

Antibiotic use in neonatal care: measuring cumulative exposure in point prevalence surveys identifies high infant-level antibiotic exposure

Panellist

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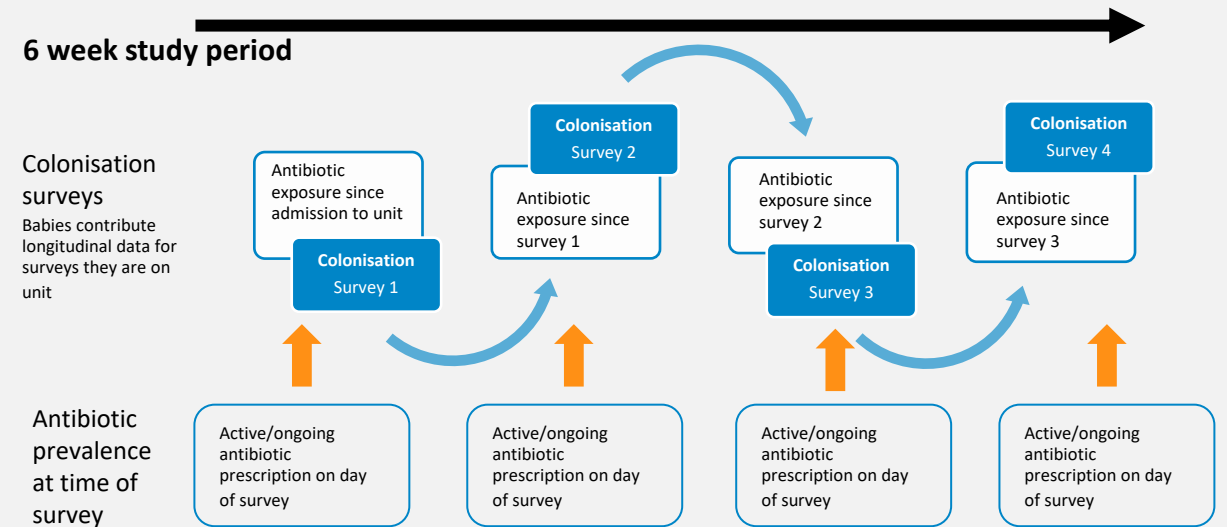
Introduction

- Infants on neonatal units may be repeatedly exposed to antibiotics
- Standard point prevalence surveys (PPS) cannot capture repeated treatment and may underestimate true antibiotic exposure
- Understanding patient-level antibiotic use throughout their stay is important to design and evaluate antibiotic stewardship interventions
- The NeoIPC colonisation feasibility assessment is part of the wider NeoIPC project
- 21 neonatal units in 7 European countries participated

Methods

Colonisation surveys (4 timepoints, see below) captured antibiotic use as follows:

- Ongoing at the time of each survey (PPS)
- From admission through each survey infant participated in (cumulative)
- Data were collected anonymously



Results



824 infants participated in at least one colonisation survey



569/824 (69%) received at least one course of antibiotics since admission to the neonatal unit

252/824 infants never received antibiotics



Gestational age
35 weeks (IQR: 33-38)

Birthweight
2390 (IQR: 1720-3165)

569/824 infants ever received antibiotics

Gestational age
33 weeks (IQR: 29-38)

Birthweight:
1990 (IQR: 1105-3082)



140 different antibiotic regimens received → median 3 courses per baby (IQR: 1-6 courses)



