WEBINAIR 15/04/2024

Candida auris

Epidémiologie, clinique et thérapeutique

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Déclaration de liens d'intérêt avec les industries de santé en rapport avec le thème de la présentation (loi du 04/03/2002) :

Date :

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Consultant ou membre d'un conseil scientifique	☐ OUI	☑ NON
Conférencier ou auteur/rédacteur rémunéré d'articles ou documents	☐ OUI	☑ NON
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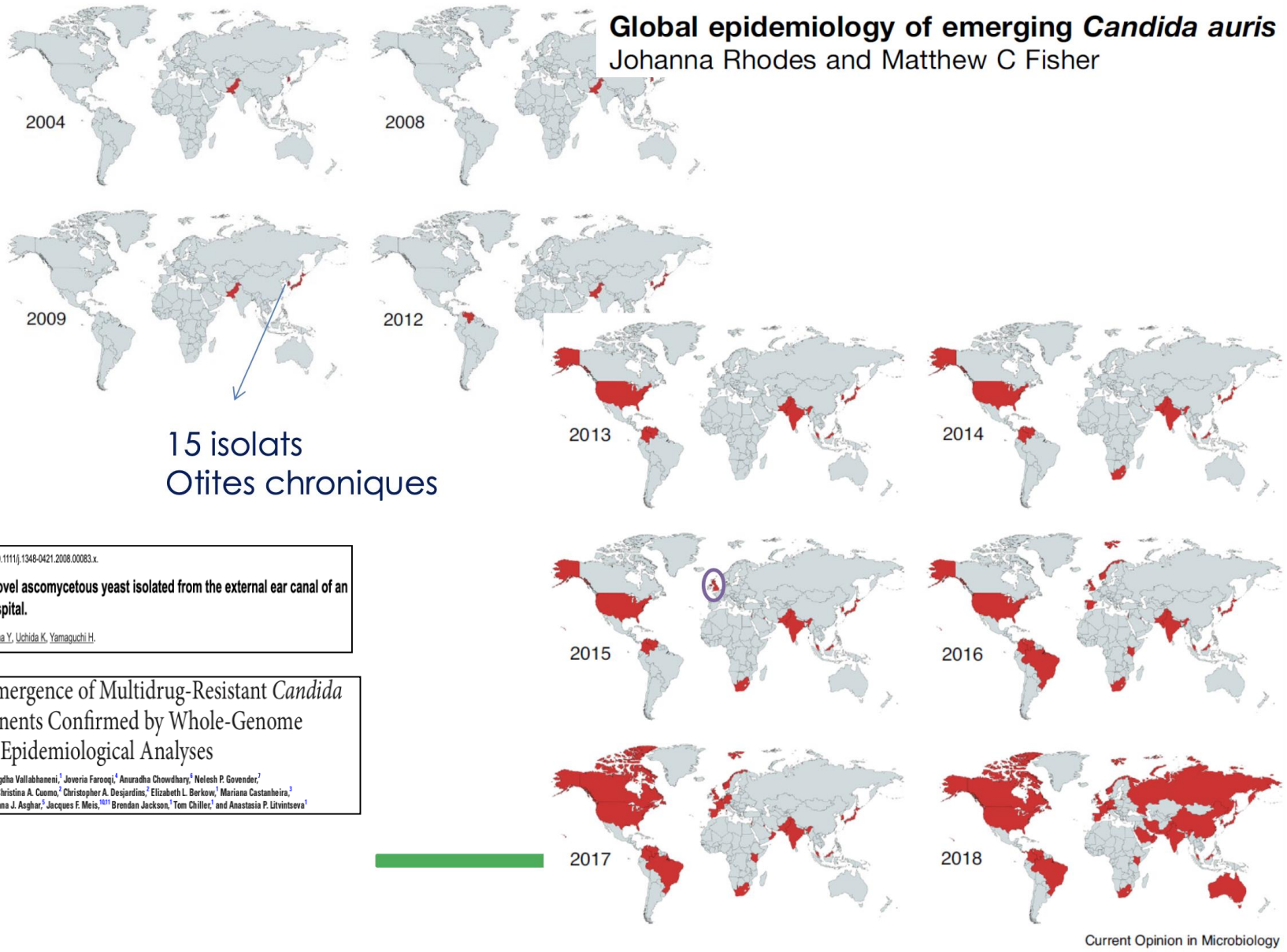
Epidémiologie



On the Emergence of *Candida auris*: Climate Change, Azoles, Swamps, and Birds

Arturo Casadevall,[a] Dimitrios P. Kontoyiannis,[b] Vincent Robert[c]

On the Origins of a Species: What Might Explain the Rise of *Candida auris*?

