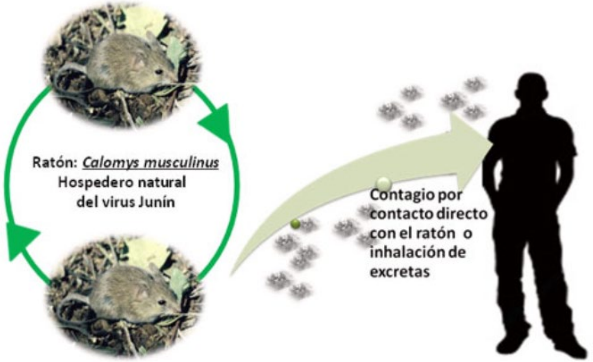
Confirmation du diagnostic
PCR positive (Hambourg)

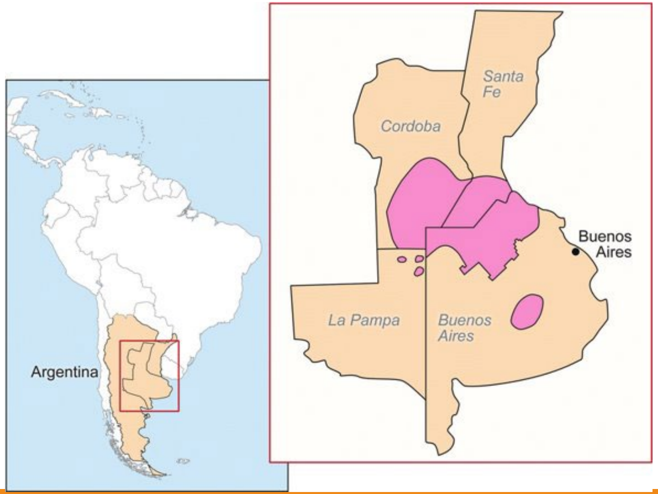
J6
Saignement au niveau des points de ponction

Code "Bleu"

Fièvre Hémorragique Argentine

- *Arenaviridae* : Junin Virus
- Identifié en 1958
- Epidémies annuelles avant vaccination
- Pampas
- Réservoir = rongeurs
- Travailleurs agricoles
- Peu/pas de transmission inter-humaine


Ratón: *Calomys musculinus*
Hospedero natural
del virus Junín
Contagio por
contacto directo
con el ratón o
inhalación de
excretas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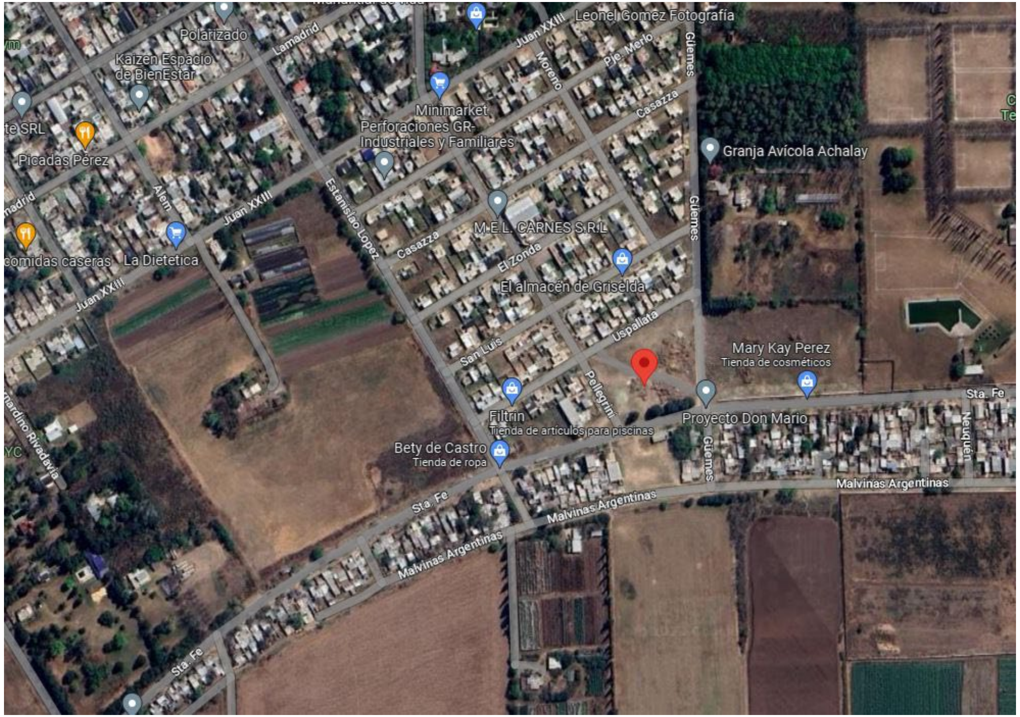
Cordoba
Buenos Aires
La Pampa
Buenos Aires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Pje. Merlo
Güemes
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Minimarket
Perforaciones GR- Industriales y Familiares
Casazza
Granja Avícola Achalay
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Alem
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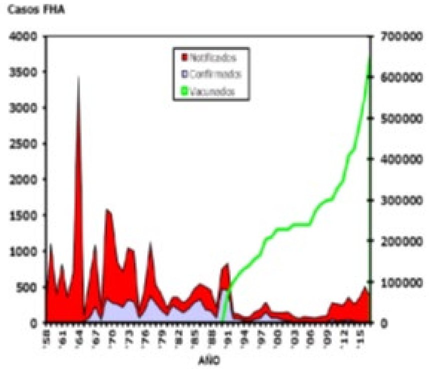
M.E.L. CARNES S.R.L
Güemes
comidas caseras
La Dietetica
Casazza
El Zonda
El almacén de Griselda
Juan XXIII
Uspallata
San Luis
Pellegrini
Mary Kay Perez
Tienda de cosméticos
Sta. Fe
Neuquén
nardino Rivadavia
Filtrin
Tienda de articulos para piscinas
Proyecto Don Mario
Bety de Castro
Tienda de ropa
Güemes
Malvinas Argentinas
Sta. Fe
Malvinas Argentinas
Malvinas Argentinas
Sta. Fe

