



Décolonisation spontanée d'une cohorte de patients BHRe: la menace fantôme !

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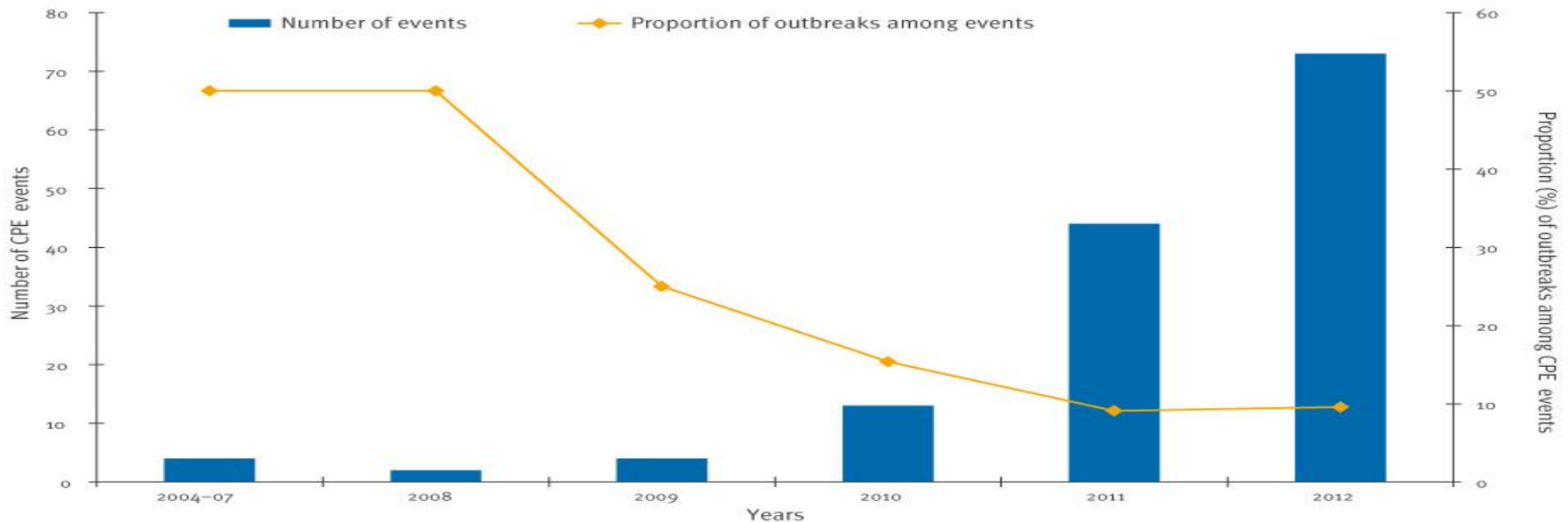
Conflits d'intérêt



Contexte

- Pandémie de BMR dont désormais les BHRe (EPC+):
 - CDC 23.000 morts/an USA; 12.500 en France (Burden)
 - Touche en particulier le Sud de l'Europe, l'Inde et l'Asie

Number of carbapenemase-producing Enterobacteriaceae (CPE) events (n=140) and proportion of outbreaks among these events at Assistance Publique-Hôpitaux de Paris, France, 2004–2012



A CPE event was defined as one index case (respectively defined as infected or colonised with CPE), followed or not by secondary case(s).