Brendan R. Jackson [1,*], Nancy Chow [1], Kaitlin Forsberg [1,2], Anastasia P. Litvintseva [1], Shawn R. Lockhart [1], Rory Welsh [1], Snigdha Vallabhaneni [3] and Tom Chiller [1]

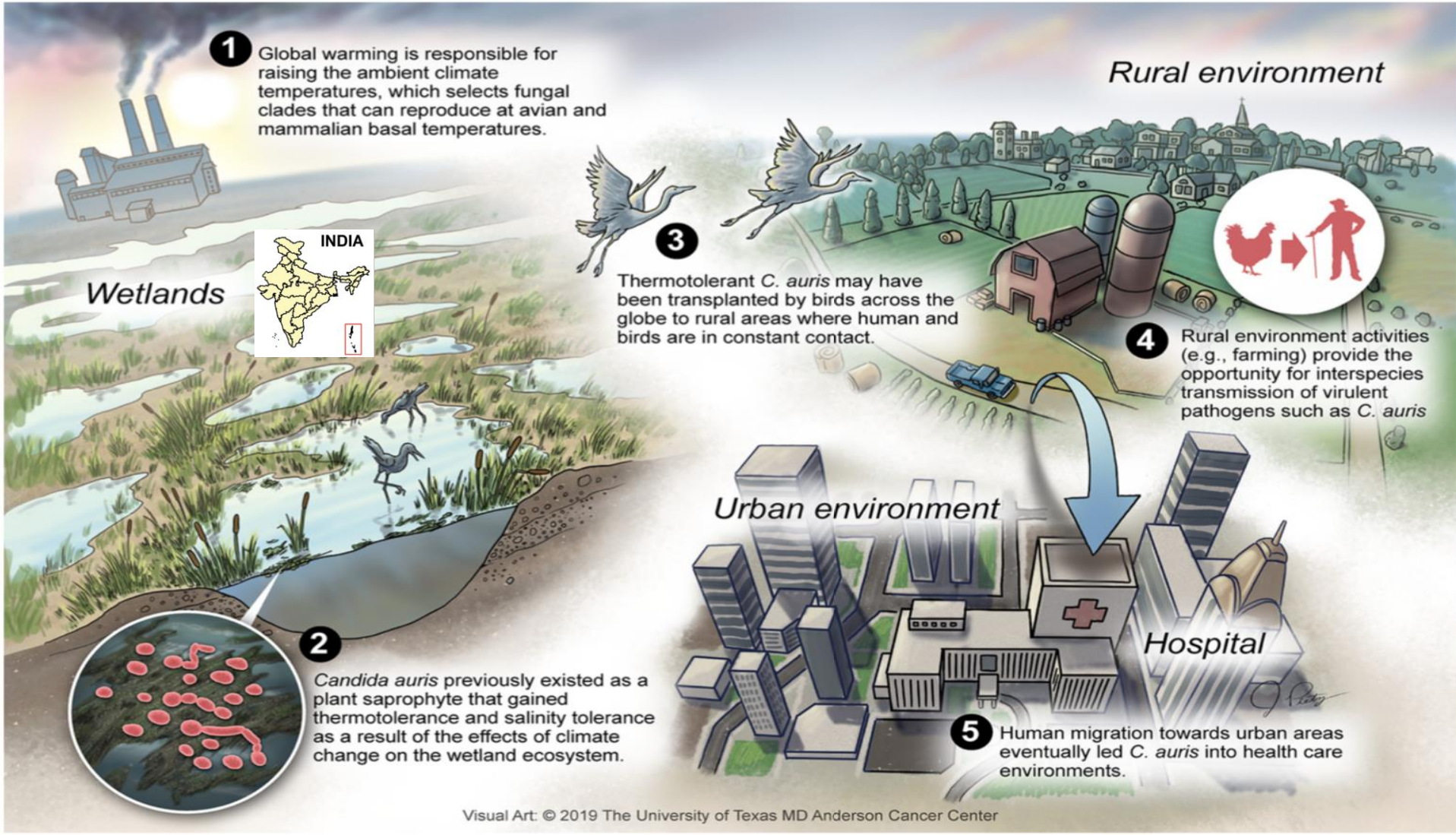


FIG 2 Proposed scheme for the emergence of *C. auris*.

