



Schweizerische Gesellschaft für Infektiologie
Swiss Society for Infectious Diseases
Société Suisse d'Infectiologie

SSI Award Ceremony 2024 for Outstanding Work in Clinical and Basic Science

The Swiss Society for Infectious Diseases (SSI) annual Awards

The SSI will award three prizes for outstanding scientific achievements in basic as well as in clinical research in infectious diseases, respectively. The first prize will be awarded with CHF 8'000.-, the second prize with 5'000.- and the third prize with 2'000.- in each category.

The Jury

- Sebastian Haubith (Aarau)
- Anna Conen (Aarau)
- Nina Khanna (Basel)
- Richard Köhl (Basel)
- Stephen Leib (Bern)
- Christine Turnheer (Bern)
- Dionysios Neofytos (Genève)
- Frédéric Tissot (Lausanne)
- Philipp Kohler (St. Gallen)
- Enos Bernasconi (Ticino)
- Frank Bally (Valais)
- Silvio Brugger (Zürich)



▲ Awards

▲ SSI

2015

2017

2018 **2**

▲ SSI_chairman

▷ 2018

▷ 2019

▷ 2020

▷ 2021

▷ 2021 _ TC -

▷ 2022

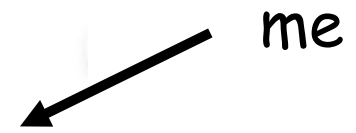
▷ 2023

▷ 2024





Awards 2025





Tom Loosli, PhD student,
Institute of Medical Virology
University of Zurich
Zurich

**2024 Award of the
Swiss Society for Infectious Diseases**

3rd Prize
Clinical Research in Infectious Diseases

Tom Loosli

**HIV-1 drug resistance in people on dolutegravir-based
antiretroviral therapy: a collaborative cohort analysis**

Authors:

Tom Loosli, Stefanie Hossmann, Suzanne M Ingle, Hajra Okhai,
Katharina Kusejko, Johannes Mouton, Pantxika Bellecave, Ard van Sighem,
Melanie Stecher, Antonella d'Arminio Monforte, M John Gill, Caroline A Sabin,
Gary Maartens, Huldrych F Günthard, Jonathan A C Sterne,
Richard Lessells, Matthias Egger, Roger D Kouyos

Published in Lancet HIV, October 10, 2023

HIV-1 drug resistance in people on dolutegravir-based antiretroviral therapy: a collaborative cohort analysis



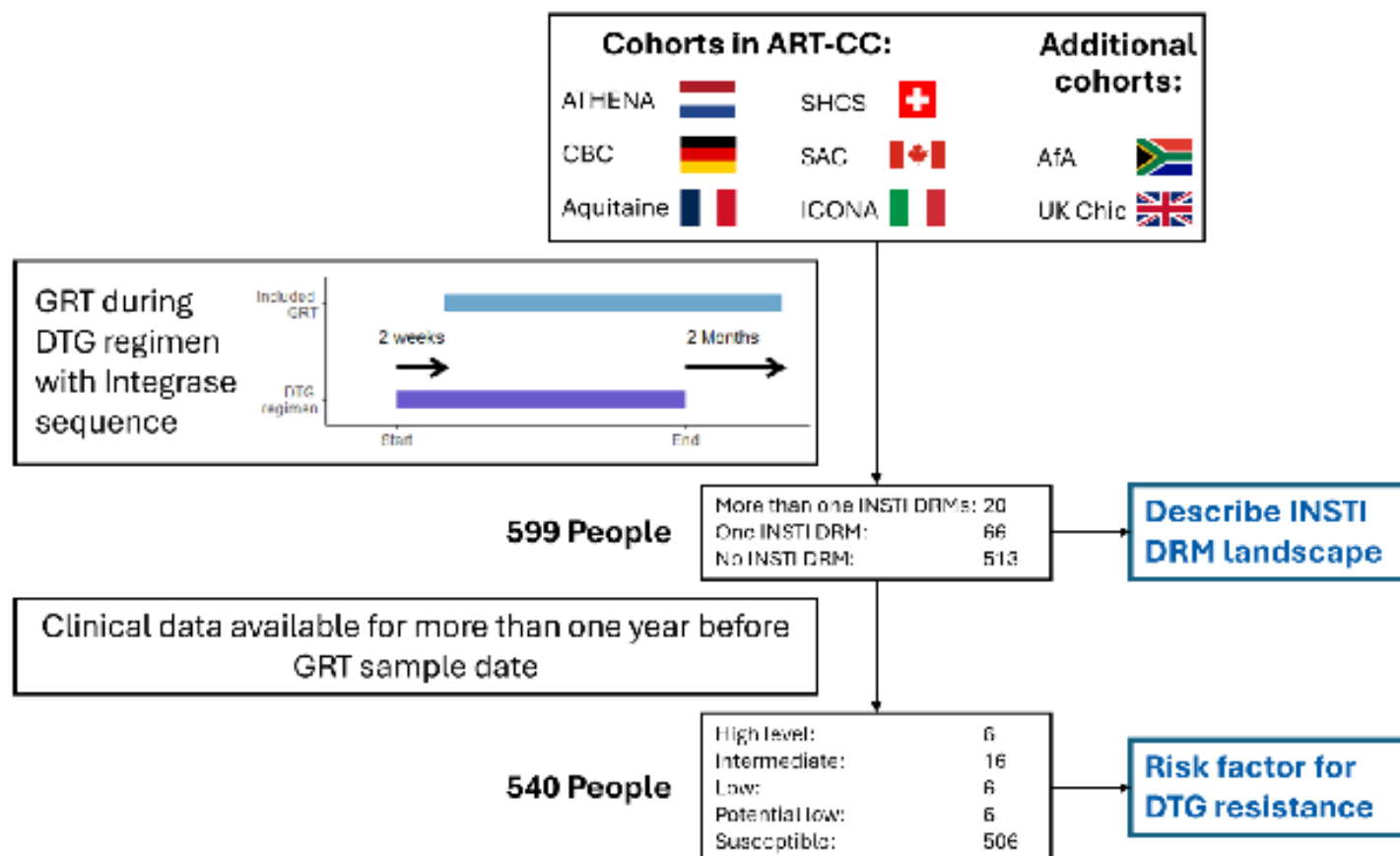
Tom Loosli, Stefanie Hossmann, Suzanne M Ingle, Hajra Okhai, Katharina Kusejko, Johannes Mouton, Pantxika Bellecave, Ard van Sighem, Melanie Stecher, Antonella d'Arminio Monforte, M John Gill, Caroline A Sabin, Gary Maartens, Huldrych F Günthard, Jonathan A C Sterne, Richard Lessells*, Matthias Egger*, Roger D Kouyos*

*Contributed equally

Study population and inclusion criteria

Study Aims

- Describe integrase strand transfer inhibitor (INSTI) **DRMs** in people experiencing virologic failure on a DTG regimen
- Identify **risk-factors** associated with DTG resistance in people experiencing virologic failure on a DTG regimen



