

Extended Interval Aminoglycoside Dosing in Cystic Fibrosis

1. Initial Dosing:
 - Tobramycin 10mg/kg Q 24h
 - Amikacin 20mg/kg Q 24 h

(The initial dose is increased over the usual 7mg/kg and 15mg/kg as a larger volume of distribution is anticipated. These doses are targeted to achieve peak concentration of 20-25 for tobramycin and 40-45 for amikacin)

2. Aminoglycoside levels should be drawn 2 hours and 6 hours after the first dose
3. Use these 2 levels to estimate the aminoglycoside half-life
 - $K_e = \ln(C_{p2hrs}/C_{p6hrs}) / \text{time between the levels}$
 - $T_{1/2} = 0.693 / K_e$
4. The dosing interval should be adjusted based on half-life (dosing Q 6 half lives with a dosing interval no shorter the q 24h as per example below):

Half life (hours)	Dosing Interval
Less than or equal to 5 hours	Every 24h
Between 5.1-7 hours	Every 36 hours
Greater than 7 hours monitoring	Every 48 hours with frequent drug level monitoring

5. Aminoglycoside 2 hour and 6 hour post dose levels should be measured at least weekly in CF patients on aminoglycoside therapy. Change in clinical status may require more frequent aminoglycoside measurements.