Epidémiologie

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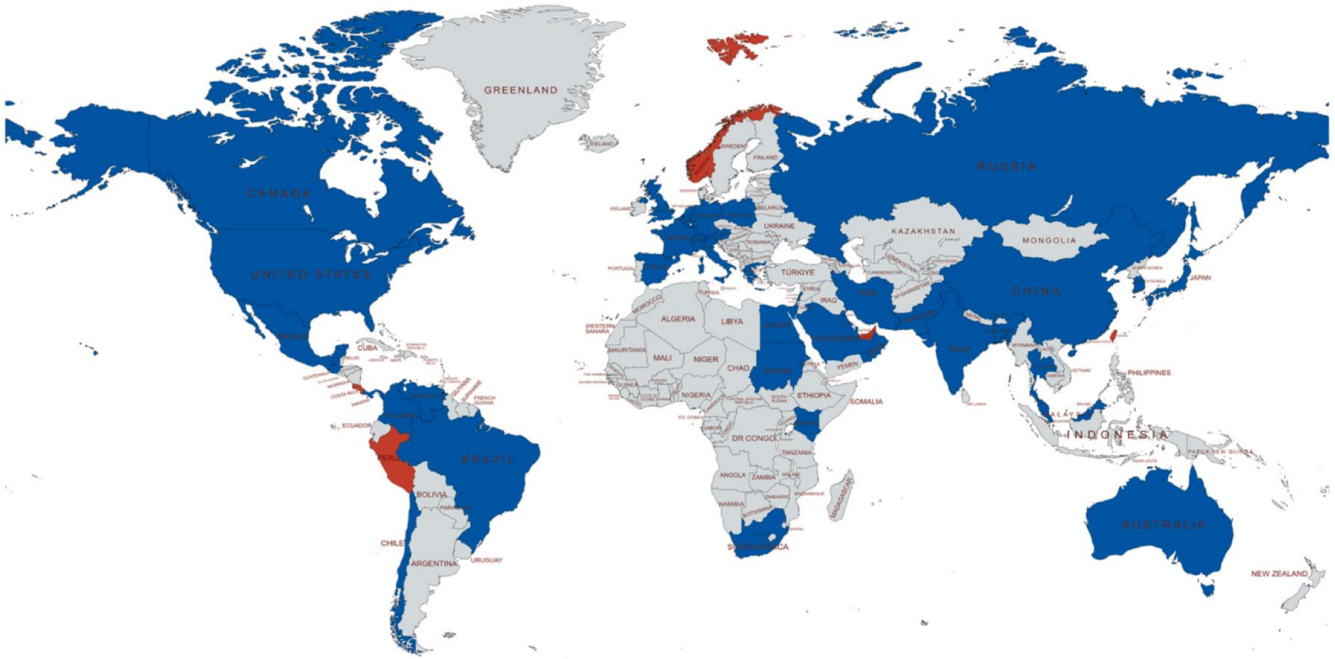
Candida auris: A bibliometric analysis of an emerging global health threat

