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Aminoglycosides Dosing in Intermittent Haemodialysis Adults: A Narrative Review

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Abstract— *Aminoglycosides, particularly gentamicin and amikacin, remain important therapeutic agents for severe Gram-negative infections. However, their narrow therapeutic window, altered pharmacokinetics, and substantial drug removal during intermittent haemodialysis complicate dosing and challenge the achievement of optimal pharmacokinetic/pharmacodynamic targets. This narrative review summarizes current evidence on the pharmacokinetic characteristics and dosing strategies of gentamicin and amikacin in adult patients receiving intermittent haemodialysis. A literature search was conducted in April 2026 using Google Scholar, PubMed, and Scopus. English-language articles published between January 2000 and April 2026 were identified using the search strategy: (amikacin OR gentamicin) AND (dosing OR dosage OR pharmacokinetics OR pharmacokinetic) AND ("intermittent haemodialysis" OR "intermittent hemodialysis") AND (adult OR adults). Published studies demonstrate considerable pharmacokinetic variability in patients undergoing intermittent haemodialysis. Gentamicin clearance during haemodialysis ranges from approximately 1.1–22.2 L/h, depending on dialysis- and patient-related factors. A post-dialysis rebound phenomenon, with serum concentrations increasing by an average of 38.7%, necessitates appropriate timing of post-dialysis sampling to avoid underestimation of drug concentrations. Conventional low-dose post-dialysis regimens may fail to consistently achieve the desired Cmax/MIC ratio of ≥8–10 while resulting in prolonged systemic exposure during the interdialytic period. Pharmacokinetic studies suggest that high-dose pre-dialysis administration, particularly for gentamicin, may improve peak concentration attainment while allowing subsequent haemodialysis to limit overall drug exposure. However, clinical evidence is still limited, especially for amikacin, and further prospective studies are required to establish optimal dosing strategies. Individualized dosing supported by therapeutic drug monitoring remains essential to optimize therapeutic efficacy while minimizing toxicity in patients receiving intermittent haemodialysis.*

Keywords— *Adults; amikacin; dosing; gentamicin; intermittent haemodialysis*

I. Introduction

Aminoglycosides (AMGs), including gentamicin and amikacin, are critical antibiotics for the treatment of severe Gram-negative infections. They exhibit concentration-dependent bactericidal activity, with optimal efficacy achieved when the peak serum concentration (Cmax) reaches approximately 8–10 times the minimum inhibitory concentration (MIC). However, the narrow therapeutic window of AMGs and their predominant renal elimination necessitate careful dose optimization, particularly in patients with impaired renal function, to achieve therapeutic efficacy while minimizing the risk of toxicity. Although AMGs were largely replaced by β-lactams and fluoroquinolones in routine clinical practice, the global emergence of multidrug-resistant Gram-negative pathogens has renewed interest in their use, particularly as components of combination antimicrobial therapy [1]. Patients with end-stage renal disease (ESRD) have a high mortality rate, with infections representing the second leading cause of death. In individuals undergoing intermittent haemodialysis (IHD), substantially altered AMG pharmacokinetics require individualized dosing strategies and therapeutic drug monitoring (TDM) to optimize efficacy while minimizing systemic toxicity [2].

For patients undergoing IHD, the substantial removal of these drugs during dialysis sessions, combined with the lack of universally standardized dosing protocols, complicates the achievement of optimal pharmacokinetic/pharmacodynamic (PK/PD) targets. The altered PK profile is further influenced by dialysis-related factors, including dialyzer characteristics, dialysis duration, blood flow rate, and residual renal function [2–4]. Previous pharmacokinetic studies have demonstrated substantial inter-individual variability in AMG clearance during haemodialysis, highlighting the importance of individualized dosing approaches guided by TDM [3,4].

Given these complexities, a thorough understanding of the PK profile of AMGs in IHD patients is crucial for developing evidence-based dosing regimens that account for both patient-specific variability and the influence of the dialysis procedure itself [5]. Thus, this review aims to synthesize current knowledge regarding optimal dosing strategies and PK considerations for gentamicin and amikacin in patients receiving IHD, with a particular focus on achieving therapeutic targets while minimizing adverse effects.