**Prévention de la transmission
croisée des Bactéries
Hautelement Résistantes
aux antibiotiques
émergentes
(BHRe)**

NEW

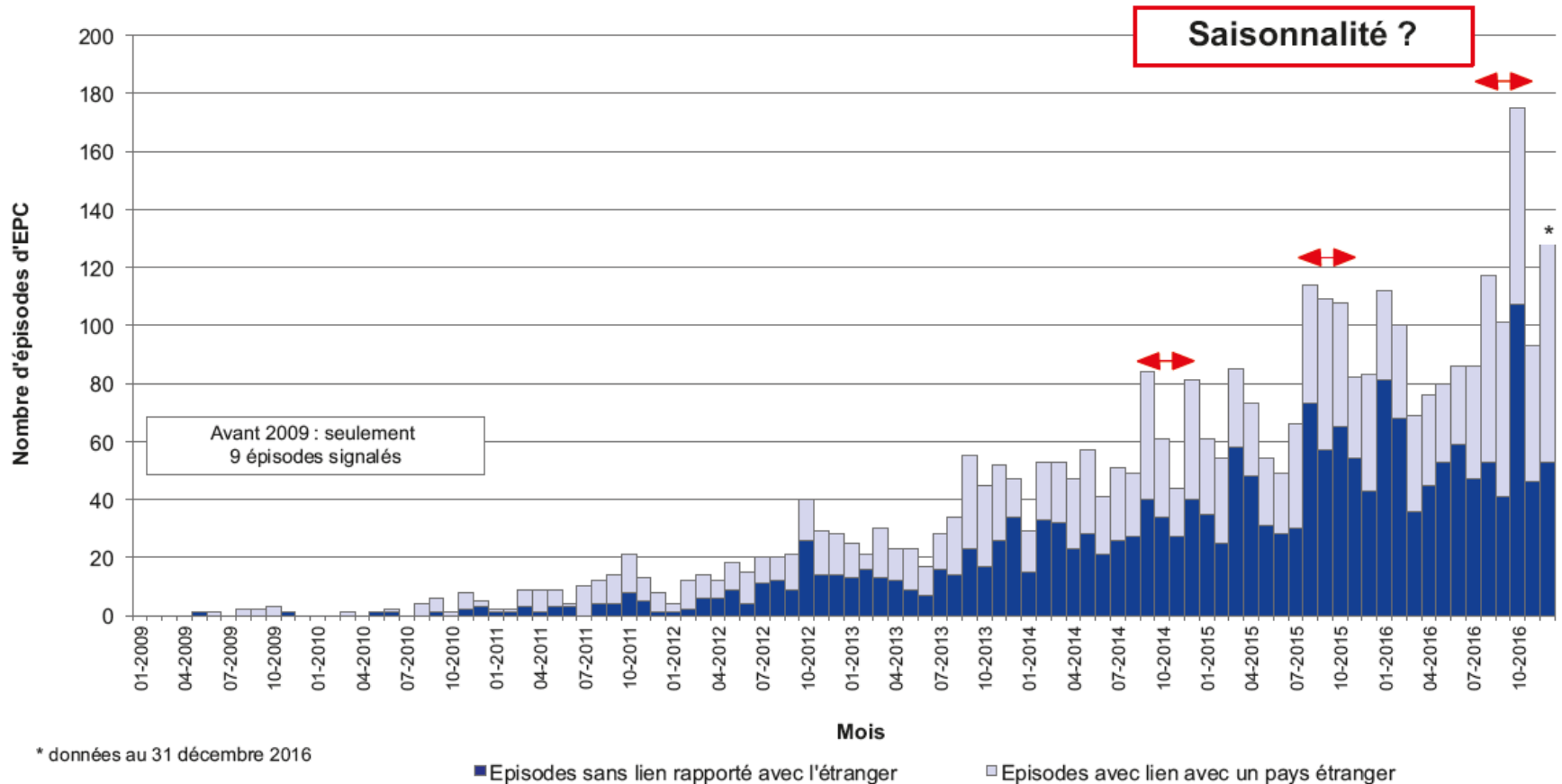
Juillet 2013

Collection
Documents



Prône le cohorting et soins d'hygiène dédiés

Evolution pas si inattendue



Sur toute la France: X100 des EPC en 7 ans (2009-2016)
avec 1223 pts/an (dont 20% d'infectés!)

Décolonisation des EPC

Table 3. Natural history of colonization without decolonization treatment among healthcare residents at the defined time points