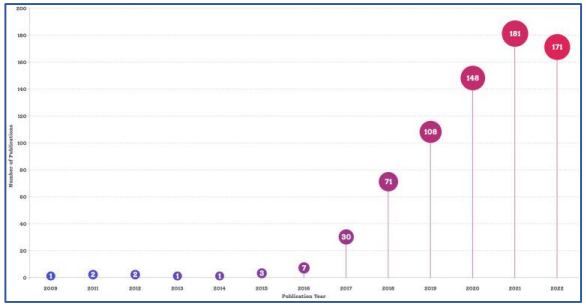
Paolo Ragusa

2023

6 clades

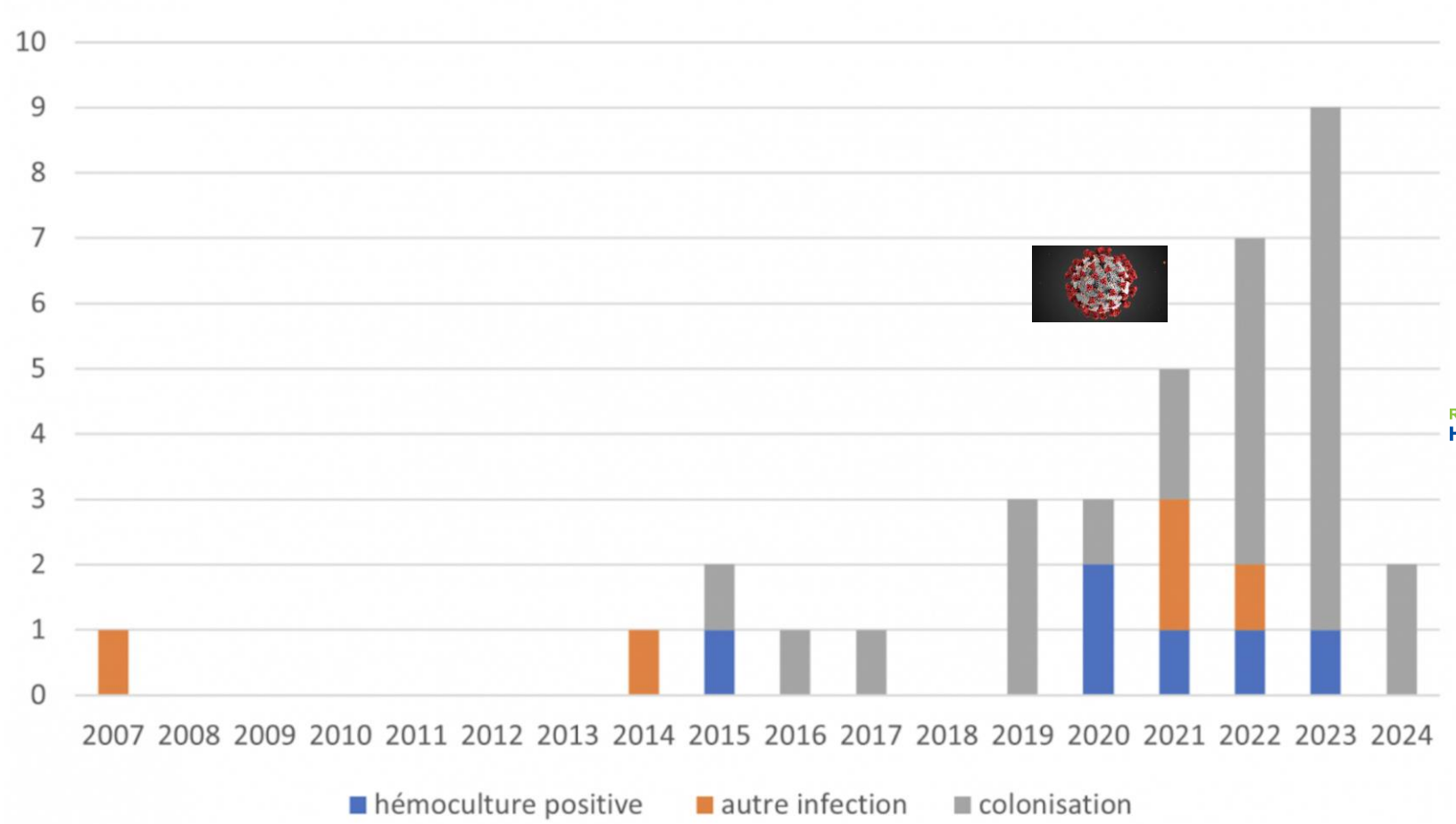


Index Pubmed



Epidémiologie

Données CNR actualisées le 01/02/2024



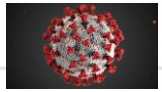
2

Région
Hauts-de-France

Epidémiologie

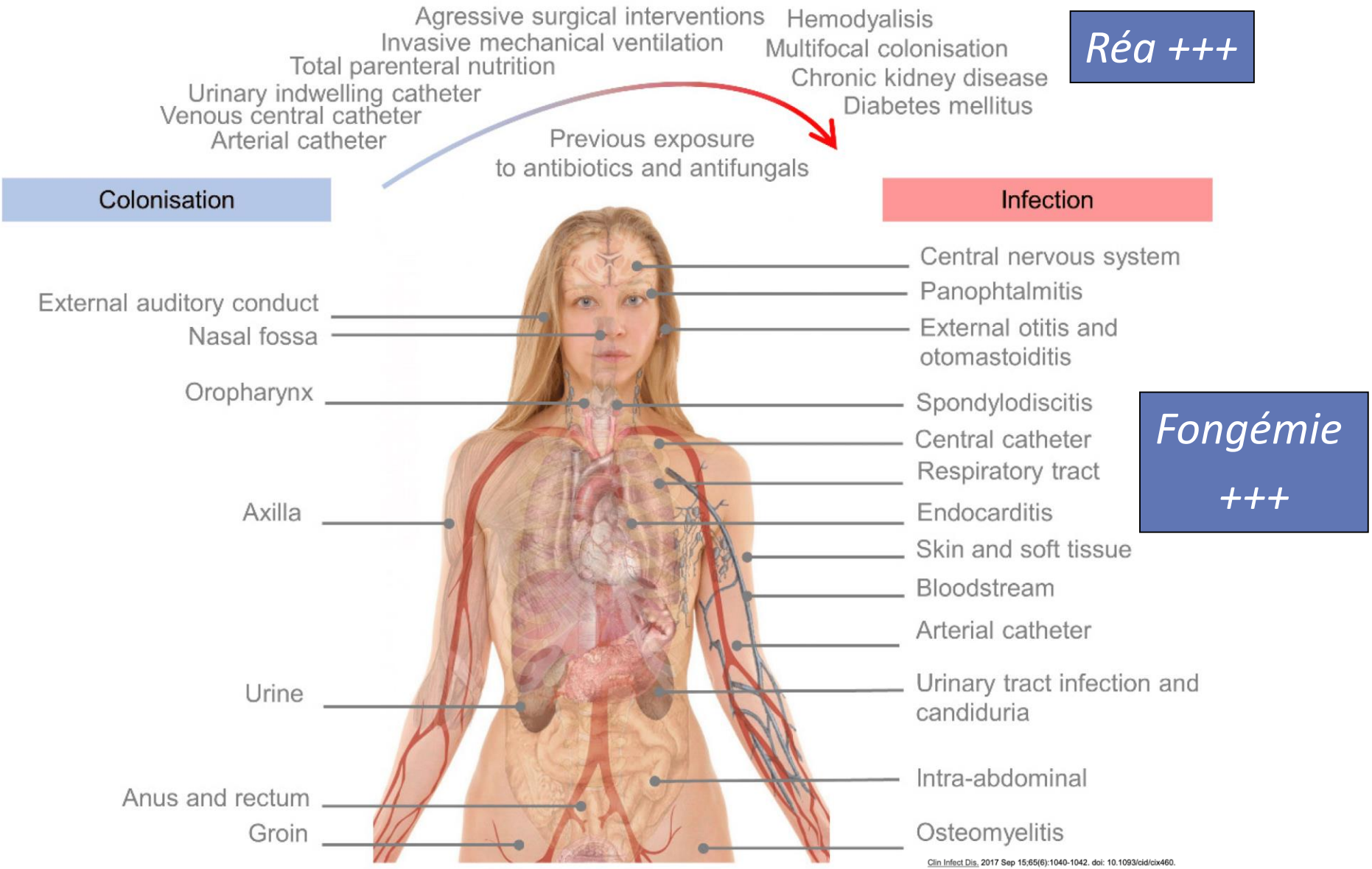
Données CNR actualisées le 01/02/2024

français **(Figure 1)**. Parmi tous les patients détectés, la grande majorité avaient séjourné dans différents pays d'endémicité connue (Inde, Pakistan, Dubaï, Koweït, Madagascar, Kenya, Russie, Niger, Espagne, Égypte).



Région Hauts-de-France

Clinique