II. Materials and Methods

A. *Literature Search*

A literature search was performed in April 2026 using several electronic databases, including Google Scholar, PubMed, and Scopus. Relevant articles published from January 2000 to April 2026 were identified using a combination of keywords and Boolean operators: (amikacin OR gentamicin) AND (dosing OR dosage OR pharmacokinetics OR pharmacokinetic) AND ("intermittent haemodialysis" OR "intermittent hemodialysis") AND (adult OR adults).

Articles related to AMGs were included only if specific PK or dosing data for gentamicin or amikacin were reported; data from other AMGs, particularly tobramycin, were not

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extrapolated, due to its lack of availability in the local healthcare setting. Studies focusing exclusively on the treatment of Gram-positive bacterial infections (e.g., combination therapy for infective endocarditis), as well as short reports, letters, non-English publications, and articles without full-text availability, were considered ineligible. Articles were screened based on titles and abstracts, followed by full-text assessment for eligibility.

III. Results

A. PK Properties

The extent of AMG removal during IHD is influenced by a combination of drug-, dialysis-, and patient-related factors. Drug physicochemical properties, including molecular weight (MW), electrostatic charge, water solubility, and lipophilicity, affect protein binding, volume of distribution (Vd), and affinity for red blood cells, thereby influencing the extent of extracorporeal clearance [6]. Gentamicin has physicochemical characteristics that favour significant removal by IHD, including a relatively low MW (~477 Da), small Vd (~0.35 L/kg), and low protein binding (<10%) [7].

Mean Vd varies among different patient populations. In the general population, the mean Vd ranges from 13.3–24.5 L/70 kg. Critically ill patients demonstrate higher Vd values, ranging from 19–53 L/70 kg, likely due to alterations in fluid distribution and increased extracellular volume. In contrast, obese patients have reported mean Vd values ranging from 10.5–20.3 L/70 kg, while elderly patients exhibit Vd values comparable to the general population (14.6–25.9 L/70 kg) [1].

Due to the prolonged distribution phase of AMGs, appropriate timing of TDM sampling is essential. The Mayo Clinic Antimicrobial Therapy Quick Guide recommends obtaining peak concentrations approximately two (2) hours after completion of infusion to allow sufficient distribution [8]. For post-dialysis concentrations, a delay of 4–8 hours after completion of haemodialysis (depending on dialysis characteristics) is suggested to allow equilibration and completion of the rebound phenomenon, thereby avoiding falsely low drug concentrations. The rebound phenomenon occurs because redistribution of gentamicin from peripheral tissues into plasma occurs more slowly than dialytic removal of the drug [3,5]. The magnitude of rebound may range from 0–70%, with a reported mean increase of around 38.7%, occurring approximately 1.5–3 hours after cessation of haemodialysis [9].

During IHD sessions, gentamicin clearance is substantially increased due to extracorporeal removal. Hodiamont *et al.* (2022) demonstrated that mean gentamicin clearance ranged from 4.68–6.96 L/h during IHD sessions, approaching clearance values observed in individuals with normal renal function. However, overall daily clearance remains markedly reduced in IHD patients due to minimal clearance between dialysis sessions [1]. Similarly, Pinner *et al.* (2012) observed a mean gentamicin clearance of 132 ± 25 mL/min (7.92 ± 1.5 L/h) during haemodialysis at a mean blood flow rate of 20.16 ± 3.24 L/h [7]. In patients with ESRD receiving IHD, Halouzková *et al.* (2022) described a prolonged gentamicin half-life of approximately 2–3 days during the interdialytic period, with haemodialysis serving as the primary mechanism of drug elimination [2].

B. Factors Affecting the Variability of PK Properties

Hodiamont *et al.* (2022) reported substantial variability in gentamicin clearance during IHD, ranging from 1.1–22.2 L/h [1]. This variability may be attributed to differences in dialyzer characteristics, duration and frequency of dialysis sessions, blood flow rates, small-solute clearance capacity, and patient-specific factors such as residual renal function [2,5,10,11]. In addition, the effectiveness of drug removal during HD may be influenced by technical and clinical factors, including haemodynamic instability requiring premature termination of dialysis sessions, which may result in reduced drug clearance [5,10].