PEREZ CIUDAD

Prévention de la FHA

- Cinq millions de personnes à risque
- Vaccination depuis 1990 (Candid 1)
- 95% efficacité
- >1.200.000 personnes vaccinées
- Recommandé pour toute personne habitant en zone à risque

DISTRIBUCIÓN DE CASOS DE FIEBRE HEMORRÁGICA ARGENTINA
1958-2017

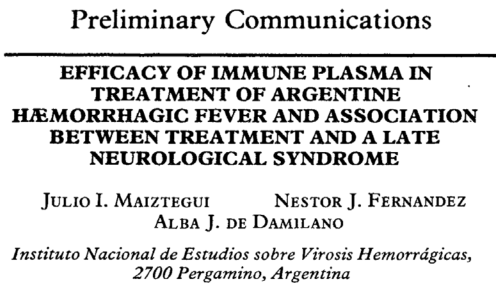


Antes de la disponibilidad de una vacuna
- 1990: 481 casos confirmados
- 1991: 452 casos confirmados

Posterior a la introducción de la vacuna:
- 2016: 16 casos confirmados
- 2017: 19 casos confirmados
- 2018: 13 casos confirmados

Traitement de la fièvre hémorragique argentine

- Essai randomisé double aveugle (1974-1978) :
  - 500 ml plasma immun vs plasma normal
  - 188 cas inclus (<8 jours de symptômes)
  - Mortalité : 16.5% vs 1.1%
- Ribavirine pour patients > 8 jours de symptômes ?
  - Essai ouvert, 18 cas
  - Pas de différence de mortalité


Preliminary Communications

EFFICACY OF IMMUNE PLASMA IN TREATMENT OF ARGENTINE HÆMORRHAGIC FEVER AND ASSOCIATION BETWEEN TREATMENT AND A LATE NEUROLOGICAL SYNDROME

JULIO I. MAIZTEGUI NESTOR J. FERNANDEZ
ALBA J. DE DAMILANO

Instituto Nacional de Estudios sobre Virosis Hemorrágicas, 2700 Pergamino, Argentina

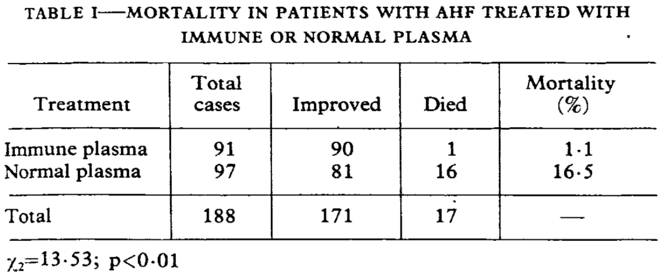


TABLE I—MORTALITY IN PATIENTS WITH AHF TREATED WITH IMMUNE OR NORMAL PLASMA

Treatment	Total cases	Improved	Died	Mortality (%)
Immune plasma	91	90	1	1·1
Normal plasma	97	81	16	16·5
Total	188	171	17	—