Réa +++

Fongémie +++

Garcia Bustos Microorg 2021

Clin Infect Dis. 2017 Sep 15;65(6):1040-1042. doi: 10.1093/cid/cix460.

Donor-Derived Transmission of Candida auris During Lung Transplantation.

Azar MM[1,2], Turbett SE[3,4], Fishman JA[3,4], Pierce VM[1,2,5].

Clinique

An outbreak due to *Candida auris* with prolonged colonisation and candidaemia in a tertiary care European hospital

Espagne. Valencia

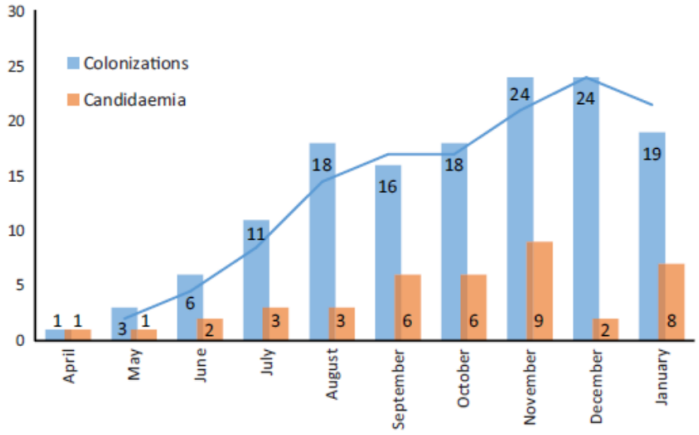


FIGURE 1 Epidemic curve of candidaemia episodes (n = 41) and new colonised patients (n = 140) by *Candida auris* from April 2016 to January 2017

