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Reduced antibiotic exposure in the neonatology unit, a 15-year study

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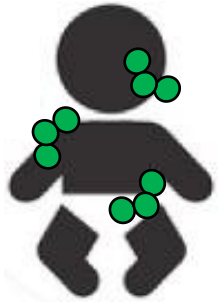
Background

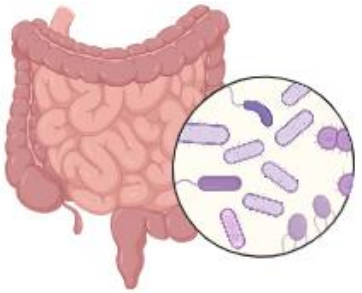
High morbidity and mortality of neonatal sepsis



Non specific clinical signs

Diagnostic tools with limited performance

Antibiotics overexposure



Aim of the study

To quantify antibiotics consumption in a tertiary care neonatal unit and evaluate the changes over time, following the implementation of antimicrobial stewardship practices

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Antibiotic stewardship

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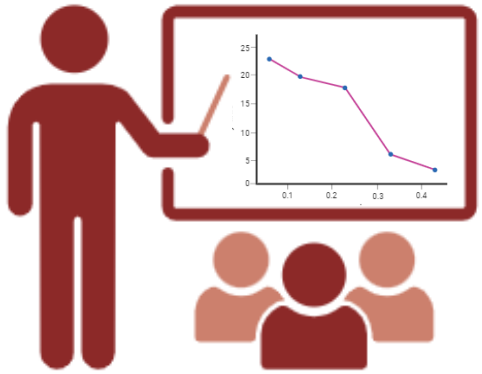
Reduction in the use of diagnostic tests in infants with risk factors for early-onset neonatal sepsis does not delay antibiotic treatment

Gilles Duvoisin[a], Céline Fischer[a,b], Delphine Maucort-Boulch,[c,d,e], Eric Giannoni[a]

Review article | Published 19 September 2013, doi:10.4414/smw.2013.13873
Cite this as: Swiss Med Wkly. 2013;143:w13873

Recommendations for term and late preterm infants at risk for perinatal bacterial infection

Stocker Martin[a], Berger Christoph[b], McDougall Jane[c], Giannoni Eric[d]



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Original Investigation | Pediatrics

Analysis of Antibiotic Exposure and Early-Onset Neonatal Sepsis in Europe, North America, and Australia

Eric Giannoni, MD; Varvara Dimopoulou, MD; Claus Klingenberg, MD, PhD; Lars Navér, MD, PhD; Viveka Nordberg, MD, PhD; Alberto Berardi, MD; Salhab el Helou, MD; Gerhard Fusch, PhD; Joseph M. Bliss, MD, PhD; Dirk Lehnick, PhD; Nicholas Guerina, MD, PhD; Joanna Seliga-Siwecka, MD, PhD; Pierre Maton, MD; Donatienne Lagae, MD; Judit Mari, MD, PhD; Jan Janota, MD, PhD; Philipp K. A. Agyeman, MD; Riccardo Pfister, MD, PhD; Giuseppe Latorre, MD; Gianfranco Maffei, MD; Nicola Laforgia, MD; Enikő Mózes, MD; Ketil Størdal, MD, PhD; Tobias Strunk, MD, PhD; Martin Stocker, MD; for the AENEAS Study Group

nature communications

Less is more: Antibiotics at the beginning of life

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Martin Stocker[1], Claus Klingenberg[2,3], Lars Navér[4,5], Viveka Nordberg[4,5], Alberto Berardi[6], Salhab el Helou[7], Gerhard Fusch[7], Joseph M. Bliss[8], Dirk Lehnick[9], Varvara Dimopoulou[10], Nicholas Guerina[8], Joanna Seliga-Siwecka[11], Pierre Maton[12], Donatienne Lagae[13], Judit Mari[14], Jan Janota[15,16], Philipp K. A. Agyeman[17], Riccardo Pfister[18], Giuseppe Latorre[19], Gianfranco Maffei[20], Nichola Laforgia[21], Enikő Mózes[22], Ketil Størdal[23], Tobias Strunk[24] & Eric Giannoni[10]

«On donne trop d'antibiotiques aux nourrissons»