Haemodialysis adequacy is traditionally assessed using Kt/Vurea, which quantifies urea clearance during a dialysis session. However, Kt/Vurea may not accurately predict aminoglycoside removal, as drug clearance is influenced by aminoglycoside-specific pharmacokinetic properties and dialysis-related factors. Sowinski *et al.* (2008) demonstrated that gentamicin clearance during haemodialysis was not associated with Kt/Vurea or urea reduction ratio (URR) [5]. Instead, creatinine dialytic clearance appeared to be a more reliable predictor of gentamicin removal during dialysis. Further studies are required to determine the relationship between dialysis adequacy parameters and AMG clearance to improve individualized dosing strategies in patients undergoing IHD [5,9].

C. Dosing and PK/PD Target Attainment

In patients receiving IHD, AMG dosing remains challenging due to limited clinical data and the absence of universally accepted dosing strategies. Traditionally, gentamicin has been administered after completion of an IHD session, with a loading dose of 2–3 mg/kg followed by subsequent maintenance dosing based on TDM. However, several studies have suggested that administration of higher gentamicin doses prior to IHD may achieve more favourable PK/PD targets by increasing Cmax, maintaining acceptable area under the concentration–time curve (AUC), and reducing pre-dialysis trough concentrations (Cmin) through subsequent extracorporeal removal. This approach aims to optimize concentration-dependent killing by achieving a Cmax/MIC ratio of >8–10 while minimizing toxicity risk [1].

An FDA-approved dosing approach recommends post-dialysis administration, where half of the usual AMG dose is administered during the final hour of haemodialysis without additional dosing during the interdialytic period. However, this regimen was developed before the current understanding of AMG PK/PD principles was established. A potential limitation of this strategy is prolonged exposure to subtherapeutic drug concentrations, which may contribute to the development of adaptive resistance, particularly among *Pseudomonas aeruginosa* [2].

An alternative approach is pre-dialysis dosing, in which the full AMG dose is administered before the haemodialysis

session. This strategy allows achievement of higher Cmax values, thereby enhancing concentration-dependent bactericidal activity, while subsequent haemodialysis facilitates drug removal and reduces systemic exposure. Consequently, pre-dialysis dosing may provide an opportunity to maximize antimicrobial efficacy while limiting toxicity; however, clinical evidence supporting this approach remains limited [2].

In critically ill patients receiving IHD, higher initial doses may be required due to altered PK characteristics, particularly an increased Vd associated with fluid shifts, systemic inflammation, and capillary leak. Veinstein et al. (2013) suggested that gentamicin doses up to 6 mg/kg may be considered in critically ill patients with severe infections to achieve appropriate PK/PD targets, although their evaluation was limited to the initial 48 hours of therapy [12]. Similarly, Bogard *et al.* (2011) recommended higher initial dosing in critically ill patients receiving renal replacement therapy, with gentamicin doses of 5–7 mg/kg and amikacin doses of 15–20 mg/kg to account for increased Vd and ensure adequate early drug exposure [13].

D. Predictors of Efficacy and Toxicity

In patients with ESRD, AMG dosing strategies are primarily focused on achieving adequate antimicrobial exposure while preventing drug accumulation and concentration-related toxicity, as renal elimination is substantially impaired. In critically ill patients undergoing IHD, pre-dialysis administration of gentamicin has been proposed as a strategy to achieve higher peak concentrations while allowing subsequent haemodialysis-mediated drug removal to reduce systemic exposure [12,10]. Conventional gentamicin regimens in patients with normal renal function aim to achieve a Cmax ≥8 mg/L and trough concentration <2 mg/L; however, optimal peak and trough targets in haemodialysis patients remain poorly defined [1,9,14].

Several studies have incorporated exposure-based PK/PD targets, including AUC/MIC ratios, to optimize efficacy and minimize toxicity. An AUC/MIC target range of >140 mg·h/L and <240 mg·h/L has been proposed as a balance between antimicrobial activity and toxicity risk, although further validation in ESRD patients receiving IHD is required [1,2,10]. For amikacin, dosing guidance in IHD patients has suggested targeting peak concentrations of approximately 20 µg/mL while maintaining pre-IHD concentrations below 10 µg/mL to minimize drug accumulation [14]. Heintz *et al.* (2011) reported that gentamicin peak concentrations of 7–10 mg/L prior to haemodialysis were associated with therapeutic exposure, supporting consideration of pre-dialysis dosing strategies in selected patients [15].

