

AMINOGLYCOSIDES
Streptomycin (SM), Capreomycin (CM), Kanamycin (KM), Amikacin (AK)
Fact Sheet

The aminoglycosides are complex organic molecules derived from the fungus *Streptomyces*.

Note: Kanamycin and Capreomycin are classified as second line drugs.

Dose:	15 mg/kg IM daily or 25-30 mg/kg twice or thrice weekly
Administration:	IV or IM
Excretion:	Renal
Distribution:	Widely distributed in extracellular fluids. These drugs cross the placental barrier. Concentrations are found in bile, tissues, sputum, bronchial secretions and synovial, interstitial, peritoneal, abscess and pleural fluids. Concentrations in the renal cortex are several times higher than the usual serum levels. They do not achieve significant levels in the cerebrospinal fluid (CSF) in healthy patients. Although penetration is enhanced in the presence of inflamed meninges, only low levels are achieved.

Adverse Reactions

Ototoxicity

1. Vestibular – usually associated with total dose. Tinnitus (ringing) or vertigo may occur, and are evidence of vestibular (balance) injury.
2. High frequency hearing loss – associated with total dose or persistent elevated serum concentrations. High frequency deafness usually occurs first and can be detected by audiometric testing. Total or partial irreversible deafness may occur.
3. Risk – increases with age, length of therapy and other ototoxic agents (loop diuretics, vancomycin, possibly clarithromycin). The risk is greater in patients with renal impairment and with preexisting hearing loss.

Nephrotoxicity

1. Characterized by decreased urine specific gravity oliguria, proteinuria or elevated BUN or serum creatinine.
2. Associated with elevated serum concentration and other renal toxic agents.
3. Renal function changes are usually reversible upon discontinuation of the aminoglycoside.

Hypersensitivity

1. Rashes (morbilliform and urticarial), as well as fever occasionally seen.