140 colonisations
42 candidémies
Mortalité 41%
Epidémie maîtrisée début 2019

Ruiz-Gaitan A, et al.
An outbreak due to *Candida auris* with prolonged colonisation and candidaemia in a tertiary care European hospital. *Mycoses*. 2018;61:498–505

Clinique

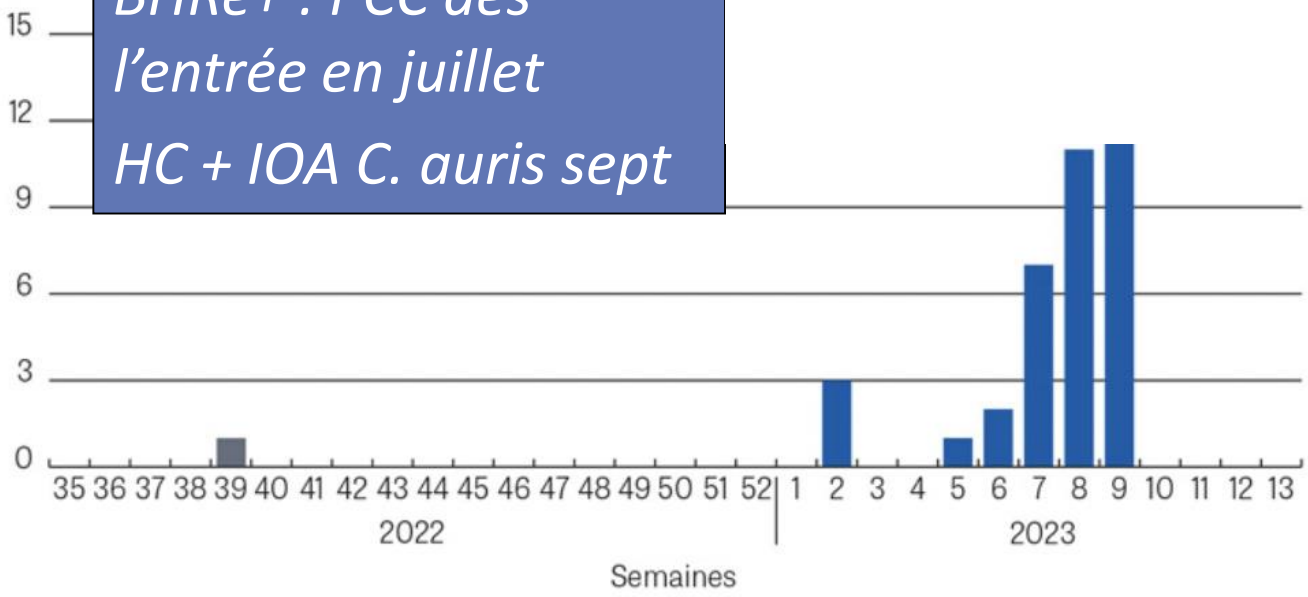
Épidémie de *Candida auris*, retour d'expérience

Sarah Jolivet[1], Edith Le Roux[1], Valérie Souyri[2], Frédéric Barbut[3], Christophe Hennequin[4], Sandra Fournier[2]

19 ans AVP Koweit

BHRe+ : PCC dès l'entrée en juillet

HC + IOA C. auris sept



6 services

10% prlvts env +

Clinique

Mortality Caused by *Candida auris* Bloodstream Infections in Comparison with Other Candida Species, a Multicentre Retrospective Cohort

Journal of Fungi

Cynthia Ortiz-Roa [1], Martha Carolina Valderrama-Rios [1], Sebastián Felipe Sierra-Umaña [2], José Yesid Rodríguez [3], Gerardo Antonio Muñetón-López [4], Carlos Augusto Solórzano-Ramos [4], Patricia Escandón [5], Carlos Arturo Alvarez-Moreno [1] and Jorge Alberto Cortés [1,6,*]

