Simple and feasible NICU antimicrobial stewardship program (ASP) in a Japanese community hospital

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Abstract

We implement and evaluate the simple ASP program in the NICU department of Nara Prefecture General Medical Center, Nara, Japan. During the pre- (March 2013 to August 2017) and post-(September 2017 to March 2018) ASP implementation periods, 913 and 92 patients were admitted to NICU. DOT/1,000 patient-days were 175.1 and 59.3 in pre- and post-ASP implementations (p<0.001) with 66.1% reduction of antimicrobial prescriptions. This ASP program was easily implemented in a NICU department of a community hospital and significantly reduced antimicrobial prescription. This kind of simple protocol may be successfully scaled-up in resource limited community hospitals.

Background

• Antimicrobial stewardship program (ASP) is widely implemented in tertiary hospitals
• ASP in a NICU ward of a community hospital is under-implemented and needs to be scaled-up

Methods

Study design: Pre-Post Study
Objectives: Implement and evaluate the ASP program in NICU of Nara Prefecture General Medical Center, Japan (Level III NICU, 15 beds)
Situation: No peds ID physician, ASP nurse or ASP pharmacist

Timeline

Develop ASP protocol
Post-ASP
Pre-ASP

Post-ASP Flowchart

Sepsis score

Point

Neutrophil <1750/mm3

1

WBC <7500 or >40,000/mm3

1

I/T ratio ≥0.20

1

I/T ratio ≥0.40

2

CRP ≥1 mg/dL

1

CRP ≥5 mg/dL

2

Next steps:
1. Increase sample size of the post-ASP group
2. Confirm if ASP reduces NEC and LOS
3. Assess long-term effects of reduced antimicrobials (ex: development and obesity)
4. Scale up to other small NICU departments

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