$\chi_2=13\cdot53$; $p<0\cdot01$

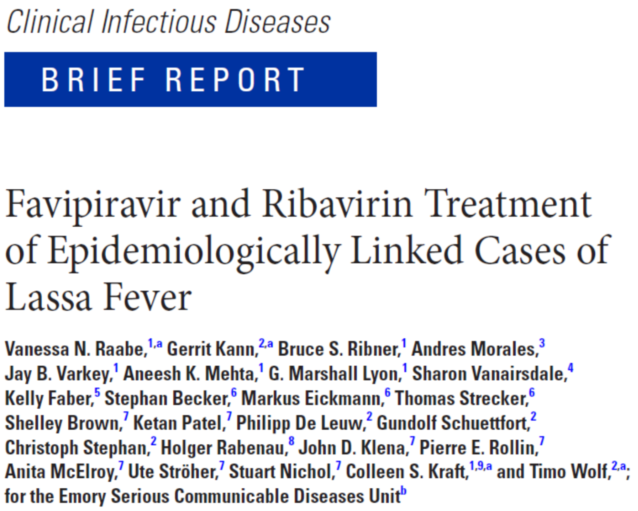
95Kpa Specim
sert absorbent material and specimens into
emove paper backing from adhesive tape
ress tape seal firmly overlapping the opening
AIRSEA
Ruz 22 941
14/08/
PESO 2
Instituto Nacional de Enfermedades Virales Humanas "Dr. Julio I. Maiztegui"
ENTREGA DE
Nº Códig
REPUBLICA ARGENTINA
ARG-01
FOJA 106

Managing patients with no evidence

- Ethically challenging
  - Imperative of helping vulnerable & suffering people (beneficience)
  - Imperative of not harming people (*primum non nocere)*
  - Acting under great uncertainty
- Epistemically challenging :
  - Imperative of knowing in order to help & avoid harm

Slide by B. Hofmann,
ECCVID 2020

Brian Gowen

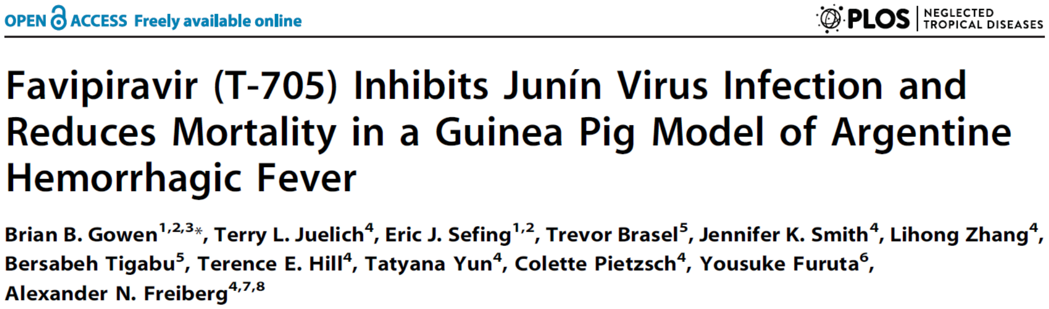


Clinical Infectious Diseases

BRIEF REPORT

Favipiravir and Ribavirin Treatment of Epidemiologically Linked Cases of Lassa Fever

Vanessa N. Raabe,[1,a] Gerrit Kann,[2,a] Bruce S. Ribner,[1] Andres Morales,[3] Jay B. Varkey,[1] Aneesh K. Mehta,[1] G. Marshall Lyon,[1] Sharon Vanairsdale,[4] Kelly Faber,[5] Stephan Becker,[6] Markus Eickmann,[6] Thomas Strecker,[6] Shelley Brown,[7] Ketan Patel,[7] Philipp De Leuw,[2] Gundolf Schuettfort,[2] Christoph Stephan,[2] Holger Rabenau,[8] John D. Klena,[7] Pierre E. Rollin,[7] Anita McElroy,[7] Ute Ströher,[7] Stuart Nichol,[7] Colleen S. Kraft,[1,9,a] and Timo Wolf,[2,a]; for the Emory Serious Communicable Diseases Unit[b]