RTS 24heures Le Matin

Less antibiotics 4 babies

https://www.la4b.info

Methods

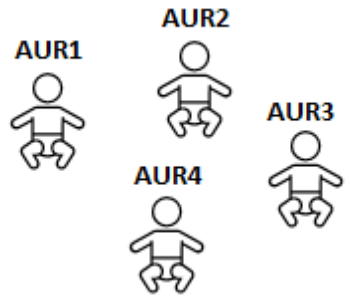
- **Retrospective**
- **Single center study**
- **Study period : 01.01.2007 and 31.12.2022**
- **Inclusion criteria: patients hospitalized in the neonatal unit of Lausanne University Hospital**
- **Exclusion criteria: general consent refusal**

Metrics

- **Number of patients treated with antibiotics per 100 admissions**

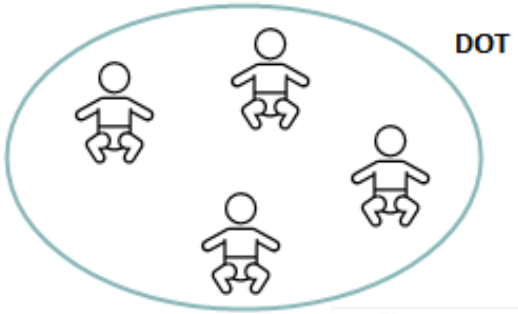
- **AUR (Antibiotic Use Ratio) :**

$$\frac{\text{Number of days of ATB}}{\text{Stay duration}} \times 100$$



- **DOT (Days of Therapy) :**

$$\frac{\text{Number of days of ATB (ATB1 +ATB2+…)}}{\text{Stay duration (Patient1 +Patient2 +….)}} \times 1000$$