IV. Discussions

Existing evidence suggests that high-dose pre-dialysis administration of AMGs may offer PK advantages compared with conventional post-dialysis dosing in selected patients receiving IHD (Refer Table 1 at the end of the manuscript). However, optimizing AMG exposure in this population remains clinically challenging due to substantial alterations in drug clearance resulting from impaired renal function and intermittent extracorporeal drug removal during haemodialysis [1,2].

The Vd of AMGs in haemodialysis patients is generally comparable to that observed in individuals with normal renal function, typically ranging from approximately 12.4–23.1 L; however, considerable inter-individual variability exists [1,2]. Critically ill patients may demonstrate markedly increased Vd due to factors such as fluid resuscitation, capillary leak syndrome associated with septic shock, and hypoalbuminaemia, potentially requiring higher initial doses to achieve adequate serum concentrations [1,13]. Although AMG elimination half-life is substantially prolonged during the interdialytic period due to reduced renal clearance, drug removal during haemodialysis results in increased clearance during the dialysis session itself [2,5].

A key PK consideration in haemodialysis patients is the post-dialysis rebound phenomenon. Following completion of haemodialysis, serum AMG concentrations may increase due to redistribution of drug from peripheral tissues into the central compartment. This occurs because dialytic removal from plasma is more rapid than the transfer of drug from peripheral tissues back into the bloodstream [3,5]. The magnitude of rebound may reach up to 70%, with a reported mean increase of approximately 38.7%, typically occurring within 1.5–3 hours after completion of dialysis [9]. Therefore, appropriate timing of post-dialysis sampling is essential to avoid falsely low drug concentrations and inaccurate dose adjustments [3,5].

Traditional dosing approaches have generally involved reduced-dose administration after haemodialysis or administration during the final phase of the dialysis session to compensate for impaired renal clearance [11,14]. However, this approach may limit the achievement of optimal PK/PD targets for concentration-dependent killing, as restricting doses to prevent accumulation during the prolonged interdialytic period may result in inadequate peak concentrations and failure to consistently achieve the desired Cmax/MIC target [1,10,11]. Furthermore, prolonged low-level drug exposure during the interdialytic period may increase cumulative drug exposure and reduce the drug-free interval required to minimize adaptive bacterial resistance [1,11]. In contrast, administration of AMGs prior to dialysis theoretically allows achievement of higher peak concentrations, thereby enhancing bactericidal activity, while subsequent haemodialysis facilitates drug removal to reduce overall exposure and limit toxicity risk [10,12].

Hodiamont *et al.* (2022) described different gentamicin dosing approaches in patients receiving IHD. For post-dialysis administration, a loading dose of 2–3 mg/kg followed by approximately 1.5 mg/kg after subsequent dialysis sessions has been proposed. Alternatively, when gentamicin is administered prior to IHD, a higher initial dose of 4–6 mg/kg may be considered to achieve adequate peak concentrations while allowing subsequent dialysis-mediated drug removal, with further dose adjustment guided by TDM. In critically ill patients receiving IHD, an initial dose of up to 6 mg/kg prior to dialysis may be required due to altered pharmacokinetic characteristics and increased Vd [1,13].

Pre-dialysis administration represents a PK-guided

approach in which a higher AMG dose (e.g., gentamicin 3.1–6 mg/kg) is administered shortly before or at the initiation of haemodialysis. This strategy aims to replicate the PD benefits of extended-interval dosing used in patients with preserved renal function by achieving high peak concentrations while allowing subsequent haemodialysis to enhance drug elimination. Consequently, this approach may improve Cmax/MIC target attainment, reduce excessive systemic exposure, and provide a longer drug-free interval between treatments [10-12].

Sowinski et al. (2008) evaluated five (5) gentamicin dosing regimens during IHD and concluded that pre-dialysis administration was likely to provide more favourable efficacy and toxicity profiles compared with post-dialysis regimens. Among the evaluated regimens, regimen D, consisting of gentamicin 3.1 mg/kg loading dose followed by 2.75 mg/kg administered one (1) hour before each haemodialysis session, demonstrated the highest proportion of target attainment, with 100% of doses achieving Cmax ≥8 mg/L while maintaining Cmin <2 mg/L and AUC exposure within the proposed therapeutic range (>140 and <240 mg·h/L over 48 hours) [5].

