

Introduction to Pediatric Infectious Diseases

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Key concepts, common pathogens, clinical approach, and prevention strategies

1. Overview

- **Definition** – Infectious diseases that affect infants, children, and adolescents.
- **Why children are unique**
 - Immature immune system ? higher susceptibility.
 - Different exposure patterns (day?care, schools).
 - Age?specific anatomy (e.g., shorter airways, smaller sinuses).
- **Goals of pediatric infectious disease care**
 1. Prompt identification of the causative agent.
 2. Effective, age?appropriate treatment.
 3. Prevention of complications and transmission.

2. Common Pediatric Pathogens by System

System	Typical Age Group	Major Pathogens	Representative Diseases
Respiratory	< 5?yr	Respiratory syncytial virus (RSV), influenza A/B, parainfluenza, adenovirus, <i>Streptococcus pneumoniae</i> , <i>Haemophilus influenzae</i> (non?typeable)	Bronchiolitis, pneumonia, croup, otitis media
Gastrointestinal	6?mo – 5?yr	Rotavirus, Norovirus, <i>Campylobacter</i> , <i>Salmonella</i> , <i>Shigella</i> , <i>Enteropathogenic E. coli</i>	Acute gastroenteritis, dysentery
Skin & Soft Tissue	All ages	<i>Staphylococcus aureus</i> (incl. MRSA), <i>Streptococcus pyogenes</i>	Impetigo, cellulitis, abscesses
Central Nervous System	< 2?yr	<i>Enteroviruses</i> (e.g., EV?71), <i>Neisseria meningitidis</i> , <i>Streptococcus pneumoniae</i> , <i>Haemophilus influenzae</i> type?b	Viral meningitis, bacterial meningitis, encephalitis

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System	Typical Age Group	Major Pathogens	Representative Diseases
Urinary Tract	< 2?yr (especially girls)	<i>Escherichia coli</i> , <i>Klebsiella</i> , <i>Enterococcus</i>	Acute cystitis, pyelonephritis
Bloodstream / Systemic	Neonates	Group?B <i>Streptococcus</i> (GBS), <i>E. coli</i> , <i>Listeria monocytogenes</i>	Neonatal sepsis, early ?onset sepsis
Vector?borne	Summer months	<i>Borrelia burgdorferi</i> , <i>Rickettsia</i> spp., <i>Anaplasma phagocytophilum</i>	Lyme disease, Rocky Mountain spotted fever

3. Clinical Approach

3.1 History Taking

1. **Age & developmental stage** – influences differential diagnosis.
2. **Onset & course** – sudden vs. gradual, fever pattern.
3. **Exposure history** – daycare, travel, sick contacts, pets, insects.
4. **Vaccination status** – gaps may point to preventable infections.
5. **Past medical history** – prematurity, chronic lung disease, immunodeficiency.

3.2 Physical Examination

- **General appearance** – ill?looking, lethargic, irritability.
- **Vital signs** – fever, tachypnea, tachycardia.
- **System?specific clues**
 - Respiratory: wheeze, crackles, retractions.
 - ENT: erythematous tonsils, otitis media signs.
 - Abdomen: tenderness, hepatosplenomegaly.
 - Skin: rash