- **Number of deaths per 100 admissions**

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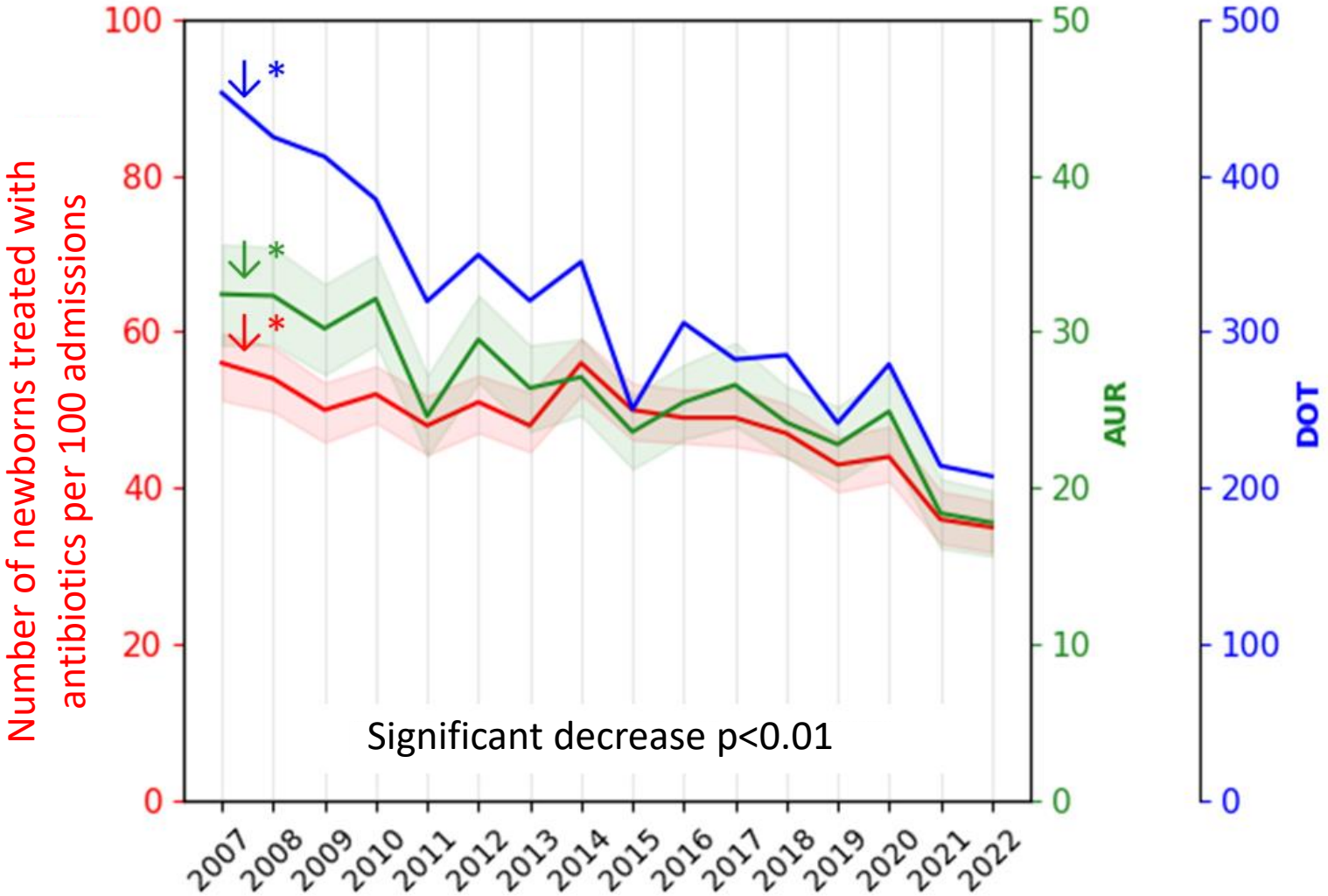
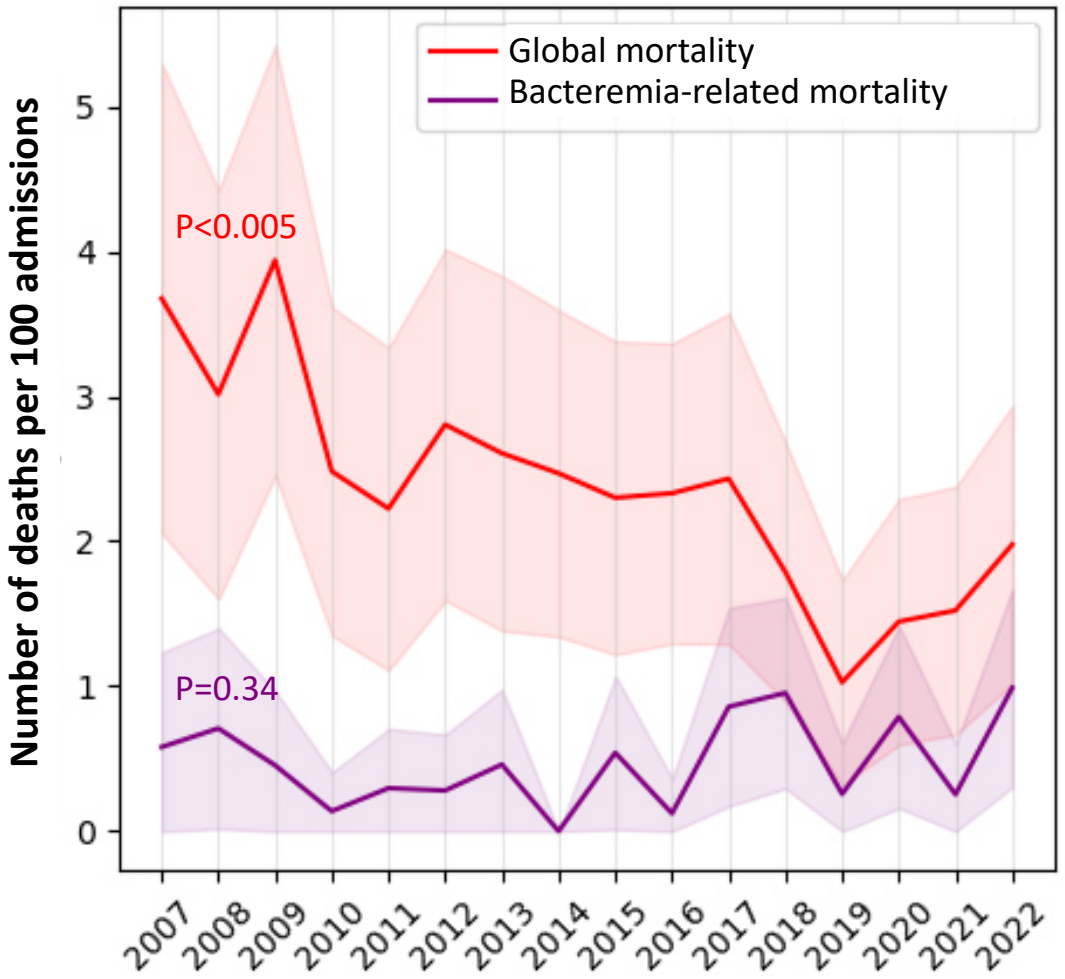
Results – Antibiotic exposure



- Population: 11’463 neonates

Results - Mortality



- Overall mortality decreased by 46% (from 3.7% to 2.0%, P < 0.005)
- No significant change in bacteremia-related mortality over time (0.58% to 0.99%, P = 0.34).

Conclusion

Antimicrobial stewardship implementation → Reduced overall antibiotic exposure

No concomitant increase in mortality

Additional analysis are ongoing