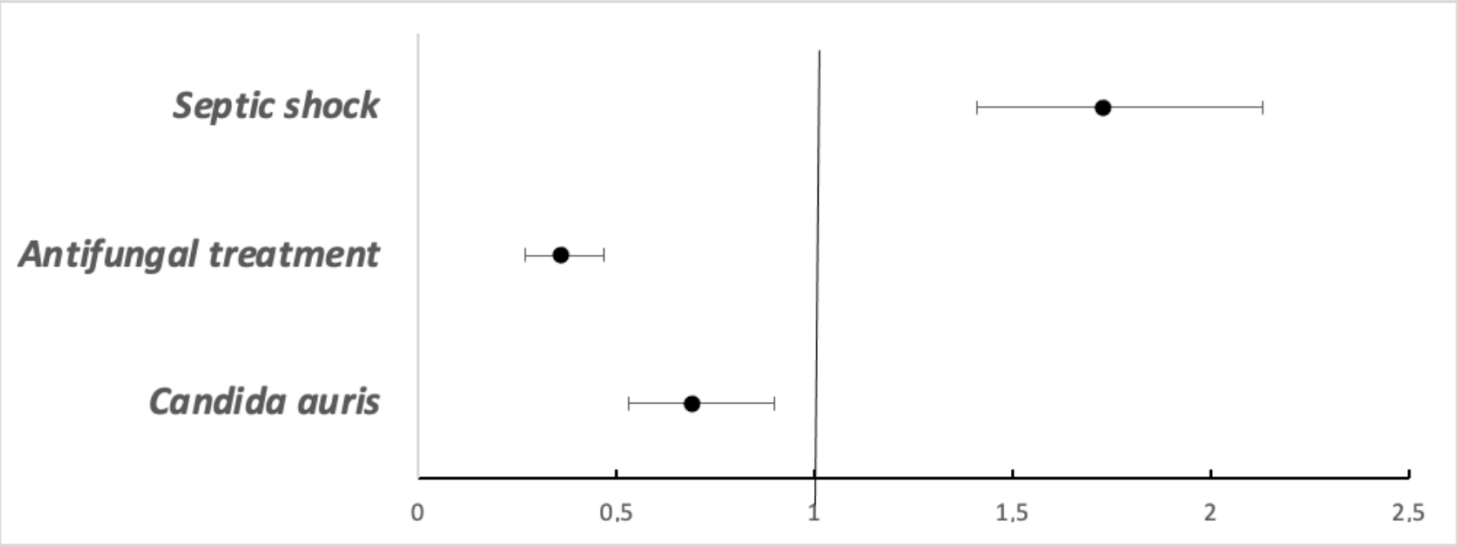


Figure 2. The hazard ratios of variables affecting mortality in the cohort of patients with candidemia. n = 512, Robust 95% CI.

Pas de surmortalité

Traitement

Candida auris: A systematic review and meta-analysis of current updates on an emerging multidrug-resistant pathogen

John Osei Sekyere

Tableau III – Données de la sensibilité in vitro aux antifongiques des souches de *C. auris* reçues au Centre national de référence des mycoses invasives et antifongiques, testées par la méthode EUCAST.

Valeurs des CMI50/CMI90 (mg/L) pour les antifongiques de 22 isolats de *Candida auris*							
AMB	5FC	Azolés				Échinocandines	
		Fluconazole	Voriconazole	Posaconazole	Isavuconazole	Caspofungine	Micafungine
0,25/0,5	≤0,12/≥64	≥64/≥64	0,25/1	≤0,01/0,12	0,015/0,12	0,03/0,03	0,015/0,03

Traitement

Echinocandin Drug	Adult dosing	Pediatric dosing
Anidulafungin	loading dose 200 mg IV, then 100 mg IV daily	not approved for use in children
Caspofungin	loading dose 70 mg IV, then 50 mg IV daily	loading dose 70mg/m^2/day IV, then 50mg/m^2/day IV (based on body surface area)
Micafungin	100 mg IV daily	2mg/kg/day IV with option to increase to 4mg/kg/day IV in children at least 40 kg

RAPID COMMUNICATION

In vivo evolution to echinocandin resistance and increasing clonal heterogeneity in *Candida auris* during a difficult-to-control hospital outbreak, Italy, 2019 to 2022