| Subgroup | No. of studies ^a | No. of patients ^a | Pooled rate of colonization (%) ^b | 95% CI | I ² (%) | P between subgroups |
|---|-----------------------------|------------------------------|--|-----------|--------------------|---------------------|
| Total 1 months | 12 | 429 | 76.7 | 69.3–82.8 | 52 | |
| ESBL | 6 | 190 | 80.2 | 67.7–88.7 | 56.9 | 0.383 |
| CRE | 6 | 239 | 73.9 | 64–81.8 | 47.9 | |
| adult | 10 | 360 | 74.8 | 67.7–80.7 | 39.7 | 0.306 |
| children | 2 | 69 | 92.1 | 46.5–99.4 | 81.0 | |
| eradication defined as only 1 negative sample | 5 | 86 | 69.4 | 59.7–77.7 | 70 | 0.068 |
| eradication defined as >1 negative sample | 7 | 274 | 81.5 | 71–88.6 | 66 | |
| Total 3 months | 10 | 431 | 75.2 | 64–83.4 | 74 | |
| ESBL | 6 | 268 | 76.5 | 61.1–87.1 | 71 | 0.852 |
| CRE | 4 | 163 | 74.6 | 56.6–86.9 | 73 | |
| Total 6 months | 10 | 408 | 55.3 | 43.7–66.4 | 65 | |
| ESBL | 5 | 223 | 56.1 | 38.7–72.1 | 83.7 | 0.945 |
| CRE | 5 | 185 | 55.2 | 37.3–71.9 | 67.3 | |
| Total 12 months | 12 | 861 | 35.2 | 28.2–42.9 | 67 | |
| ESBL | 7 | 689 | 35.7 | 26.3–46.2 | 76.9 | 0.899 |
| CRE | 5 | 172 | 34.6 | 22.9–48.5 | 66.0 | |
| adult | 9 | 782 | 33.5 | 26.4–41.5 | 53.9 | 0.555 |
| children | 2 | 65 | 39.4 | 21.1–61.1 | 88.0 | |
| eradication defined as only 1 negative sample | 6 | 620 | 30.9 | 22.7–40.6 | 54.1 | 0.208 |
| eradication defined as >1 negative sample | 6 | 241 | 39.8 | 29.9–50.7 | 62.9 | |

Bar-Yoseph *et al.* JAC 2016

RESULTS. Of 66,672 fecal specimens collected, 345 specimens (0.5%) from 100 patients (0.3%) had CPE. The number and prevalence (per 100,000 patient-days) of CPE increased from 2 (0.3) in 2012 to 63 (8.0) in 2015 ($P < .001$). Male sex (odds ratio, 1.91 [95% CI, 1.15–3.18], $P = .013$), presence of wound or drain (3.12 [1.70–5.71], $P < .001$), and use of cephalosporins (3.06 [1.42–6.59], $P = .004$), carbapenems (2.21 [1.10–4.48], $P = .027$), and PPIs (2.84 [1.72–4.71], $P < .001$) in the preceding 6 months were significant risk factors by multivariable analysis. Of 79 patients with serial fecal specimens, spontaneous clearance of CPE was noted in 57 (72.2%), with a median (range) of 30 (3–411) days. Comparing patients without use of antibiotics and PPIs, consumption of both antibiotics and PPIs after CPE identification was associated with later clearance of CPE (hazard ratio, 0.35 [95% CI, 0.17–0.73], $P = .005$).

Décolonisation des ERV

Natural history of colonization with methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *Enterococcus* (VRE): a systematic review

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Abstract

Background: No published systematic reviews have assessed the natural history of colonization with methicillin-resistant *Staphylococcus aureus* (MRSA) or vancomycin-resistant *Enterococcus* (VRE). Time to clearance of colonization has important implications for patient care and infection control policy.

Methods: We performed parallel searches in OVID Medline for studies that reported the time to documented clearance of MRSA and VRE colonization in the absence of treatment, published between January 1990 and July 2012.

Results: For MRSA, we screened 982 articles, identified 16 eligible studies (13 observational studies and 3 randomized controlled trials), for a total of 1,804 non-duplicated subjects. For VRE, we screened 284 articles, identified 13 eligible studies (12 observational studies and 1 randomized controlled trial), for a total of 1,936 non-duplicated subjects. Studies reported varying definitions of clearance of colonization; no study reported time of initial colonization. Studies varied in the frequency of sampling, assays used for sampling, and follow-up period. The median duration of total follow-up was 38 weeks for MRSA and 25 weeks for VRE. Based on pooled analyses, the model-estimated median time to clearance was 88 weeks after documented colonization for MRSA-colonized patients and 26 weeks for VRE-colonized patients. In a secondary analysis, clearance rates for MRSA and VRE were compared by restricting the duration of follow-up for the MRSA studies to the maximum observed time point for VRE studies (43 weeks). With this restriction, the model-fitted median time to documented clearance for MRSA would occur at 41 weeks after documented colonization, demonstrating the sensitivity of the pooled estimate to length of study follow-up.

