

# POLYMYXIN B

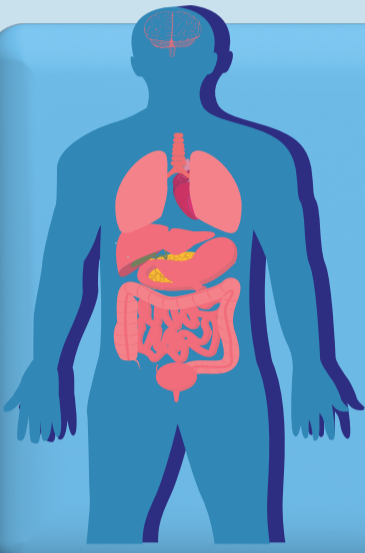
Disrupts the integrity of the outer membrane of Gram-negative bacteria by binding to the lipopolysaccharide molecules leading to leakage of cellular contents and bacterial lysis.

## ANTIMICROBIAL SPECTRUM

- Many **Gram-negative bacteria**, commonly used for **multidrug resistant infections**.
- No action against **Gram-positive organisms** and **anaerobes**.
- Among **Gram-negative**: *Proteus* spp., *Providencia* spp., *Burkholderia cepacia*, *Morganella* spp. and *Serratia* spp. are intrinsically resistant to Polymyxin B.

**ROUTE**  
**IV** 

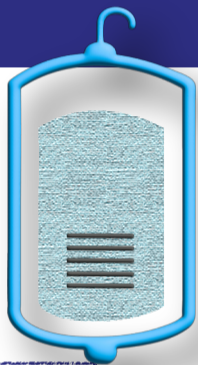
## MAIN INDICATIONS



- Used in infections like bacteremia, pneumonia caused by multidrug resistant bacteria like carbapenem-resistant *Acinetobacter* and carbapenem-resistant *Enterobacterales* and *Pseudomonas*.
- Not used for urinary tract infections.

## ADULT DOSE

- 2.5mg/kg loading dose (25,000 units/kg) followed by 1.5mg/kg (15,000 units/kg) every 12 hours.
- 1mg = 10,000 units.



**Dosing in patients with renal failure and hepatic impairment**  
No dose adjustment is required.

## Difference between Colistin (Polymyxin E) and Polymyxin B

Both drugs belong to the same class of polypeptide antibiotics and have similar spectrum and toxicity.

Polymyxin B is administered as active sulfate salt which is predominantly excreted by non-renal routes. Hence it achieves low urinary concentrations and thus cannot be used in urinary tract infections (UTIs). Colistin is excreted in urine as the prodrug colistimethate sodium and hence preferred for UTIs.

## SIDE EFFECTS



- ! Neurotoxicity includes paresthesias, ataxia, drowsiness and neuromuscular blockade.
- ! Nephrotoxicity-dose dependent reversible tubular necrosis.
- ! Skin hyperpigmentation although rare.

## MONITORING

- Renal function should be closely monitored during administration of polymyxin B.

**PREGNANCY**  
FDA Category  
**C**

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References can be found at [www.APUA.org](http://www.APUA.org)  
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