Ampicillin + Gentamicin: 466 courses



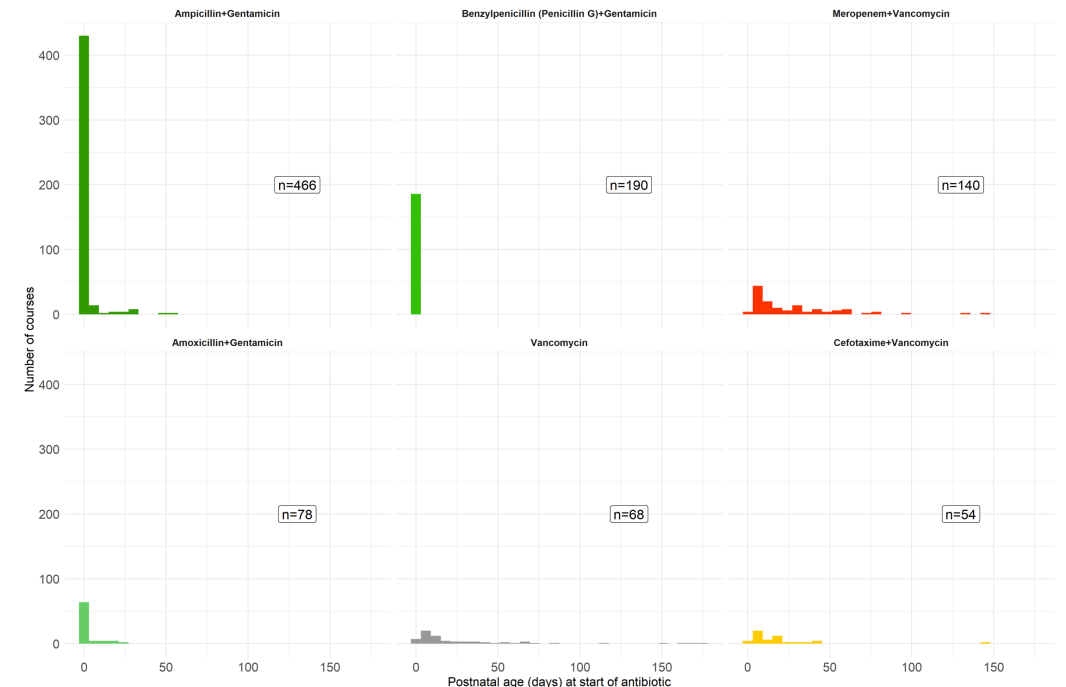
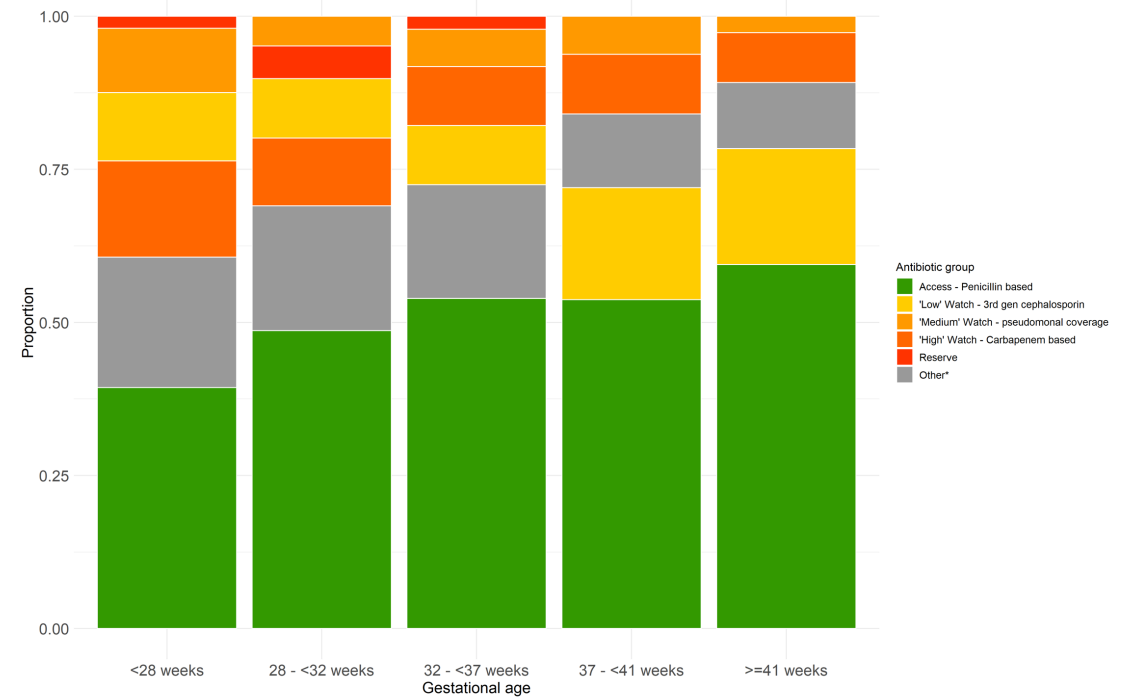
Penicillin G + Gentamicin: 190 courses



Meropenem + Vancomycin: 140 courses



Different patterns of use by gestational age and postnatal age



Conclusions

- 2/3 infants in high technology neo-natal units in Europe are exposed to antibiotics during their stay
- The most commonly used antibiotics in this setting are from the WHO AWaRe Access group
- However, Watch and Reserve group agent use is high among the most vulnerable preterm patients and tends to occur later on during inpatient stay
- PPS largely fail to capture repeated exposures and may misrepresent antibiotic exposure for long-stay preterm infants in quantity & quality
- These findings are likely relevant to repeatedly exposed populations (e.g. adults in long term care facilities) and settings with multimodal distributions of length of stay

Thank you to the whole NeoIPC team, sites and partners

Learn more about the NeoIPC Project here!



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