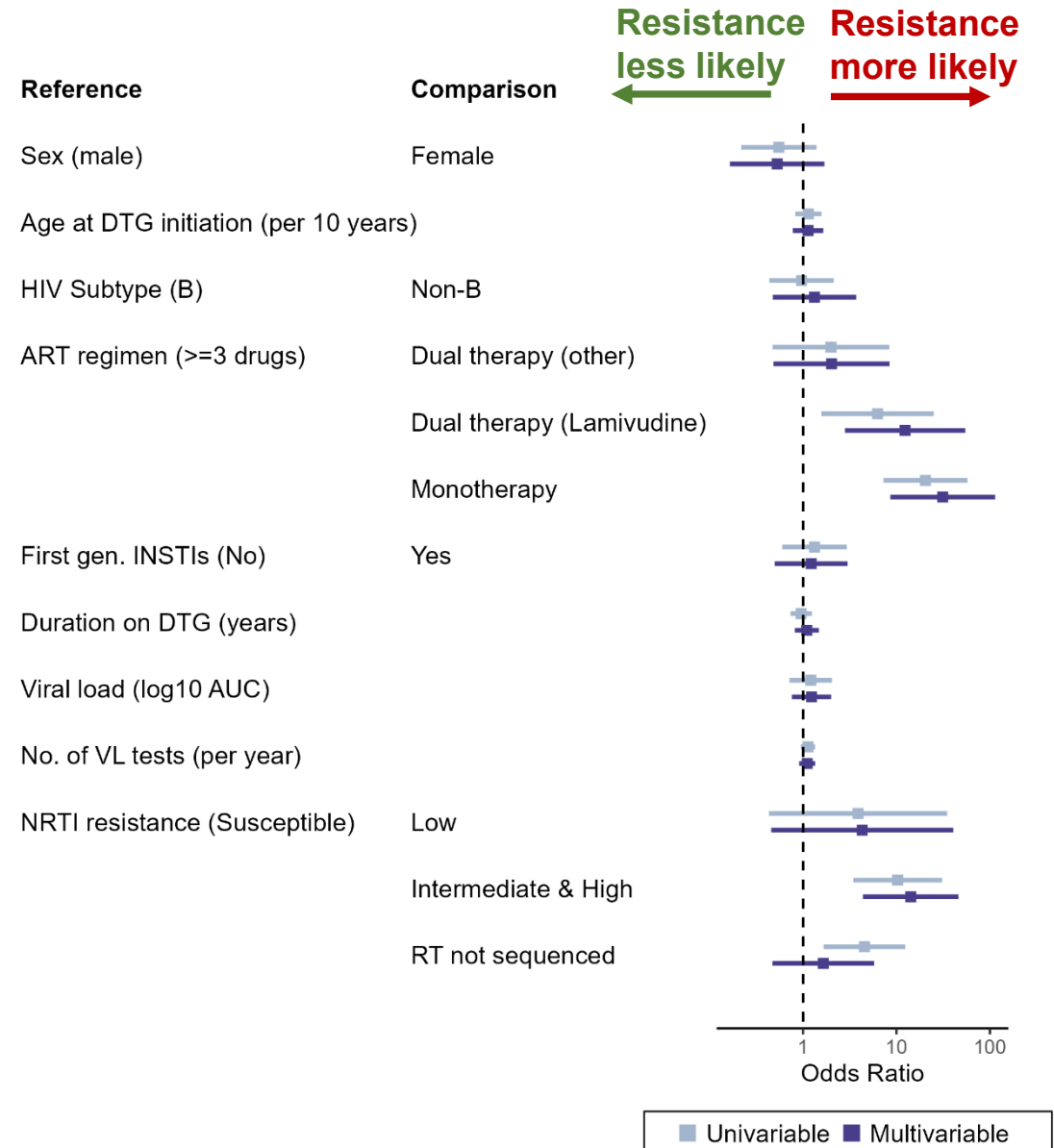
Risk factors associated with DTG resistance



- Effect of all INSTI DRMs can be inferred with the Stanford drug resistance algorithm.
- Model: Ordinal logistic regression for DTG resistance levels (susceptible, potentially low, low, intermediate, high). Random effect for cohorts.

Conclusion:

- ▶ **DTG resistance** is **currently rare** in people experiencing virologic failure on a DTG-based regimen.
- ▶ Main **Risk-factors** decrease the **generic barrier to resistance** of the DTG-based regimen.

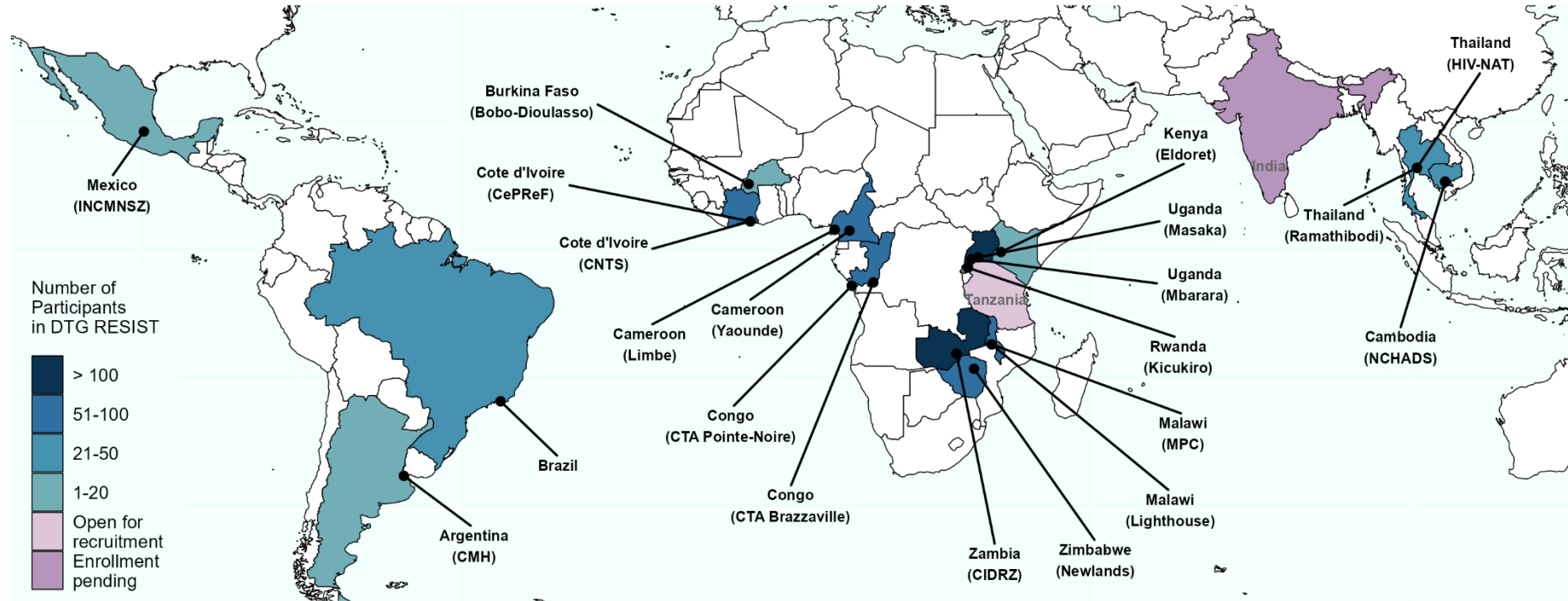


DTG Resist study in context



WHO report

Ongoing prospective study in Low- and Middle-income countries



Last updated on 26. August 2024

The world map is imported from the public domain Natural Earth project





Dr. Jennifer A. Brown, PhD
Department of Clinical Research
University of Basel
Basel

2024 Award of the Swiss Society for Infectious Diseases

2nd Prize

Clinical Research in Infectious Diseases

Jennifer Anne Brown

**Resistance-informed versus empirical management of viraemia
in children and adolescents with HIV in Lesotho and Tanzania
(GIVE MOVE trial): a multisite, open-label randomised controlled trial**

Authors:

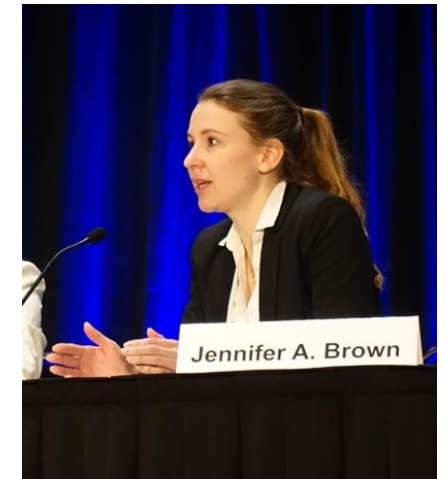
Jennifer Anne Brown, Isaac Kaumbuthu Ringera, Ezekiel Luoga, Moniek Bresser, Buoang Mothobi, Lorraine Kabundi, Mulume Ilunga, Kuena Mokhele, Andreas Boy Isaac, Ntsepiseng Tsoaeli, Thomas Mbaya, Brenda Simba, Kasasi Mayogu, Elizabeth Mabula, Molisana Cheleboi, Mamello Molatelle, Namvua Kimera, Getrud Joseph Mollel, David Sando, Nadine Tschumi, Alain Amstutz, Lineo Thahane, Mosa Molapo Hlasoa, Buntshi Paulin Kayembe, Josephine Muhairwe, Thomas Klimkait, Tracy Renée Glass, Maja Weisser, Niklaus Daniel Labhardt

Published in Journal: Lancet Global Health, August, 2024

Resistance-informed versus empirical management of viraemia in children and adolescents with HIV in Lesotho and Tanzania (GIVE MOVE trial): a multisite, open-label randomised controlled trial

Jennifer Anne Brown, Isaac Kaumbuthu Ringera, Ezekiel Luoga, Moniek Bresser, Buoang Mothobi, Lorraine Kabundi, Mulume Ilunga, Kuena Mokhele, Andreas Boy Isaac, Ntsepiseng Tsoaeli, Thomas Mbaya, Brenda Simba, Kasasi Mayogu, Elizabeth Mabula, Molisana Cheleboi, Mamello Molatelle, Namvua Kimera, Getrud Joseph Mollel, David Sando, Nadine Tschumi, Alain Amstutz, Lineo Thahane, Mosa Molapo Hlasoa, Buntshi Paulin Kayembe, Josephine Muhairwe, Thomas Klimkait, Tracy Renée Glass, Maja Weisser, Niklaus Daniel Labhardt

Lancet Glob Health. 2024 Aug;12(8):e1312-e1322.



Prize winner: Dr. Jennifer A Brown

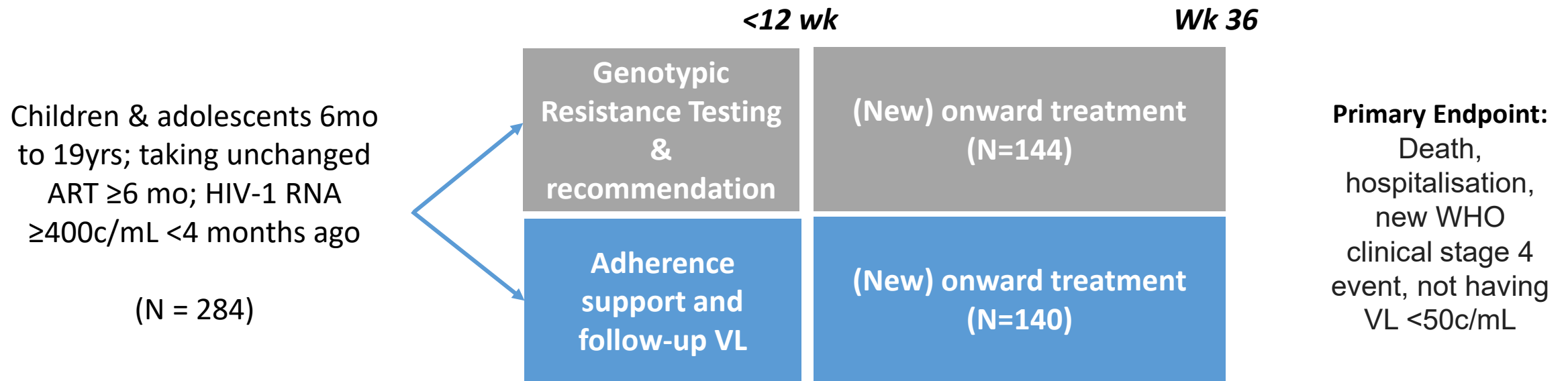
Does availability of resistance testing improve management and outcomes among children & adolescents with HIV viraemia while taking ART?

Research gaps

Areas that would benefit from further research include how low-level viraemia relates to the development of drug resistance mutations to DTG and other optimized ARV drugs and whether low-level viraemia is clinically relevant for people living with HIV receiving DTG-based regimens. Considering the very low levels of drug resistance, the role of drug resistance testing is unclear in a treatment failure algorithm for people living with HIV receiving DTG-based treatment to minimize unnecessary switches from this regimen. Additional data for children and adolescents would support optimized treatment monitoring in these populations for which drug resistance is a critical issue. Finally, there is limited evidence to determine the ideal treatment monitoring algorithm for pregnant and breastfeeding women receiving ART.

GIVE MOVE trial design

Multicenter, randomized, controlled, open-label, superiority trial in Tanzania & Lesotho



GIVE MOVE trial results

Analysis and endpoint	Usual care arm	GRT arm	Risk difference (95% CI)
Primary endpoint (mITT)*	73/140 (52.1%)	67/144 (46.5%)	-0.06 (-0.17-0.06)
Viral load ≥ 50 c/mL (among those with a result at 36 weeks)	66/133 (49.6%)	61/138 (44.2%)	-0.05 (-0.16-0.07)

* weeks) /ART-related hospitalisation, WHO stage 4 event, viral load ≥ 50 copies/mL at 36 weeks

- Resistance testing and expert recommendation alone do not significantly improve clinical & virological outcomes among children & adolescents with HIV viraemia while taking ART
- Main driver of ongoing viraemia: poor adherence





Dr. Philipp Jent
Universitätsklinik für Infektiologie
Inselspital Bern

**2024 Award of the
Swiss Society for Infectious Diseases**

1st Prize
Clinical Research in Infectious Diseases

Philipp Jent

**Povidone Iodine vs Chlorhexidine Gluconate in
Alcohol for Preoperative Skin Antisepsis
A Randomized Clinical Trial**

Authors:

Andreas F. Widmer, Andrew Atkinson, Stefan P. Kuster, Aline Wolfensberger, Steffi Klimke,
Rami Sommerstein, Friedrich S. Eckstein, Florian Schoenhoff, Guido Beldi,
Christian A. Gutschow, Jonas Marschall, Alexander Schweiger, Philipp Jent

Published in JAMA, June 17, 2024

JAMA | **Original Investigation**

Povidone Iodine vs Chlorhexidine Gluconate in Alcohol for Preoperative Skin Antisepsis A Randomized Clinical Trial

Andreas F. Widmer, MD, MS; Andrew Atkinson, PhD; Stefan P. Kuster, MD; Aline Wolfensberger, MD;
Steffi Klimke, RN; Rami Sommerstein, MD; Friedrich S. Eckstein, MD; Florian Schoenhoff, MD; Guido Beldi, MD;
Christian A. Gutschow, MD; Jonas Marschall, MD; Alexander Schweiger, MD; Philipp Jent, MD

