ADULT MEDICATION GUIDELINE	
AMIKACIN	
Scope (Staff):	All WNHS Staff
Scope (Area):	Obstetrics and Gynaecology
This document should be read in conjunction with the Disclaimer.	

Quick Links

Dose	Administration	Monitoring	Pregnancy and Breastfeeding

Restrictions

Formulary: Restricted

HIGH RISK Medication

Treatment required for longer than 48 hours must be under the direction of a Clinical Microbiologist or Infectious Disease Physician

Medication Class

Aminoglycoside antibiotic

Presentation

Form: Ampoule: 500mg/2mL

Storage

Store at room temperature, below 25°C

Dose

Empirical Therapy

Aminoglycoside therapy should be limited to short-term empirical therapy of serious Gram-negative infections, pending the outcome of investigations.

Appropriate aminoglycoside dosing in pregnant women is poorly defined; aminoglycoside plasma concentrations may be significantly altered by pregnancy-related increases in blood volume and kidney function. Dosing regimens based on actual, ideal or adjusted body weight have been used in practice and reported in the literature, but not directly compared. In the

absence of comparative data, take the same dosing approach in pregnant women as for other patients.

Once daily aminoglycosides may be used in pregnancy, especially beyond 24 weeks gestation.

For critically ill patients see Therapeutic Guidelines for dosing.

1. **Calculate creatinine clearance (CrCl)**

   Adult estimated creatinine clearance calculator - Australian Medicines Handbook (health.wa.gov.au)

2. **Determine weight**

   For patients with a BMI <30kg/m^2, **ACTUAL body weight** (ABW), to calculate dose.

   For patients with a BMI ≥30kg/m^2 use **ADJUSTED body weight** (AdjBW) to calculate dose. ***AdjBW = IBW + 0.4 x (ABW – IBW)*** (see Table 1 for IBW)

   If actual body weight (for non-obese patients) or adjusted body weight (for obese patients) is >100kg, use a weight of 100kg to calculate the dose

   Table 1

Height (cm)	Ideal Body Weight - females (kg)
155	48
160	53
165	57
170	62
175	66
180	71
185	75
190	80

3. **Calculate initial dose**

Creatinine Clearance (mL/min)	Dose	Dosing interval
>60	16-20mg/kg	24 hourly
40-60	16 – 20mg/kg	36 hourly
< 40	16mg/kg	Give single dose then seek expert advice

Round dose down to nearest 125mg increment

Administration

Refer to the Australian Injectable Drugs Handbook

IV Injection

Doses less than 500 mg can be given over 3 to 5 minutes

IV infusion

Step 1 Dilution: Dilute dose in 100mL sodium chloride 0.9% or glucose 5%

Step 2 Administration: Infuse over 30 to 60 minutes

Monitoring

Plasma concentration monitoring is generally not required for therapy that will be stopped within 48 hours. However, consider monitoring from the first dose if kidney function is changing rapidly or substantially, or in patients with altered pharmacokinetics (eg obese patients).

Plasma concentration monitoring is mandatory from the first dose if therapy is expected to continue for more than 48 hours.

Contact a Clinical Pharmacist for assistance with monitoring

Monitoring for nephrotoxicity

Aminoglycoside therapy is associated with nephrotoxicity, the risk is increased with multiple-daily dosing regimens, prolonged treatment courses (5-7 days) and in patients with pre-existing renal impairment.

In patients with stable renal function, assess renal function two to three times a week.

More frequent monitoring may be required if renal function is unstable.

Monitoring for vestibular and auditory toxicity

For prolonged aminoglycoside courses (5-7 days) vestibular function testing and audiometry should be considered. Aminoglycoside-induced vestibular and auditory toxicity is not predictable by plasma concentration and may become apparent at any stage of therapy and persist despite cessation of therapy.

Advise all patients receiving systemic aminoglycoside therapy of the potential for vestibular and auditory toxicity and direct patients to report any balance problems or changes in hearing at any stage during or following their treatment course.

Pregnancy

1st Trimester: Monitoring required

2nd Trimester: Monitoring required

3rd Trimester: Monitoring required

For more information, please contact KEMH Obstetric Medicines Information Service.

Breastfeeding

Safe to use

Comments

Amikacin is inactivated by penicillin and cephalosporin antibiotics.

Do not mix in the same injection or infusion solution.

Administer at separate sites if possible. Where it is not practical or possible to administer separately, flush the line well before and after giving each drug.

Related Policies, Procedures & Guidelines

External Legislation, Standards and Policy (list and hyperlink)

Check if existing higher level documents to avoid content duplication- see DoH WA and National, NMHS policies, WNHS policies, ACSQHC, NSQHS, ACORN

HDWA Mandatory Policies:

Example

List and hyperlink the titles of useful resources, do not hyperlink MR forms

WNHS Clinical Practice Guidelines:

Antimicrobial Stewardship

High Risk Medicines

Micro Alerts and Multi-Resistant organisms

WNHS Pharmaceutical and Medicines Management Guidelines:

Medication Administration

References

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Queensland Health. Aminoglycoside Dosing in Adults. 2018

South Australia. Aminoglycosides: Recommendations for use, dosing and monitoring. 2020

RPH. Intravenous (IV) Aminoglycoside Dosing and Monitoring Clinical Guideline. 2022.(intranet only)

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