Compared with gentamicin, evidence regarding amikacin dosing in patients receiving IHD remains limited. A recent study involving critically ill patients requiring IHD evaluated amikacin administration of 15–35 mg/kg approximately two (2) hours before dialysis. This strategy achieved Cmax/MIC targets of >8–10; however, drug clearance during the subsequent haemodialysis session was delayed, highlighting the need for individualized dosing and TDM in this population [16].

V. Conclusion

Conventional post-dialysis dosing of gentamicin may be insufficient to consistently achieve optimal PK/PD target attainment (Cmax/MIC ≥8–10) for Gram-negative infections, particularly when organisms have higher MIC values. However, post-dialysis dosing may remain appropriate when gentamicin is used as synergistic therapy in combination with β-lactam antibiotics for selected Gram-positive infections, where lower AMG exposure targets are required.

Although pre-IHD administration offers potential PK advantages by improving peak concentration attainment while allowing subsequent dialysis-mediated drug removal, its practical implementation may be limited by scheduling constraints and the possibility of shortened or interrupted dialysis sessions. Therefore, TDM remains essential to optimize treatment success while minimizing toxicity.

Future research should prioritize well-designed clinical trials evaluating the safety and efficacy of high-dose pre-dialysis AMG administration compared with conventional post-dialysis regimens. Further evidence is required to define long-term safety outcomes, particularly for gentamicin, while data regarding amikacin dosing in patients receiving intermittent haemodialysis remain limited.

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Authors' Contributions

SLA performed the literature search and drafted the manuscript. NLA and SM contributed to the critical revision and editing of the manuscript for important intellectual content. All authors reviewed and approved the final version of the manuscript for publication.

Conflict of Interest

The authors declare that no funding was received for the preparation of this manuscript and that they have no conflicts of interest to disclose. The first author is currently undergoing training under the Malaysia Advanced Clinical Pharmacy Programme (MyACPP) in Clinical Pharmacokinetics.

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TABLE 1: Comparison of published gentamicin and amikacin dosing strategies in patients receiving IHD

Reference	Regimen/dose	Method of dosing in haemodialysis	Efficacy		Conclusion
			Cmax and/or Cmin	AUC	
Teigen *et al.* (2006) [4]	Gentamicin 300 mg, followed by 240 mg, then 220 mg	Pre-dialysis (Immediately before dialysis)	**Cmax (≥ 8 mg/L):** 91–97% achieved	70–92 mg·h/L/48 h	Pre-dialysis dosing achieved suitable peak concentrations (success) and provided higher doses with lower total exposure due to efficient dialysis clearance compared to post-dialysis
	Gentamicin 160 mg, followed by 120 mg, then 120 mg	Post-dialysis	**Cmax (≥ 8 mg/L):** 0–6.1%	76–93 mg·h/L/48 h	
Sowinski *et al.* (2008) [5]	**Regimen A:** Gentamicin 2 mg/kg followed by 1 mg/kg immediately after haemodialysis	Post-dialysis	**Cmax (≥ 8 mg/L):** After 1st dose: 99.8% After 3rd dose: 31.8% **Cmin (< 2 mg/L):** After 1st dose: 7.4% After 3rd dose: 33.6%	**Percentage achieved AUC 140–240 mg·h/L:** 1st dose: 7.4% 3rd dose: 41.2%	Pre-dialysis dosing was likely to be more effective and potentially less toxic than post-dialysis dosing
	Regimen B: Gentamicin 3.5 mg/kg loading dose, followed by 3.5 mg/kg 1 hour before haemodialysis **Regimen C:** Gentamicin 4 mg/kg loading dose, followed by 3 mg/kg 1 hour before haemodialysis **Regimen D:** Gentamicin 3.1mg/kg loading dose, followed by 2.75 mg/kg 1 hour before haemodialysis **Regimen E:** Gentamicin 3 mg/kg loading dose, followed by 3 mg/kg 1 hour before haemodialysis	1 hour before dialysis	**Cmax (≥ 8 mg/L):** After 1st dose: 100% After 3rd dose: 100% **Cmin (< 2 mg/L):** After 1st dose: 30–47.4 % After 3rd dose: 47.4–58.8%	**Percentage achieved AUC 140–240 mg·h /L:** 1st dose: 69.6–70.4% 3rd dose: 49.2–59.6%	
Stacey O'Shea *et al.* (2009) [11]	Gentamicin 3.1 mg/kg loading dose, followed by 2.75 mg/kg 1 hour before haemodialysis	Pre-dialysis	**Cmax:** ≥8 mg/L	70–120 mg·h /L	Pre-dialysis dosing allows administration of higher doses while limiting total exposure, which potentially could improve efficacy and safety
	Gentamicin 300 mg, followed by 240 mg, then 220 mg	Pre-dialysis	**Cmax:** ≥8 mg/L	140–240 mg·h /L/48 h	
Venisse *et al.* (2013) [17]	Gentamicin 6 mg/kg for 2 cycles of haemodialysis	Pre-dialysis (1 hour before dialysis)	**Cmax:** >30 mg/L (mean: 31.8 mg/L) **Cmin:** <2 mg/L or 4.1 mg/L after 24 hours		Pre-dialysis dosing maximized PK/PD benefits by improving efficacy-related exposure indices (Cmax/MIC and AUC/MIC) while reducing toxicity risk, making it a potentially advantageous approach in critically ill patients