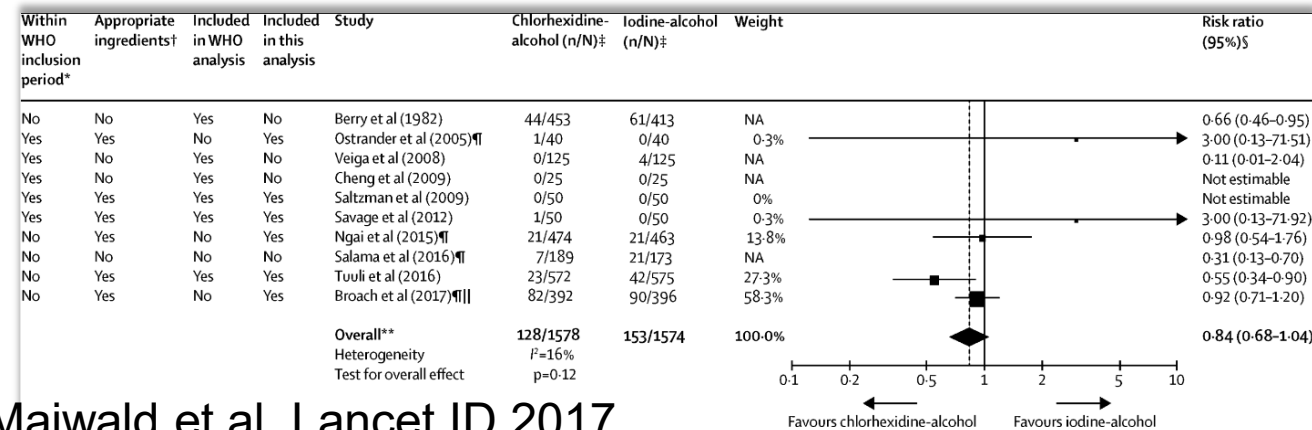
JAMA.2024;332(7):541-549.
Doi: 10.1001/jama.2024.8531

Contact: philipp.jent@insel.ch
Twitter/X: @phips81

Background

2016: WHO SSI guideline favours chlorhexidine gluconate over povidone iodine for preoperative skin antisepsis, based on meta-analysis – debated:

- Included studies considered to be low quality
- 1 study with low alcohol content (23%)
- 2 studies with unknown alcohol content
- 2 studies with just one SSI each



Maiwald et al. Lancet ID 2017

Research gaps

GDG members highlighted that the use of alcohol-based solutions in surgical site skin preparation per se is no longer a research topic. There is a need for well-designed RCTs comparing specific preparations containing CHG, PVP-I and other antiseptics in alcohol-based and other solutions, taking into consideration their effectiveness, toxicity and costs.

QUESTION Is preoperative skin antisepsis with povidone iodine in alcohol noninferior to chlorhexidine gluconate in alcohol in preventing surgical site infections following cardiac or abdominal surgery?

CONCLUSION Povidone iodine in alcohol was noninferior to chlorhexidine gluconate in alcohol as preoperative skin antisepsis in preventing surgical site infections following cardiac or abdominal surgery.

POPULATION

2214 Men
1107 Women



Adults with scheduled elective abdominal or cardiac surgery

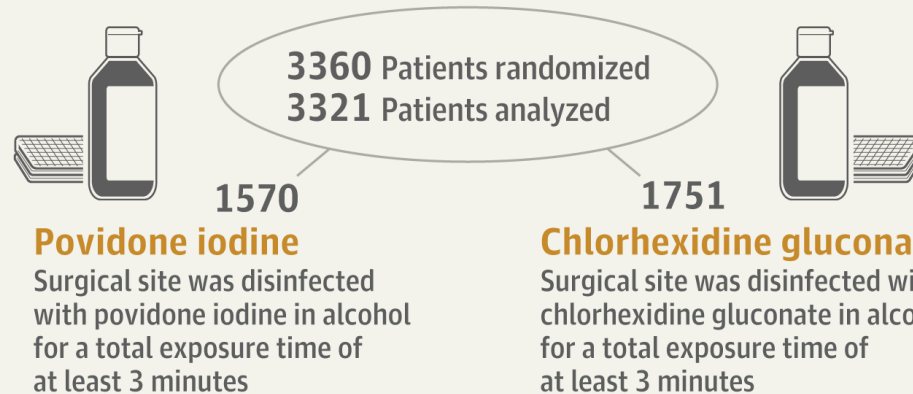
Mean age: 65 years

LOCATION

3
Tertiary care hospitals in Switzerland



INTERVENTION



PRIMARY OUTCOME

Surgical site infection within 30 days after abdominal surgery and within 1 year after cardiac surgery (noninferiority margin of 2.5%)

FINDINGS

Patients with surgical site infections

Povidone iodine

5.1%
(80 of 1570 patients)

Chlorhexidine gluconate

5.5%
(97 of 1751 patients)

Povidone iodine was noninferior to chlorhexidine gluconate, both in alcohol:

Between-group difference, **0.4%**
(95% CI, -1.1% to 2.0%)

© AMA



Dr. Benjamin Meyer,
Département de Pathologie et d'Immunologie
Centre Médical Universitaire
Genève

**2024 Award of the
Swiss Society for Infectious Diseases**

3rd Prize

Basic Research in Infectious Diseases

Benjamin Meyer

**SARS-CoV-2 convalescence and hybrid
immunity elicits mucosal immune responses**

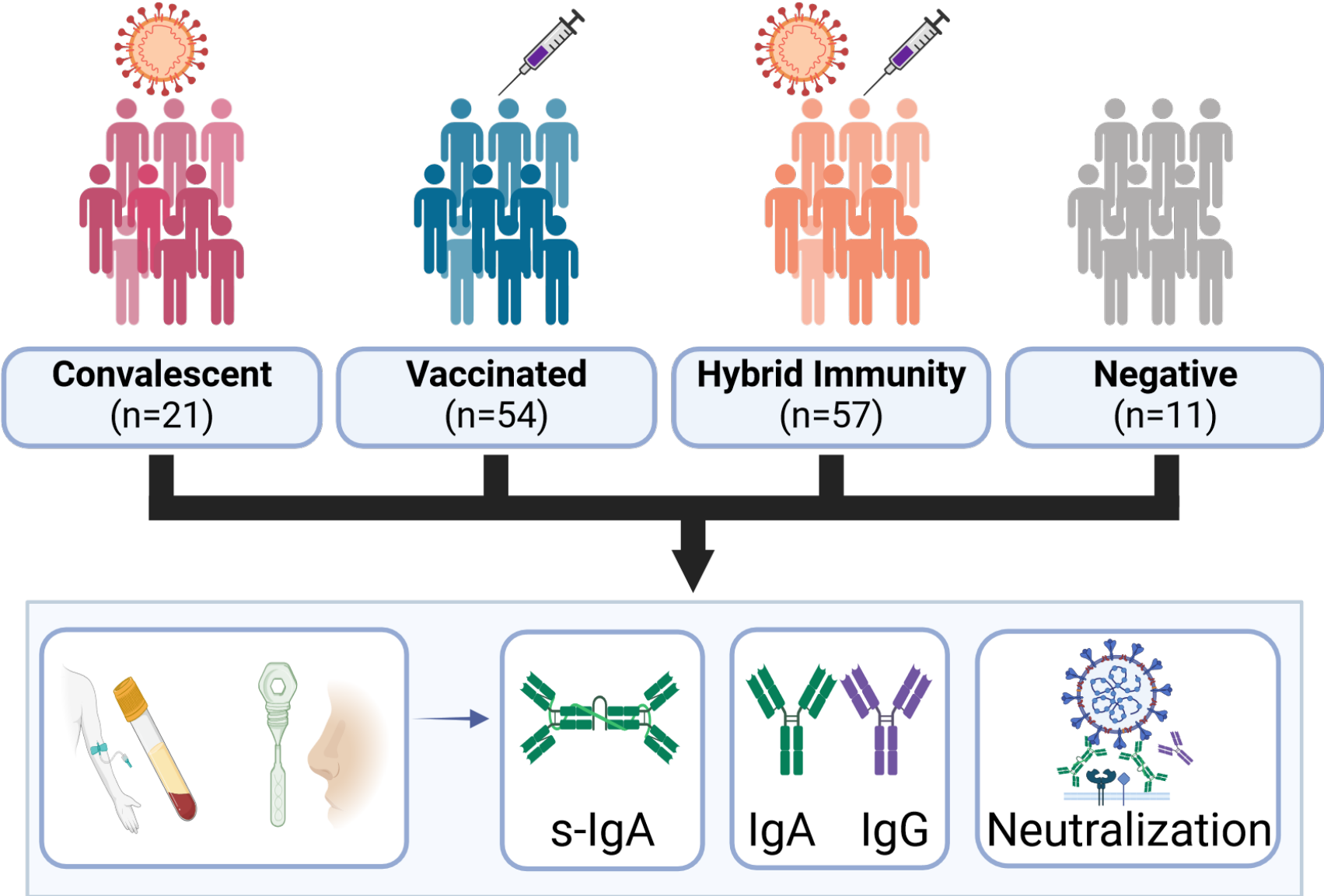
Authors:

Olha Puhach, Mathilde Bellon, Kenneth Adea, Meriem Bekliz, Krisztina Hosszu-Fellous,
Pascale Sattouet, Nicolas Hulo, Laurent Kaiser, Isabella Eckerle, Benjamin Meyer

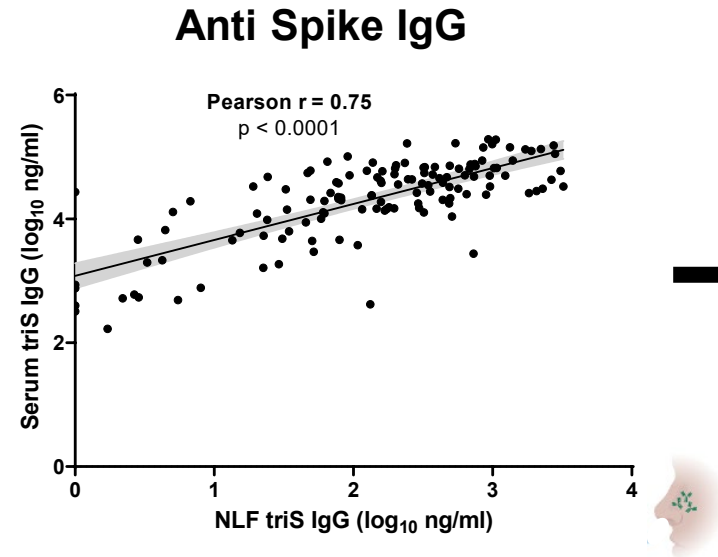
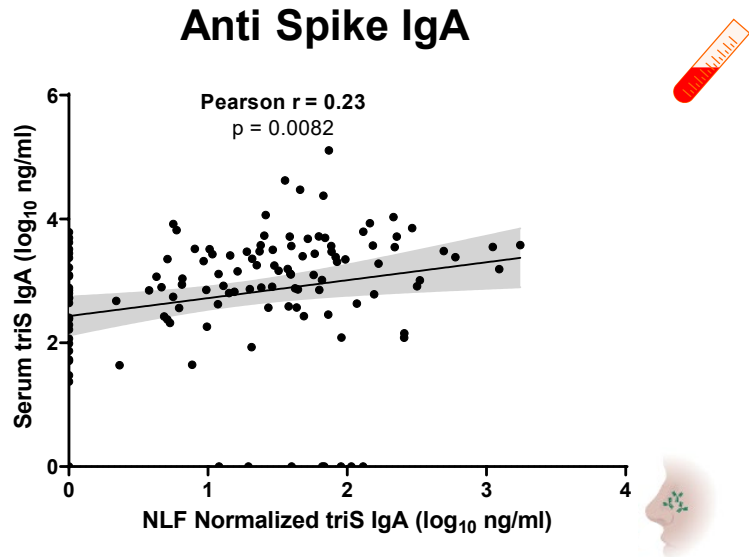
Published in eBioMedicine, November 29, 2023

SARS-CoV-2: Mucosal Antibody response

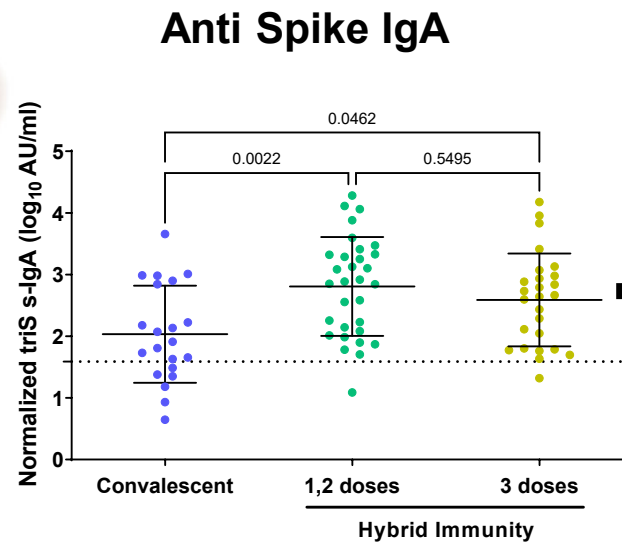
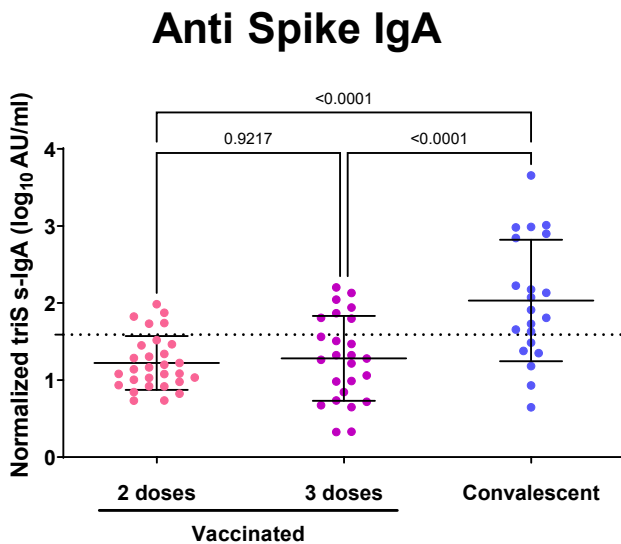
Study cohort