Conclusions: Few available studies report the natural history of MRSA and VRE colonization. Lack of a consistent definition of clearance, uncertainty regarding the time of initial colonization, variation in frequency of sampling for persistent colonization, assays employed and variation in duration of follow-up are limitations of the existing published literature. The heterogeneity of study characteristics limits interpretation of pooled estimates of time to clearance, however, studies included in this review suggest an increase in documented clearance over time, a result which is sensitive to duration of follow-up.

Keywords: MRSA, VRE, Colonization, Carrier, Contact precautions

50% à M6

Validité des données et intérêt ?

Hier = ERV; Aujourd'hui/demain? = EPC

Alors qu'en France on définit les BHRé (EPC+ERV)



Progresser nécessite des données locales !

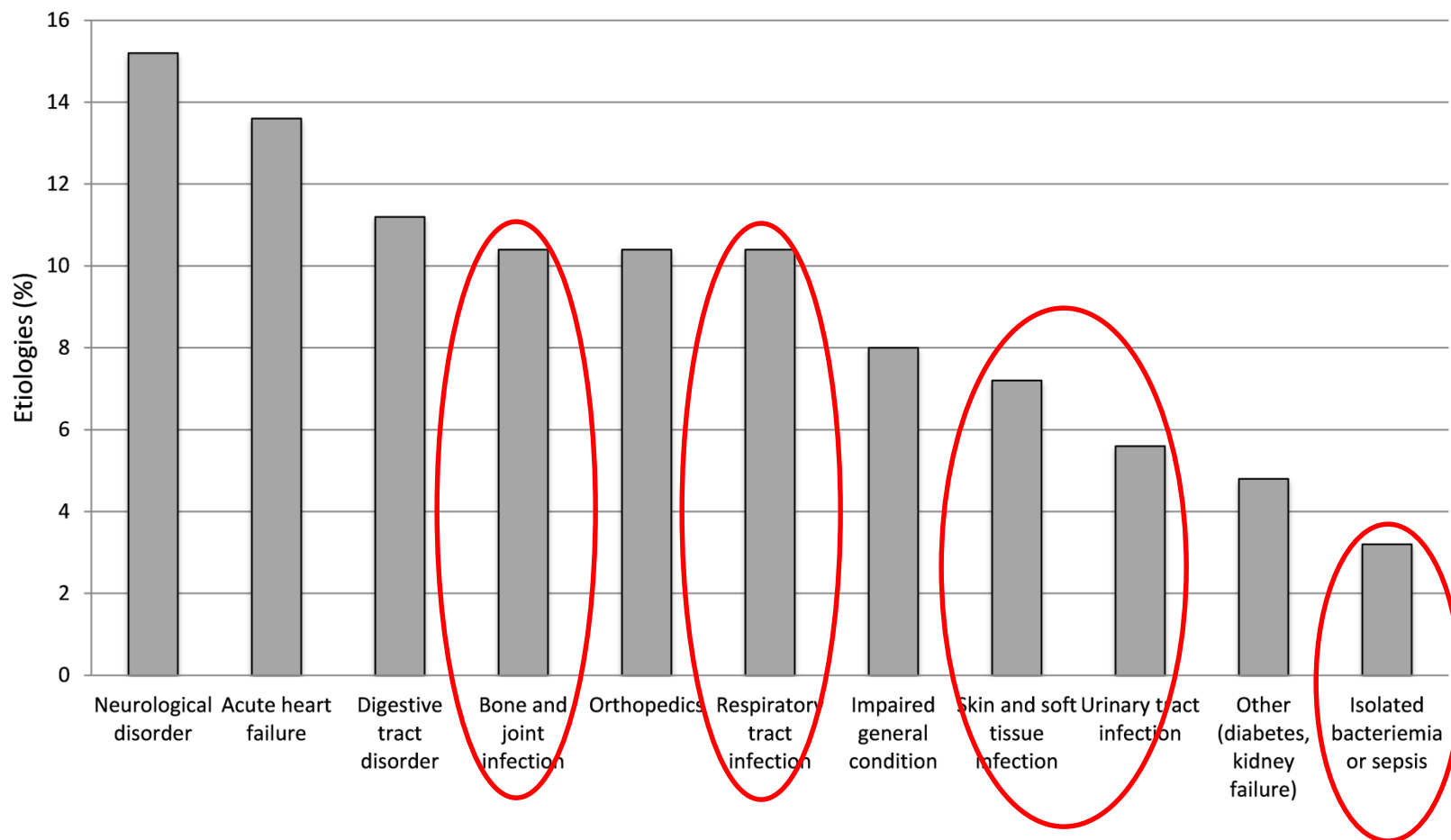
Etude rétrospective des **2 centres experts** sur la RP (APR/RPC et KB) de 2015 à 2016 chez les patients hospitalisés en secteur dédié BHRe signalés par l'EOH