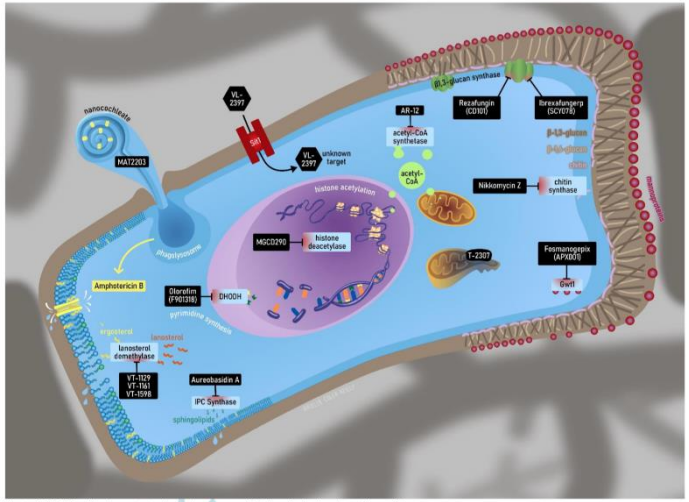
Giulia Codda[1], Edward Willison[2], Laura Magnasco[3], Paola Morici[2], Daniele Roberto Giacobbe[3,4], Antonella Mencacci[5,6], Daniele Marini[5,6], Malgorzata Mikulska[3,4], Matteo Bassetti[3,4], Anna Marchese[1,2], Vincenzo Di Pilato[1]

Mutations FKS

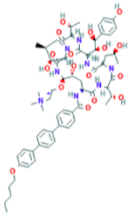
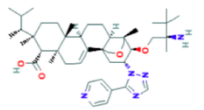
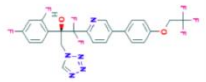
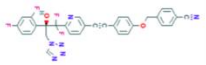
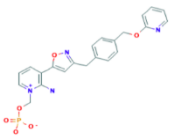
Traitement

Hope on the Horizon: Novel Fungal Treatments in Development

Adriana M. Rauseo[1], Ariella Coler-Reilly[2], Lindsey Larson[1], Andrej Spec[1]



Note: DHODH, dihydroorotate dehydrogenase; IPC, inositol phosphorylceramide

Class	Novel therapy	Chemical structure	Mechanism of action	Spectrum of activity	Expected benefits
Glucan synthesis inhibitors	Rezafungin (CD101)		Inhibition of β-1,3-glucan synthesis	*Candida* spp. (including *C. auris*), *Aspergillus* spp., and *Pneumocystis* spp.	• Not hepatotoxic • Longer half-life (weekly dosing) • Better penetration (IAC) • Less risk of resistance • Active against resistant strains • SQ and IV formulation • Better adherence, less hospital costs
	Ibrexafungerp (SCY078)			*Candida* spp. (including *C. auris*), *Aspergillus* spp. *Paecilomyces variotii*, *L. prolificans*, *Pneumocystis* spp. Lacks activity: *Mucor* and *Fusarium* spp.	• Oral and IV formulation • Active against resistant strains • Better penetration (IAC) • Minimal drug-drug interactions
Azoles	VT-1161 (Oteseconazole)		Inhibition of lanosterol 14α-demethylase (Cyp51	*Candida* spp., *C. immitis/posadasii*, *Trichophyton* spp., *Rhizopus arrhizus var. arrhizus*	• Minimal DDI (selective for fungal CYP51 enzyme)
	VT-1598			*Candida* spp. (including *C. auris*), *Aspergillus* spp., *Coccidioides*, *Blastomyces*, *Histoplasma*, *Rhizopus arrhizus*	• Minimal DDI (selective for fungal CYP51 enzyme) • Broad spectrum • Longer half-life
Glycosylphos-phatidylinositol (GPI) inhibitors	Fosmanogepix (APX001)		Inhibition of Gwt1, GPI-anchor protein synthesis	*Candida* spp. (including *C. auris*), *C. neoformans*, *C. immitis*, *Aspergillus* spp., *Fusarium*, *Mucorales*, *Lomentospora* Lacks activity: *C. krusei*	• Less toxicity (fungal specific target) • Broad spectrum, active against resistant isolate

Conclusion

WHO fungal priority pathogens list to guide research, development and public health action

Critical Priority Group

- *Cryptococcus neoformans*
- *Aspergillus fumigatus*
- *Candida auris*
- *Candida albicans*

High Priority Group

- *Nakaseomyces glabrata* (*Candida glabrata*)
- Eumycetoma causative agents
- *Fusarium* spp.
- *Candida parapsilosis*
- *Histoplasma* spp.
- Mucorales
- *Candida tropicalis*

Merci !