

IS LINEZOLID PENETRATION IN THE MEDIASTINUM ADEQUATE?: A CASE REPORT

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Background and importance

Mediastinitis is a relatively uncommon infection with poor antibiotic penetration due to its separation from the bloodstream. Linezolid achieves better tissue diffusion than vancomycin (mediastinum/plasma ratio = 1.32) and may be an effective treatment, though evidence on its mediastinal penetration is limited.



Aim and objectives

To determine linezolid levels in plasma and mediastinum and confirm their correlation with existing literature.

Material and methods

Case: 71 years female

Day	Key Clinical Event
Day 0	Emergency visit due to foreign body sensation in the esophagus + dyspnea + chest pain. Rigid esophagoscopy : esophageal perforation in Killian's mouth. Hospitalization .
Day +2	CT scan : pneumomediastinum. Dysphagia + chest pain. Febrile peak → Piperacillin/Tazobactam (P/T) initiated .
Day +4	Respiratory deterioration → CPAP. CT scan : extensive mediastinitis + left pleural effusion. Surgical drainage performed .
Day +6	Culture results: S. anginosus and S. merionis (multisensitive). De-escalation to Amoxicillin/Clavulanic acid .
Day +23	CT scan : Worsening of collections. Antibiotic switch to Meropenem + Vancomycin + Caspofungin + re-drainage .
Day +25	Culture results: N. faveszens and S. epidermidis . Antibiotic change to P/T + Linezolid (600mg/12h) . Radiological and clinical improvement .

Results

Evolution of Linezolid Levels

Day	Event	Linezolid Levels (mcg/mL)	Action Taken
Day +32	Plasma levels measured (HPLC-UV)	0.88 (subtherapeutic, target: 2-7)	Dose adjusted to 600mg/8h
Day +34	New levels measured (plasma & mediastinum)	5.06 (plasma) 7.64 (mediastinum) (mediastinum/plasma ratio = 1.51)	Current regimen maintained

Conclusion and relevance

These values align with ranges published in literature, confirmed by a series of cases, and demonstrate good tissue penetration of linezolid in mediastinum and pleural tissue.