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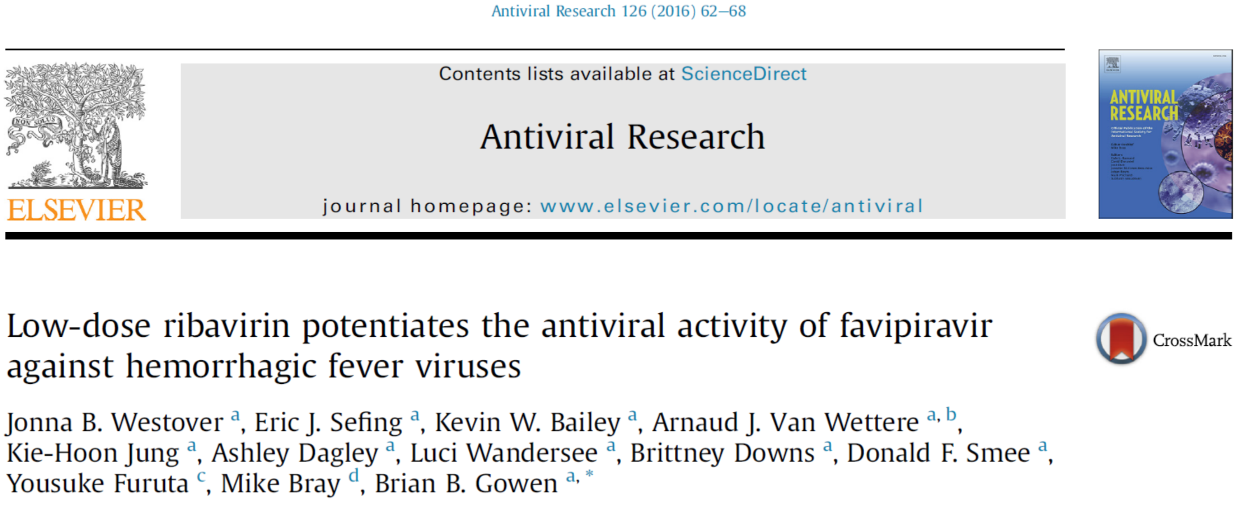
PLOS | NEGLECTED TROPICAL DISEASES

Favipiravir (T-705) Inhibits Junín Virus Infection and Reduces Mortality in a Guinea Pig Model of Argentine Hemorrhagic Fever

Brian B. Gowen[1,2,3]*, Terry L. Juelich[4], Eric J. Sefing[1,2], Trevor Brasel[5], Jennifer K. Smith[4], Lihong Zhang[4], Bersabeh Tigabu[5], Terence E. Hill[4], Tatyana Yun[4], Colette Pietzsch[4], Yousuke Furuta[6], Alexander N. Freiberg[4,7,8]



Antiviral Research 126 (2016) 62–68

Contents lists available at ScienceDirect

Antiviral Research

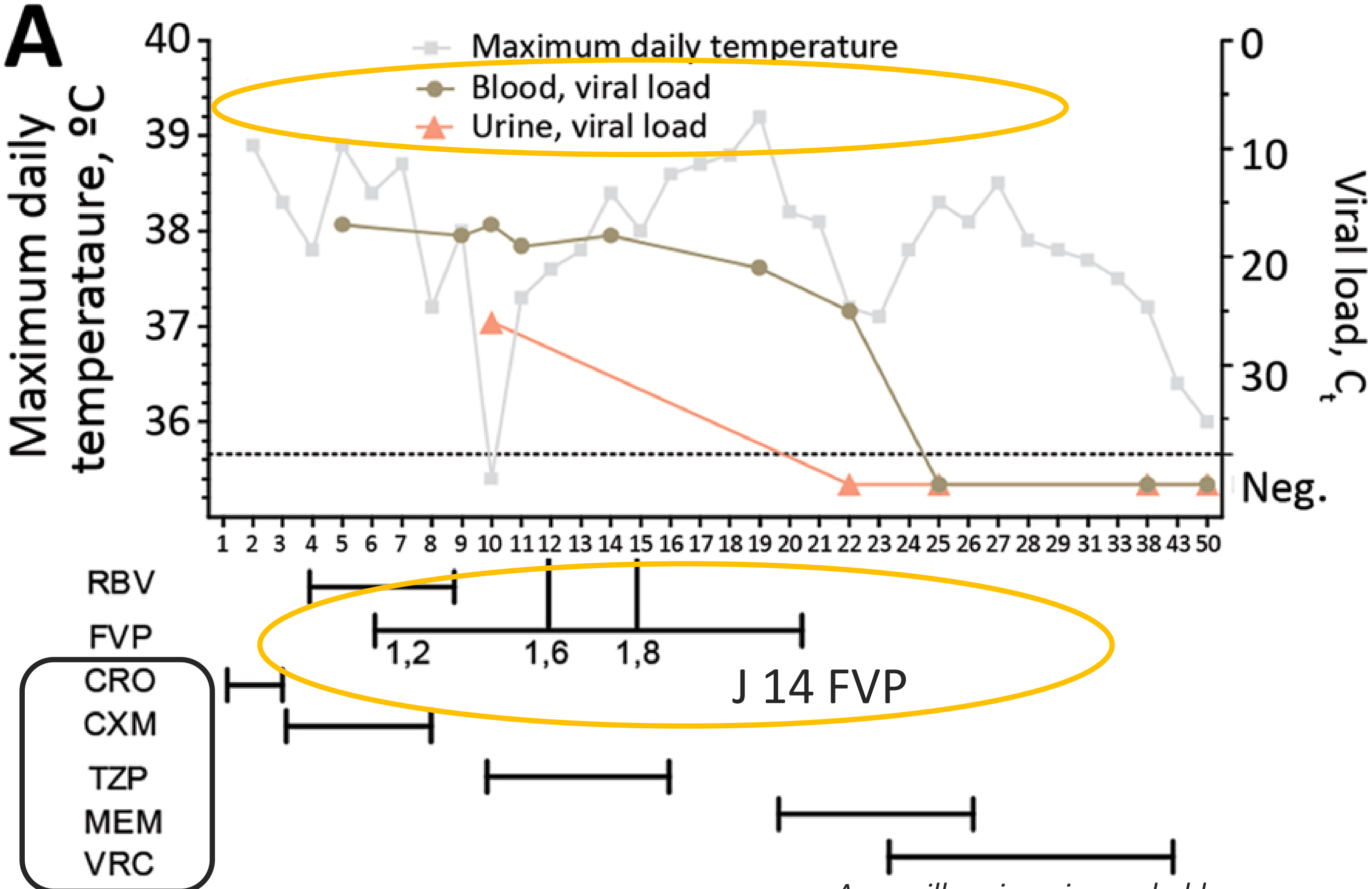
journal homepage: www.elsevier.com/locate/antiviral

