

Our findings suggest that 2 hours infusion of linezolid at a fixed dose (600 mg) regimen is appropriate to achieve the safety and efficacy against MRSA-caused infections in Chinese adults” Cai et al (2015).

Reference:

Cai, Y., Bai, N., Liu, X., Liang, B., Wang, J. and Wang, R. (2015)  
Pharmacokinetic/pharmacodynamic research on three different infusion time regimens of linezolid in healthy Chinese volunteers. International Journal of Clinical Pharmacology and Therapeutics. July 31st. .

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Abstract:

**OBJECTIVE:** To evaluate the pharmacokinetic and pharmacodynamic (PK/PD) results of three different infusion time regimens of single doses of 600 mg linezolid in healthy Han Chinese volunteers.

**METHODS:** We conducted a clinical trial involving 6 male and 6 female healthy Chinese volunteers. They were randomized to receive intravenous linezolid infusion (600 mg/0.5 hours, 600 mg/2 hours, or 600 mg/4 hours) in three periods with washout periods of 7 days between each dosage. Serum linezolid concentration was measured in each subject at pre-dose (at 0 hours) until 24 hours after each dose. The ratio of the area under the serum concentration-time curve (AUC) to the minimum inhibitory concentration (MIC), AUC/MIC, was adopted as the major relevant parameter. Monte Carlo simulation was used to evaluate the probability of target attainment (PTA) of these three linezolid regimens.

**RESULTS:** One subject in 600 mg/0.5 hours regimen complained of mild pain at the injection site. No significant difference was found in pharmacokinetic parameters among the three different infusion regimens. When AUC/MIC was applied as parameter, PTA of 4 hours infusion regimen was much lower than that of the 0.5 hours and 2 hours infusion regimens (55.65% vs. 74.91% and 72.03%, respectively). Especially at higher MIC (2 µg/mL), the PTAs of the 0.5 hours and 2 hours infusion regimens decreased to 57.2% and 50.1%, respectively, while that of the 4 hours infusion regimen dropped sharply to only 25.95%. When  $T > MIC$  was applied as a parameter, PTA of the 0.5 hours regimen was higher than 90%, while the 2

hours and 4 hours regimens remained 100%.

**CONCLUSION:** Our findings suggest that 2 hours infusion of linezolid at a fixed dose (600 mg) regimen is appropriate to achieve the safety and efficacy against MRSA-caused infections in Chinese adults.

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