

단백합성 억제제

Protein Synthesis Inhibitors

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단백합성 억제제

I. Overview

II. Tetracyclines

III. Aminoglycosides

IV. Macrolides

V. Chloramphenicol

VI. Clindamycin

VII. Quinupristin/dalfopristin

VIII. Linezolid

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III. A. 작용기전 tetracyclines

IV. B. 항균범위 tetracyclines

V. C. 내성 tetracyclines

VI. D. 약동학 tetracyclines

E. 부작용 tetracyclines

VII. Quinupristin/dalfopristin

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Tetracycline resistance

- Decreased intracellular accumulation
 - Impaired influx
 - **Increased efflux**
- Ribosome protection
 - Proteins that inhibit tetracycline binding to ribosomes
- Enzymatic inactivation of tetracycline

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IV. A. 작용기전 S

V. B. 항균범위 tetracycline

VI. C. 내성 gentamicin

VII. D. 약동학 gentamicin/dalfopristin

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Aminoglycosides resistance

- **Enzymatic modification**
 - **Group transferase**
 - **Adenylation, acetylation, phosphorylation**
- Decreased uptake
- Altered target site
 - 30S subunit

Rationale for once-daily dosing in aminoglycosides

- Once daily dosing(q24h)
 - Fewer toxicities
 - Cheaper
- Three divided dosing(q8h)
 - Pregnancy
 - Neonatal infections
 - Bacterial endocarditis

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VI. B. 항균범위 clarithromycin

VII. C. 내성 clarithromycin/dalfopristin

VIII. D. 약동학

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Chloramphenicol

- Bacteriostatic
- 작용기전
 - Reversible binding to the 50S subunit
- Very broad spectrum, including anaerobes
- Resistance
 - Chloramphenicol acetyltransferase

Chloramphenicol

- Toxicity
 - Aplastic anemia
 - Fatal
 - Irreversible
 - Infrequent
 - 1/25,000 – 1/40,000
 - Not dose-related
 - Gray baby syndrome
 - Slow metabolism
 - Lack of glucuronyl transferase

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Clindamycin

- 작용기전
 - Reversible binding to the 50S subunit
 - Bacteriostatic
- Anaerobic bacteria
 - *Bacteroides fragilis*
- 부작용
 - Pseudomembranous colitis
 - Superinfection
 - Fatal
 - Tx; Oral metronidazole, or vancomycin

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Quinupristin/dalfopristin

- Streptogramin계 항생제
 - Quinupristin:dalfopristin = 30:70
- Bactericidal
 - Long postantibiotic effect
- 작용기전
 - Block ribosomal protein synthesis
 - Preventing translocation of peptidyl tRNA from the acceptor site to the donor site on the 50S subunit
 - Binds to a separate site on the 50S subunit; synergistic
- 임상적 사용
 - Vancomycin-resistant infections
 - VRSA, Vancomycin-resistant *Enterococcus faecium*(VRE)

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Linezolid

- 작용기전
 - Block ribosomal protein synthesis
 - Binds to the 23S ribosomal RNA of the 50S subunit