ELSEVIER

Low-dose ribavirin potentiates the antiviral activity of favipiravir against hemorrhagic fever viruses

CrossMark

Jonna B. Westover [a], Eric J. Sefing [a], Kevin W. Bailey [a], Arnaud J. Van Wettere [a, b], Kie-Hoon Jung [a], Ashley Dagley [a], Luci Wandersee [a], Brittney Downs [a], Donald F. Smee [a], Yousuke Furuta [c], Mike Bray [d], Brian B. Gowen [a, *]



J 14 FVP

Aspergillose invasive probable

Veliziotis *Emerging Inf Dis* 2020

Monitoring biologique : POCT en BLS3+

Hémato

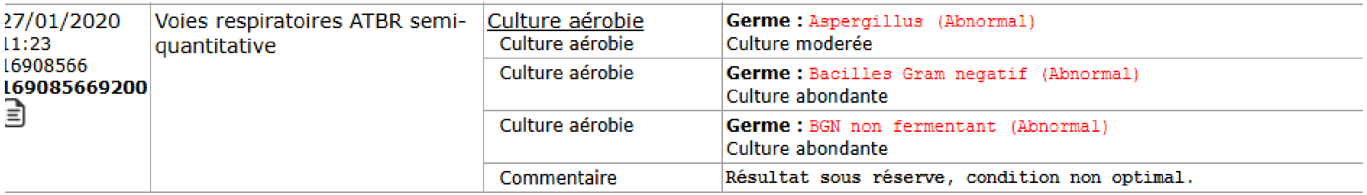
Chimie

ABAXIS
Group Units
Electrolytes
Enzymes
Lipids
Minerals
Proteins
Back
Home
piccolo xpress

