

IAP - IJPP CME - 2024**RATIONAL USE OF ANTIBIOTICS IN NEONATAL INTENSIVE CARE UNITS**

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Abstract: *Antibiotics are among the most frequently prescribed medications in neonatal intensive care units, often serving as lifesaving interventions in the context of suspected or confirmed sepsis. However, their overuse contributes to serious adverse outcomes such as antimicrobial resistance, disruption of the neonatal microbiome, increased incidence of necrotizing enterocolitis, invasive fungal infections and even mortality. Neonates pose unique challenges for antibiotic therapy due to diagnostic uncertainty, immature organ function affecting pharmacokinetics, and variability in clinical practice. This article outlines a rational framework for antibiotic use in neonates-emphasizing the selection of the right patient, appropriate antibiotic, route, dosage and treatment duration. It discusses the nuances of empirical therapy, the role of biomarkers and organism-specific considerations. The article further highlights antimicrobial stewardship strategies tailored to specific institutions, including prescription audits, formulary restrictions, selective susceptibility reporting, and de-escalation protocols. Adopting these measures is essential for optimizing therapeutic outcomes, minimizing harm and curbing the growing threat of antimicrobial resistance in neonatal care.*

Keywords: *Antimicrobial stewardship, Infant, Newborn.*

Points to Remember

- *Antibiotics are among the most frequently prescribed medications in neonatal intensive care units, often serving as lifesaving interventions.*
- *Rational frame work for antibiotic use in neonates is challenging and one size fits all is a myth.*
- *Antibiotic stewardship strategies are always tailored to every NICU and they have to be adhered to strictly.*
- *Use of unit specific antimicrobial policies are the most useful one and it differs from region to region.*
- *Use of computerized physician order entry (CPOE) systems will help and aid clinical decision making.*

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