Only SARS-CoV-2 infection induces mucosal sIgA response



Only IgA is mainly locally produced

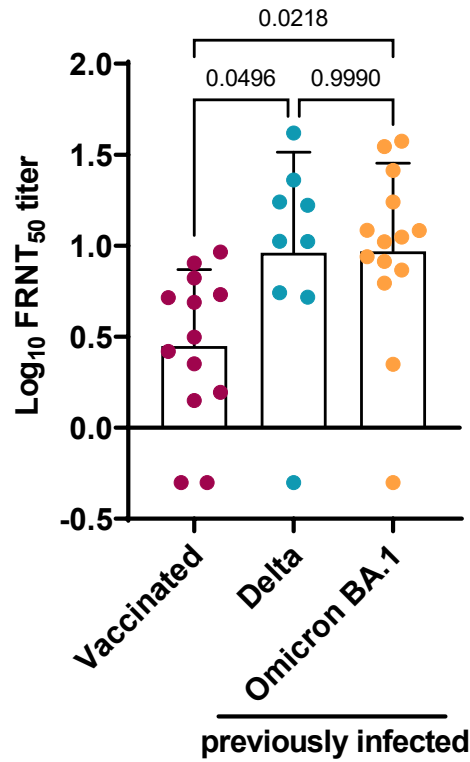


SARS-CoV-2 infection induces secretory IgA

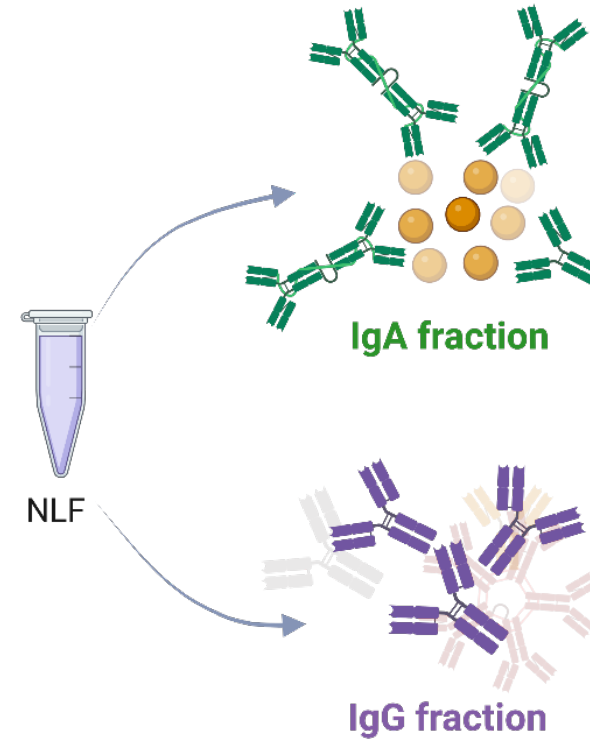
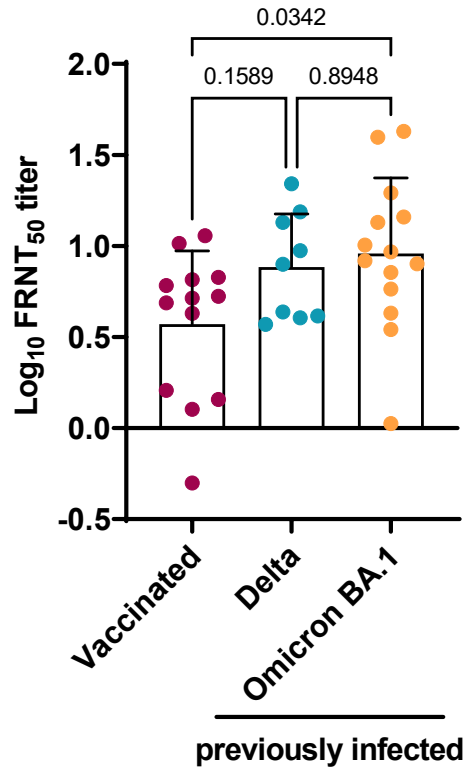
SIgA mediates SARS-CoV-2 neutralization at the nasal mucosa



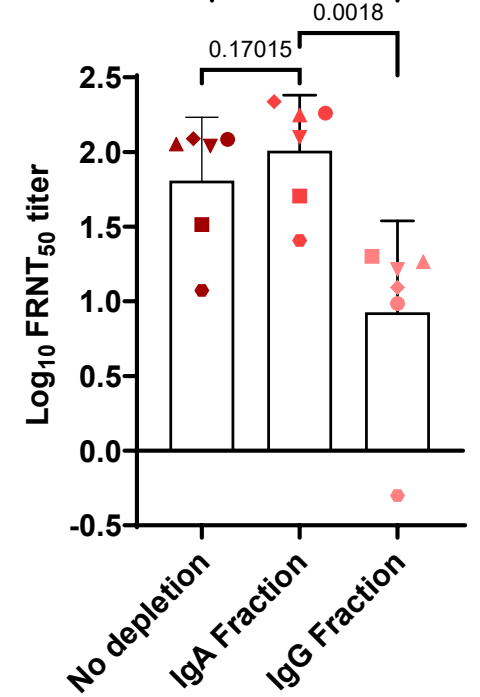
NLF Neutralization Ancestral



NLF Neutralization Omicron BA.5



NLF Neutralization Ancestral



Olha Puhach

Centre of Vaccinology

Centre of Emerging Viral diseases



Swiss National Science Foundation



Covid-19 National Research Programme



Dr. Lisandra Aguilar Bultet
Departement Biomedizin
University of Basel

**2024 Award of the
Swiss Society for Infectious Diseases**

2nd Prize

Basic Research in Infectious Diseases

Lisandra Aguilar-Bultet

**Within-host genetic diversity of extended-spectrum
beta-lactamase-producing Enterobacterales in
long-term colonized patients**

Authors:

Lisandra Aguilar-Bultet, Ana B. García-Martín, Isabelle Vock,
Laura Maurer Pekerman, Rahel Stadler, Ruth Schindler, Manuel Battegay,
Tanja Stadler, Elena Gómez-Sanz & Sarah Tschudin-Sutter

Published in nature communications, December 2023



Article




<https://doi.org/10.1038/s41467-023-44285-w>

Within-host genetic diversity of extended-spectrum beta-lactamase-producing Enterobacterales in long-term colonized patients

Received: 3 April 2023

Accepted: 7 December 2023

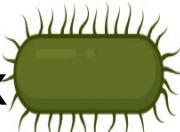
Published online: 21 December 2023

Lisandra Aguilar-Bultet^{1,2}, Ana B. García-Martín ^{1,2}, Isabelle Vock^{1,2},
Laura Maurer Pekerman^{1,2}, Rahel Stadler^{1,2}, Ruth Schindler^{1,2}, Manuel Battegay^{1,2},
Tanja Stadler ^{3,4}, Elena Gómez-Sanz^{1,2} & Sarah Tschudin-Sutter ^{1,2} ✉



Goal: To investigate long-term genetic diversity of ESBL-Enterobacterales in individual patients over time (up to 10 years).

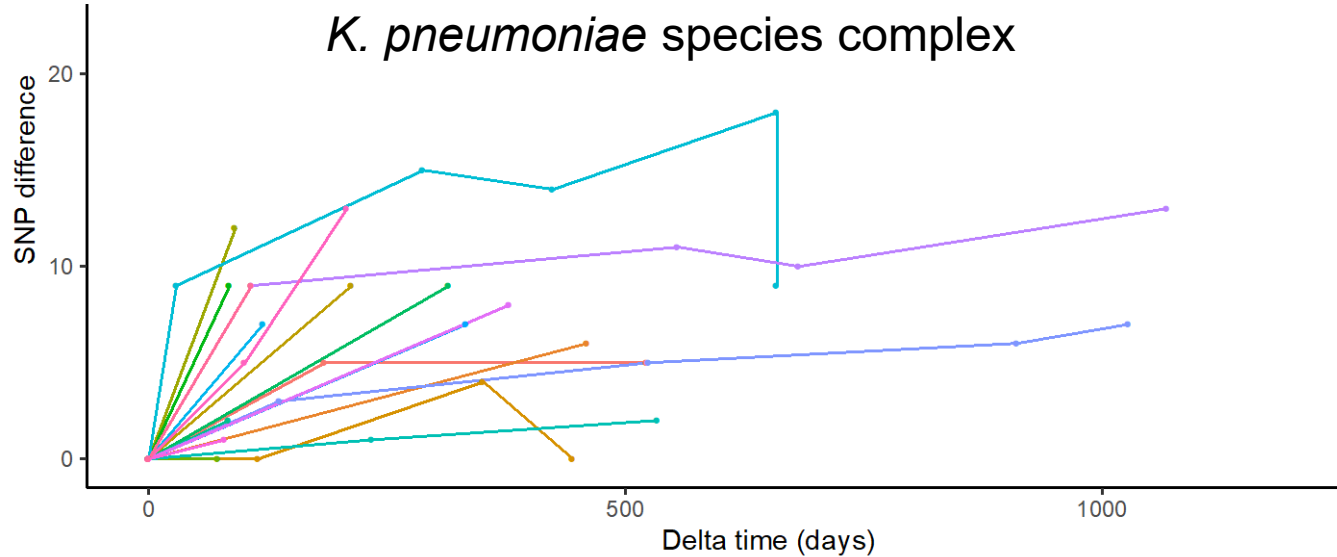
Methods: ESBL-*Klebsiella pneumoniae* species complex:

19 x  and 76 x 

ESBL-*Escherichia coli*: 61 x  and 284 x 

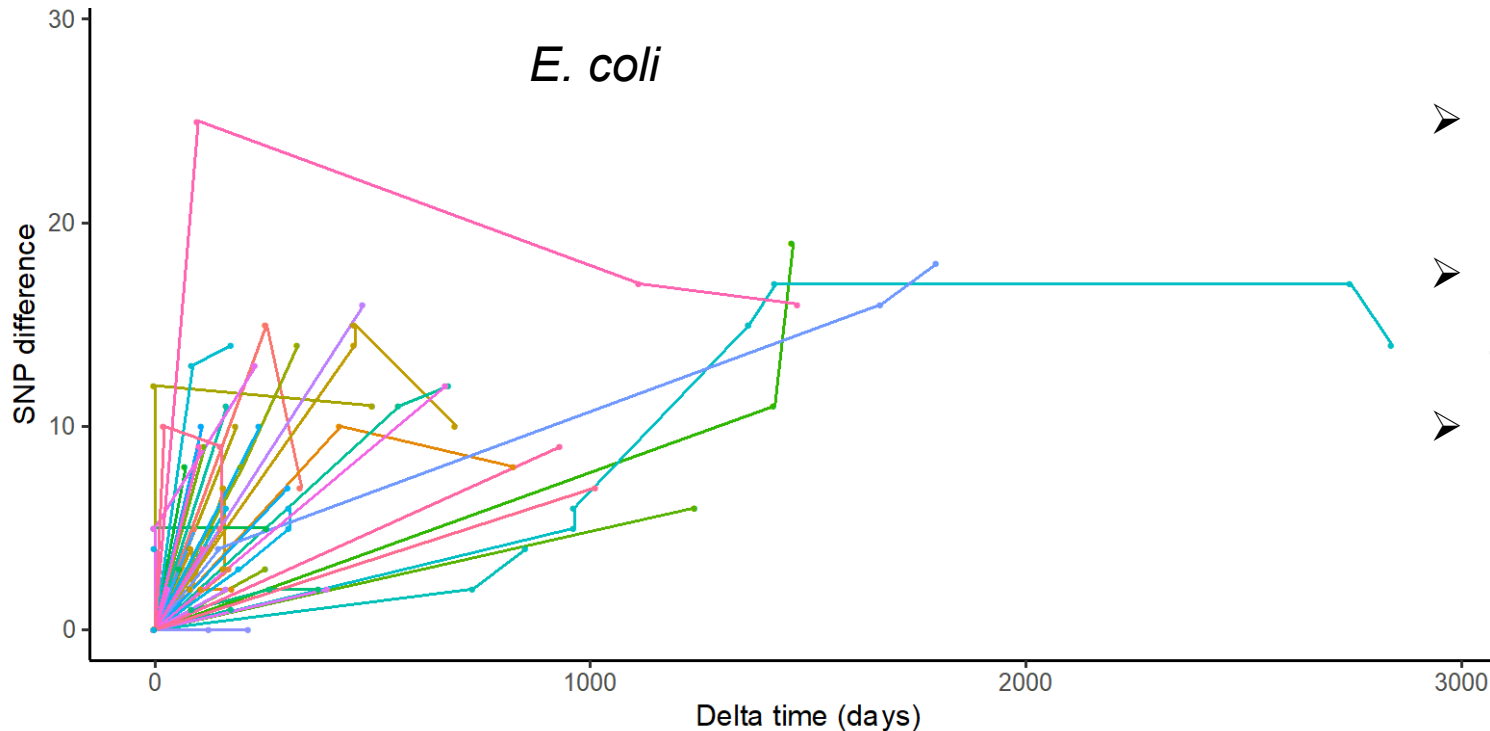
ESBL isolates per patient over time

K. pneumoniae species complex

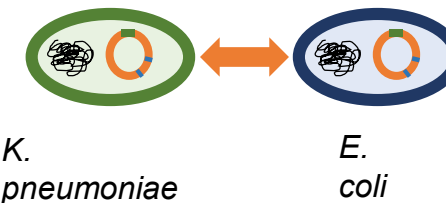


- Median strain persistence: 7.6 months (range 2.4 – 56.7)
- Median SNP differences in same strain: 7 (IQR 4.3 – 9.0)
- ESBL- plasmid persistence: in 85% of the patients

E. coli



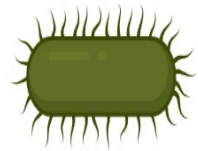
- Median strain persistence: 11 months (range 1 – 112.7)
- Median SNP differences in same strain: 7 (IQR 4.0 – 12.0)
- ESBL- plasmid persistence: in >86% of the patients



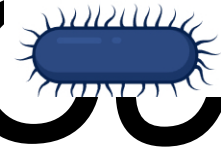
ESBL-plasmid shared in 28.7% of patients with both species

Conclusions

- The diversity of ESBL-*K. pneumoniae* species complex and *E. coli* within patients is low and patients may remain colonized with the same strain for up to 5 or 9 years, depending on the species.
- ESBL-plasmids are shared between isolates regardless of chromosomal relatedness.
- Patients could be durable reservoirs for ongoing transmission of ESBLs and their long colonization could increase their risk of recurrent infections.