Coag

HEMOCHRON® Jr.
Signature+
HEMOCHRON Sig+
START
NOTE
ID
QC
DATA BASE
PRINT
1
2
3
4
5
6
7
8
9
CANCEL
0
ENTER
MENU

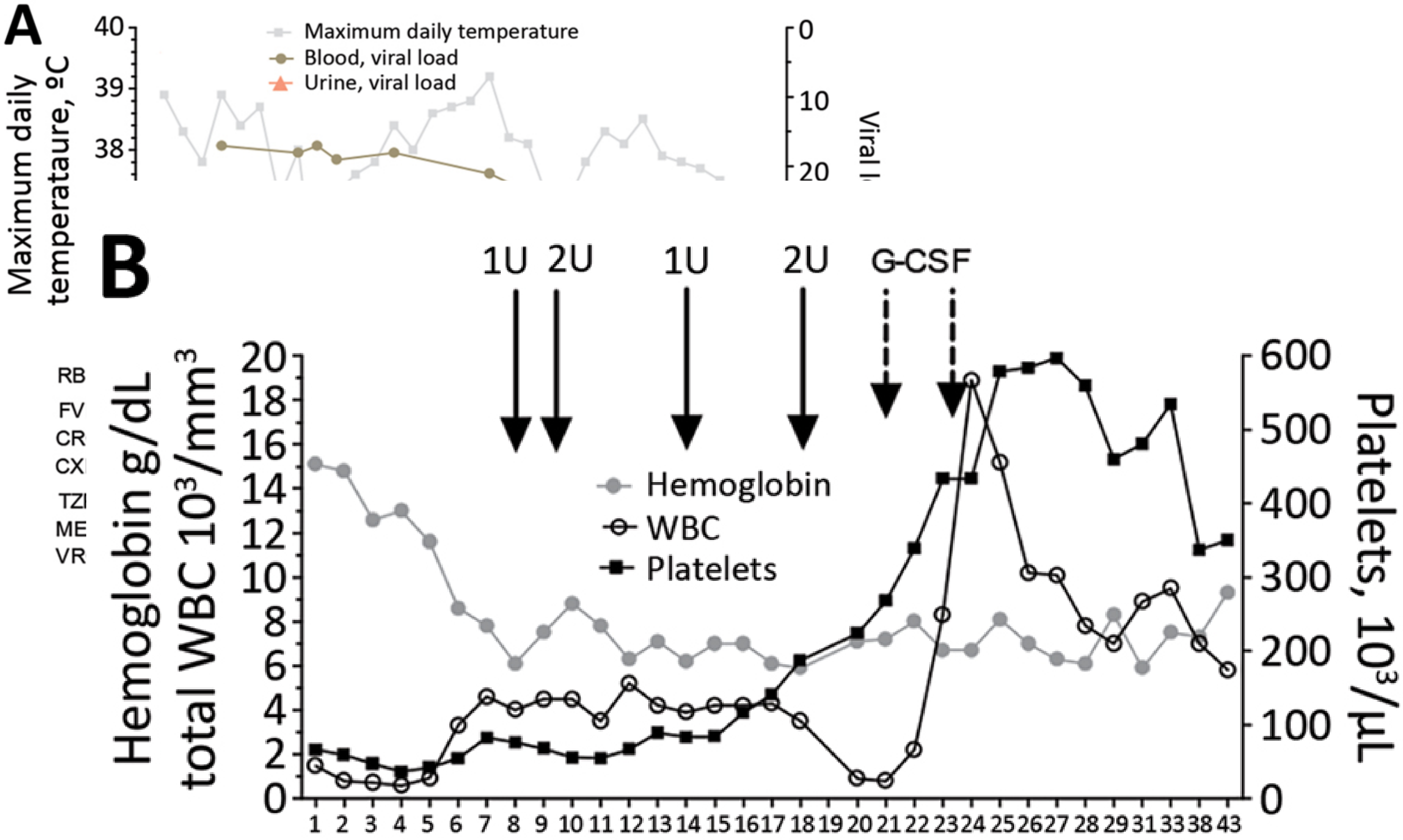
Aspiration trachéo bronchique et LBA et hémocultures incubés en étuve simple sans CO2, boîte sang & chocolat



27/01/2020 11:23 16908566 **169085669200**	Voies respiratoires ATBR semi-quantitative	Culture aérobie Culture aérobie	**Germe :** Aspergillus (Abnormal) Culture moderée
		Culture aérobie	**Germe :** Bacilles Gram negatif (Abnormal) Culture abondante
		Culture aérobie	**Germe :** BGN non fermentant (Abnormal) Culture abondante
		Commentaire	Résultat sous réserve, condition non optimal.

GDH rapid test (*C. Diff*)