- Ont été colligés le micro-organisme, sa résistance, les causes possibles du portage, la présence d'une infection liée ou non à la BHRe, la prise d'ATB et le suivi de colonisation; ainsi que l'étude de la « perte de chance »
- Def: décolonisation au moins 2 prélèvements négatifs à 7j
- 2 objectifs:
 - Evaluer la décolonisation spontanée et son délai
 - Evaluer la perte de chance liée au cohorting

Résultats

- Au total 198 séjours soit 125 patients
- Age 63 ± 19 ans, sexe ratio (H/F) 2.6
- Charlson médian à 4 (IQR 3-6)
- Colonisés dans 95.2% (n=119), seulement 6 infectés à BHRe

Motifs d'hospitalisation

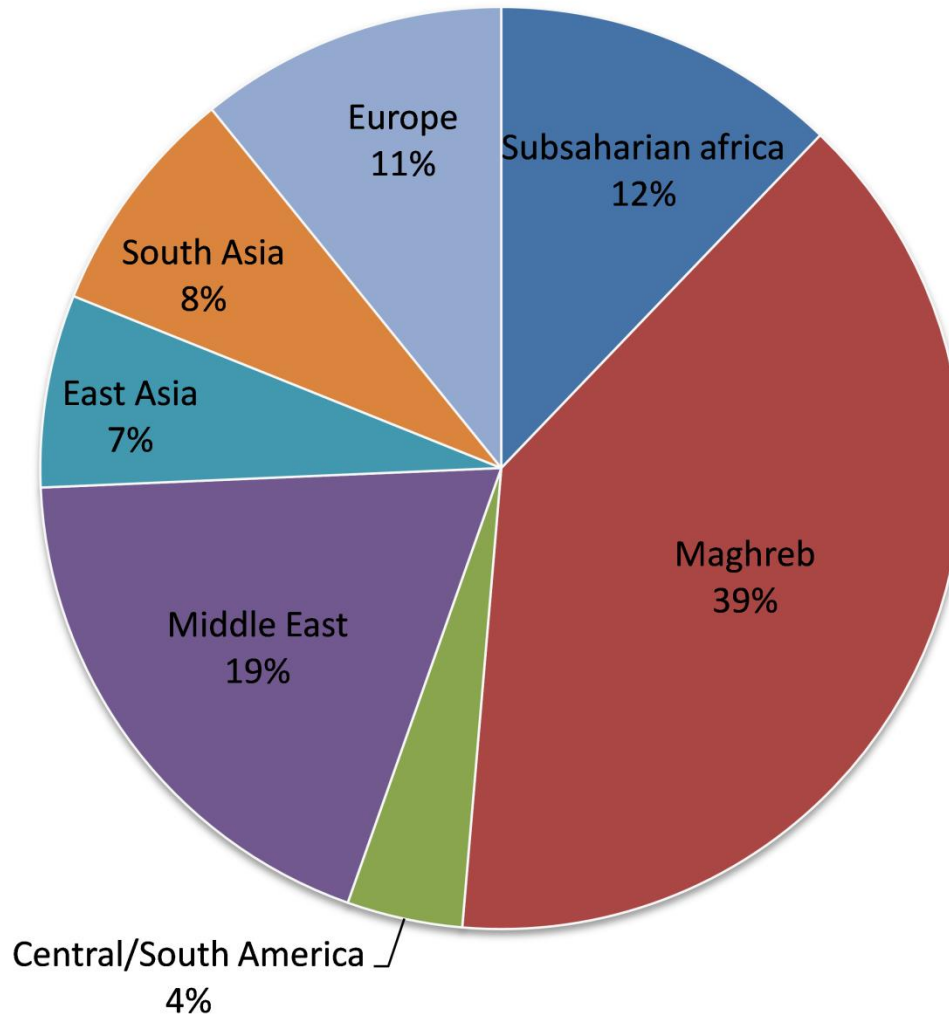


Les infections représentaient 38.4% des étiologies (n=48), dont 6 à BHRé

Diagnostic et séjour

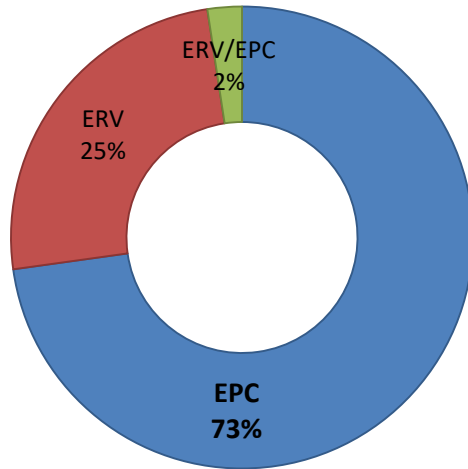
- Médiane durée séjour = 12 j (1-290)
- Colonisés avant hospitalisation (24,8%;n=31), durée médiane de portage de 64 j (3-609)
- Chez les découverts BHRe à l'admission (n=94), délai médian jusqu'au diagnostic de colonisation de 2 j (0-127)

Origine ethnique

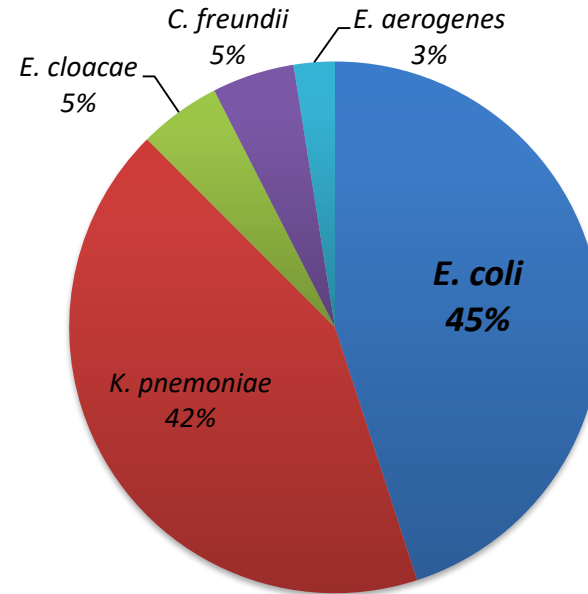


Répartition

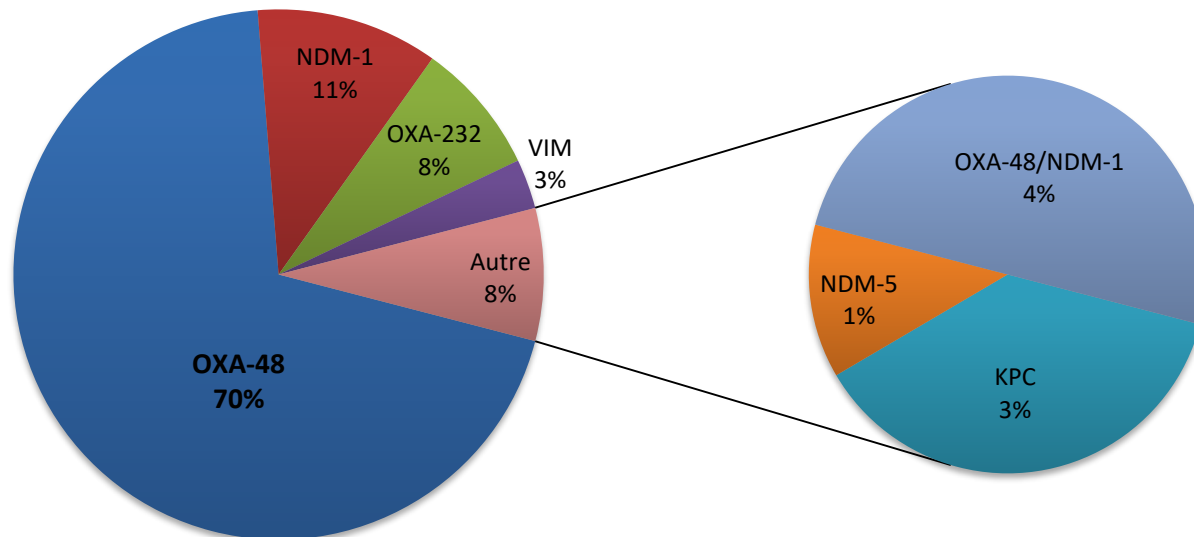
A.