THANK YOU





Dr. Stéphanie Bibert
Service des maladies infectieuses
CHUV
Lausanne

**2024 Award of the
Swiss Society for Infectious Diseases**

1st Prize

Basic Research in Infectious Diseases

Stéphanie Bibert

**Herpes simplex encephalitis due to a
mutation in an E3 ubiquitin ligase**

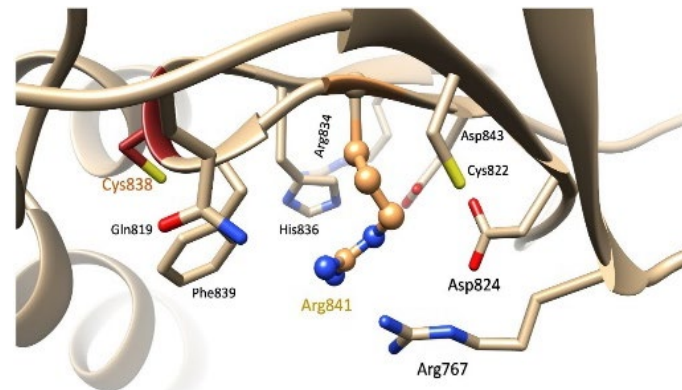
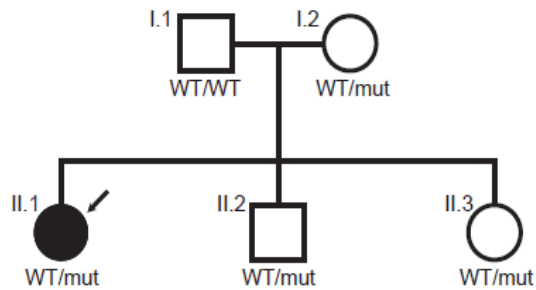
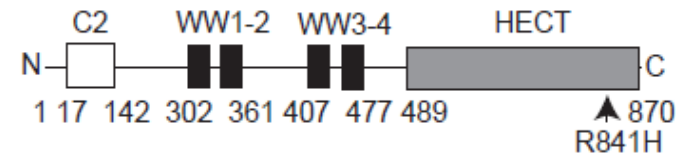
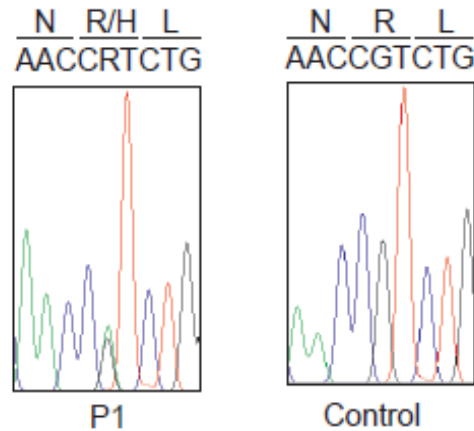
Authors:

Stéphanie Bibert, Mathieu Quinodoz, Sylvain Perriot, Fanny S. Krebs, Maxime Jan,
Rita C. Malta, Emilie Collinet, Mathieu Canales, Amandine Mathias,
Nicole Fagnart, Eliane Roulet-Perez, Pascal Meylan, René Brouillet, Onya Opota,
Leyder Lozano-Calderon, Florence Fellmann, Nicolas Guex, Vincent Zoete,
Sandra Asner, Carlo Rivolta, Renaud Du Pasquier & Pierre-Yves Bochud

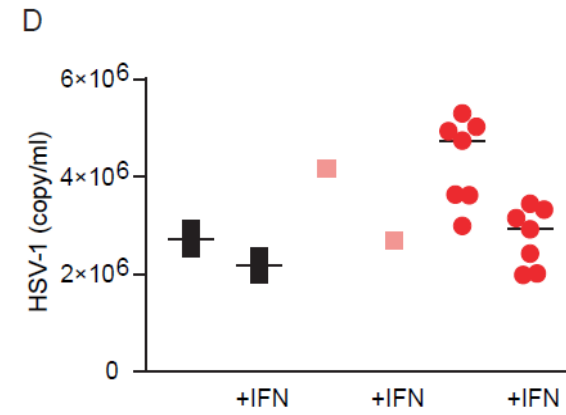
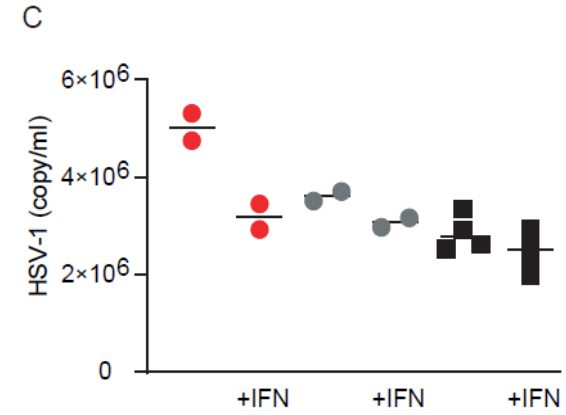
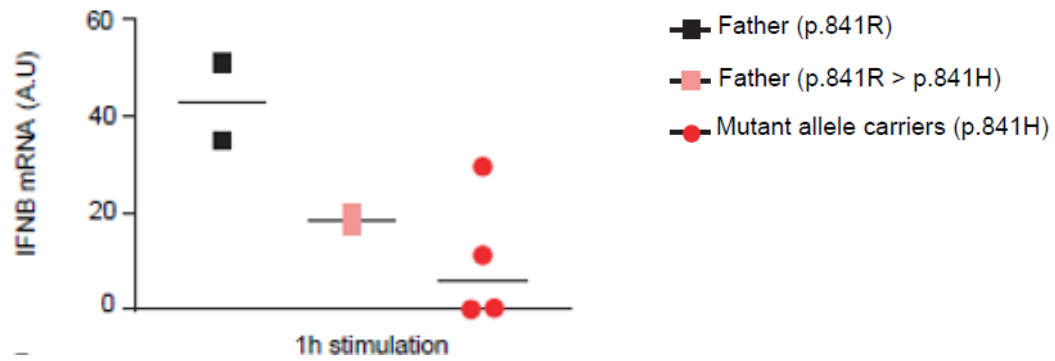
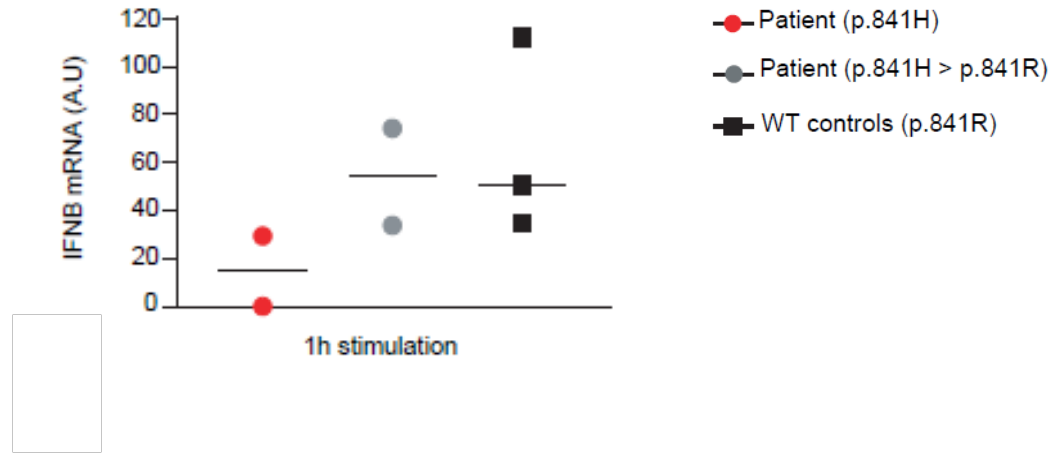
Published in nature communications, May 2024

WW domain containing E3 ubiquitin protein ligase 2 (WWP2) R841H, NM_007014.4:c.2522G>A (heterozygous)

- very rare (MAF=1.2 x 10⁻⁵)
- predicted major impact on protein structure



Rescue of antiviral immunity in iPSCs-derived neurons



Conclusion

- Novel heterozygous missense *WWP2* variant associated with HSE
- Impaired TLR3-IFN signaling with enhanced susceptibility to HSV-1 infection
- CRISPR-Cas9 technology
 - mutant-> WT: rescue of IFN-mediated immune function in the patient
 - WT > mutant: decrease of IFN-mediated immune function in WT individual
- Gain of function mutation in a protein that is not directly involved in this pathway, but rather contribute to its regulation

*Fondation
Santos Suarez*



FONDS NATIONAL SUISSE
DE LA RECHERCHE SCIENTIFIQUE



FONDATION
LEENAARDS

Group photo of the award winners

THANK YOU