Clostridium difficile
GDH
TOXIN A
TOXIN B



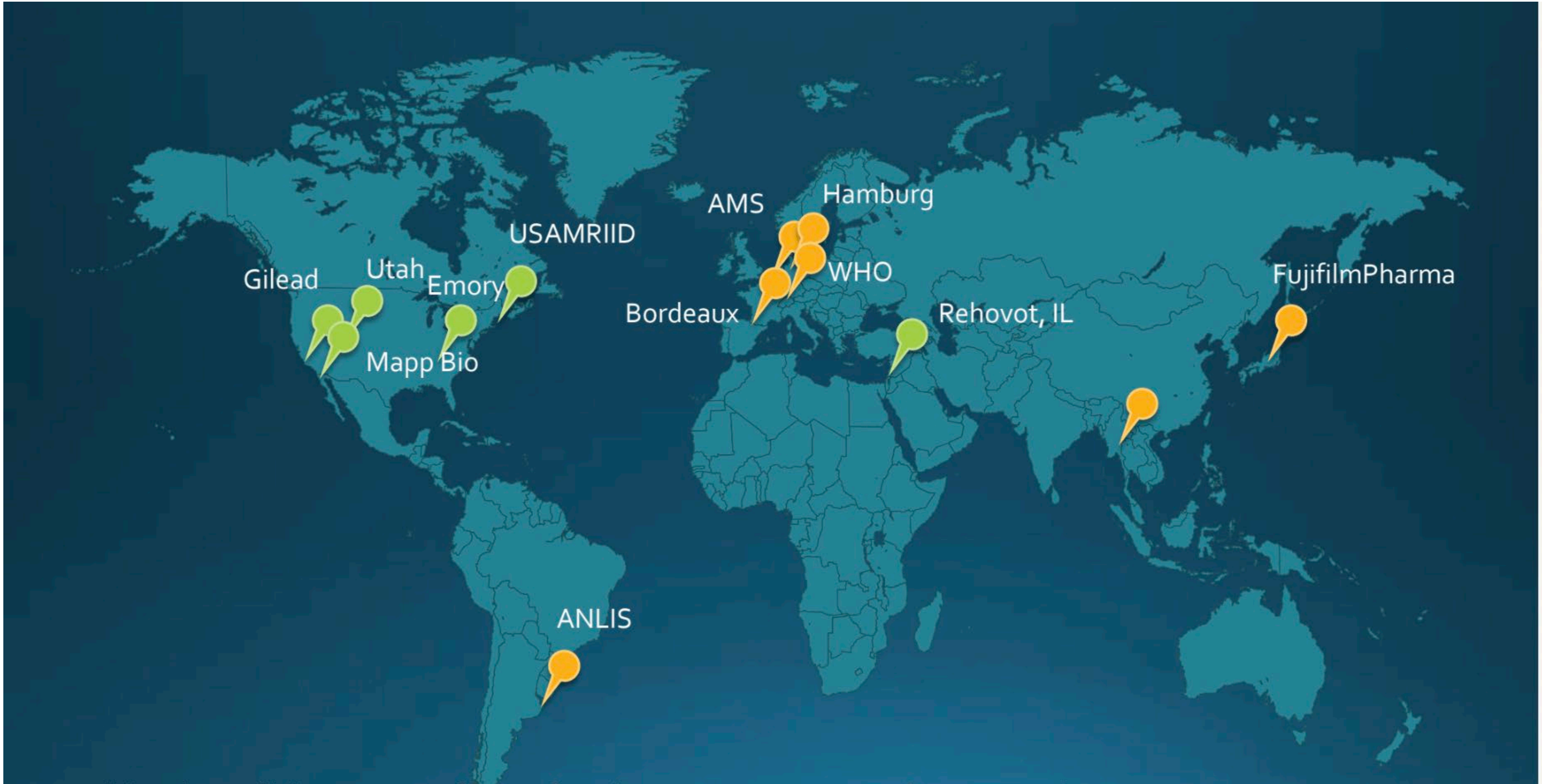
Veliziotis *Emerging Inf Dis* 2020

Extubation J23

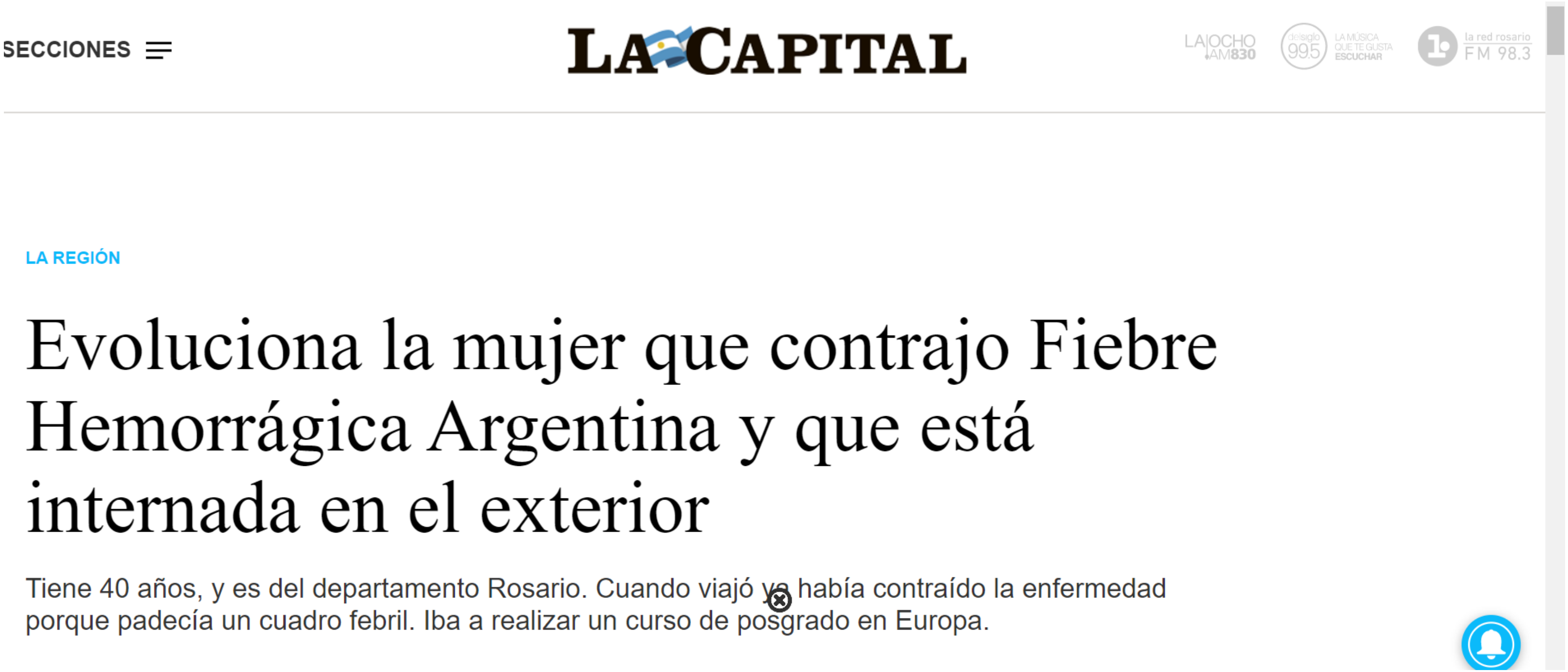
Rapatriée en Argentine J50
Sevrage du Keppra en Argentine
Pas de séquelles