B.



C.



Décolonisation et suivi

- **Décolonisation spontanée** chez **48.2%** (n=56)
- Dont répartition $\approx 1/3 < J30$, $1/3 J30-90$, $1/3 > J90$
- Le délai **médian** de **49j** (1-1091)
 - $>50\%$ décolonisés à M2 versus M6 dans la littérature
- Leur négativité a été confirmée avec une médiane de suivi de 96 j (0-974)
 - 2 individus se sont recolonisés pendant l'année
- Par ailleurs, **14.4%** (n=18) suivis au-delà d'un an
 - dont 13 décolonisés et 5 colonisés

Devenir et perte de chance (1)

- Mortalité de 8.8% (n=11)
 - attribuable aux comorbidités plus qu'au « sepsis » à BHRe (n=2)
- En suite de MCO
 - Majorité de RAD (72.8%, n=91)
 - Contre 9.6% (n=12) transférés en SSR
 - 8.8% admis dans un autre établissement
 - 3 patients en USP



Devenir et perte de chance (2)

- Estimation d'une perte de chance dans 13.6% (n=17)
- Prolongation d'hospitalisation (n=8): notamment due à l'absence de mise en œuvre des règles d'hygiène nécessaire (IDE etc) dans les autres établtis (SSR++)
- Chirurgie retardée (n=7): Absence de plateau technique et refus des structures de tels patients
- Cpdt taux plus faible à KB vs APR/RPC
 - 2.9% (n=2/70) vs 27.3% (n=15/55) (p<0.0001)
 - Importance de la taille des structures !!
- Le délai médian au retard était de 32.5 j (15-300)

Colonisés versus décolonisés

| Variables | Colonized (n=60) | Decolonized (n=56) | p-value ($\alpha=0.05$) |
|--|---------------------|-----------------------|------------------------------|
| Age, mean \pm SD | 61 \pm 20.9 | 66 \pm 18.4 | 0.17 |
| Patients with a Charlson Comorbidity Index (CCI) $<5^*$, n (%) | 35 (58.4) | 28 (50.0) | 0.46 |
| Elapsed time in days to detect BHRe consideration admission, median (min-max) | 2 (-420-101) | 0 (-609-127) | 0.34 |
| Duration of hospitalization in days, median (min-max) | 9 (1-273) | 16.5 (2-290) | 0.02 |
| Duration of follow-up in days considering discharge, median (min-max) | 7 (0-721) | 99 (0-974) | <0.0001 |
| Antibiotic exposure prior to colonisation, n (%) | 21 (35.0) | 25 (44.6) | 0.34 |
| Antibiotic exposure after being colonized, n (%) | 12 (21.4) | 5 (8.3) | 0.06 |
| Pooled duration of antibiotic regimen in days, mean \pm SD | 19.6 \pm 15.3 | 21.1 \pm 17.6 | 0.83 |
| Occurrence of a sepsis due to BHRe, n (%) | 3 (5.0) | 3 (5.4) | 0.99 |
| Carrying a CRE, n (%) | 44 (73.3) | 38 (67.9) | 0.55 |
| Harboring a OXA-48 CRE, n (%) | 33 (55.0) | 25 (44.7) | 0.35 |
| Returning back home, n (%) | 43 (71.7) | 44 (78.6) | 0.52 |
| Being transfer to another facility including rehabilitation, n (%) | 7 (11.7) | 9 (16.1) | 0.59 |
| Unfavorable outcome (death), n (%) | 8 (13.3) | 2 (3.6) | 0.1 |

Take Home messages

- Décolonisation possible il y a aura !
 - 50% de décolonisé à 50 j
- Le lavage des mains, tu feras
- Prescription d'ATB inutile, tu banniras
- Perte de chance 13.6% due au cohorting
 - La menace est bien réelle sur ce point
 - Un soin identique pour tous, tu favoriseras
- Jamais perdre espoir tu devras
 - Promouvoir le suivi des BHRe ambu



Remerciements