Conclusions de l'hospitalisation

1. Fièvre hémorragique argentine compliquée d'encéphalopathie, rhabdomyolyse, hémorragies diffuses, hépatite, insuffisance rénale modérée
2. Anémie multifactorielle (Junin, Ribavirine, inflammatoire)
3. Leucopénie probablement sur Junin et Favipiravir
4. Bronchopneumonie bilatérale probable à BGN, aspergillose probable
5. Obstruction haute des voies aériennes sur hématome de la langue
6. Allongement du QT (favipiravir & troubles ioniques)


AMS
Hamburg
USAMRIID
Gilead
Utah
Emory
WHO
FujifilmPharma
Bordeaux
Rehovot, IL
Mapp Bio
ANLIS

Worldwide collaborative efforts for the management of imported Argentine Hemorragic Fever


SECCIONES
LA CAPITAL
LA OCHO AM830
delsiglo 99.5
LA MÚSICA QUE TE GUSTA ESCUCHAR
la red rosario FM 98.3

LA REGIÓN

Evoluciona la mujer que contrajo Fiebre Hemorrágica Argentina y que está internada en el exterior

Tiene 40 años, y es del departamento Rosario. Cuando viajó ya había contraído la enfermedad porque padecía un cuadro febril. Iba a realizar un curso de posgrado en Europa.

Direct care to the patient

ICU team

Management of the teams
Inter-disciplinary communication

Hospital leaders

Infectious Diseases consultants

Treatment strategy
Consultancy with external experts worldwide

Drugs order
RBV
FVP

Pharmacists

Infection Control

Training & support to HCW
Management of wastes elimination

Microbiology lab

Samples processing in BLS3 lab
Communication with Hamburg Reference Lab for Haemorrhagic fever

Direct care to the patient

ICU team

Management of the teams
Inter-disciplinary communication

e) Strengths, vulnerabilities and suggested further actions (designated hospitals)

Strengths

Collaboration:

- Good communication and collaboration between staff within and between designated hospitals.
- Collaboration between emergency departments and MSF on training and exercises for PPE use.
- Procedures shared among hospitals (but no direct meetings).

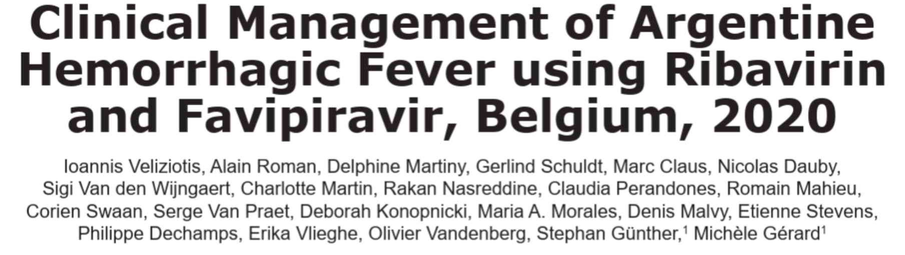
Resources:

- Flexible and responsive staff to meet requirements for the treatment of Ebola patients.
- PPE stock.

Microbiology lab

Samples processing in BLS3 lab
Communication with Hamburg Reference Lab for Haemorrhagic fever

Remerciements :



Clinical Management of Argentine Hemorrhagic Fever using Ribavirin and Favipiravir, Belgium, 2020

Ioannis Veliziotis, Alain Roman, Delphine Martiny, Gerlind Schuldt, Marc Claus, Nicolas Dauby, Sigi Van den Wijngaert, Charlotte Martin, Rakan Nasreddine, Claudia Perandones, Romain Mahieu, Corien Swaan, Serge Van Praet, Deborah Konopnicki, Maria A. Morales, Denis Malvy, Etienne Stevens, Philippe Dechamps, Erika Vlieghe, Olivier Vandenberg, Stephan Günther,[1] Michèle Gérard[1]

MERCI DE VOTRE ATTENTION