Reference	Regimen/dose	Method of dosing in haemodialysis	Efficacy		Conclusion
			Cmax and/or Cmin	AUC	
Veinstein *et al.* (2013) [12]	Gentamicin 6 mg/kg (single high dose)	Administered before haemodialysis, with high-flux haemodialysis started 30 minutes after infusion	**Cmax:** high Cmax (≈30 mg/L), Cmax/MIC ≥10 **Cmin**: subsequent haemodialysis reduced drug exposure and minimized accumulation risk (>2 mg/L was associated with increased toxicity risk)		Optimization of Cmax/MIC target while limiting accumulation risk compared with post-dialysis dosing, supporting its use as a potential approach for critically ill patients receiving IHD
	Gentamicin 1.7 mg/kg	At the end of haemodialysis/post-dialysis	**Cmax:** 8.8 ± 3.1 mcg/mL		Lower peak concentrations and inferior PK/PD endpoints compared to high-dose pre-dialysis administration
Monteforte *et al.* (2015) [18]	**Gentamicin** **Loading dose:** Mild and severe Gram-negative infections 2–3 mg/kg **Maintenance dose**: Mild Gram-negative infections 1–1.5mg/kg Moderate–severe Gram-negative infections 1.5–2mg/kg	After IHD After IHD	**Target pre-dialysis level for re-dosing of gentamicin:** **Mild Gram-negative infections:** < 2 mcg/mL **Moderate–severe Gram-negative infections:** < 3–5 mcg/mL		Subsequent maintenance dosage should be based on pre-dialysis target; monitoring highly recommended for severe infections
	Amikacin For all Gram-negative infections **Loading dose:** 10 mg/kg **Maintenance dose:** 5–7.5 mg/kg	After IHD	Target pre-dialysis level for re-dosing of amikacin < 10 mcg/ml		Subsequent maintenance dosage should be based on pre-dialysis target; monitoring highly recommended for severe infections
Eschenauer *et al.* (2016) [10]	Dialysis every 48 hours: Gentamicin 3 mg/kg	Pre-dialysis	**Cmax:** ±12.1 mcg/mL **Cmin:** 1.3 mcg/mL	**Average 24 hours AUC (over 3 doses):** 73.5 mg·h/L	Pre- and post-dialysis of given doses yielded the same Cmax. However, post-dialysis resulted higher Cmin and higher AUC, reflecting higher risk of toxicity
	Dialysis every 48 hours: Gentamicin 3 mg/kg	Post-dialysis	**Cmax:** ±11.7 mcg/mL **Cmin:** ±1.7 mcg/mL	**Average 24 hours AUC (over 3 doses):** 158.2 mg·h/L	
	Dialysis every 48 hours: Gentamicin 6 mg/kg	Pre-dialysis	**Cmax:** ±21.9mcg/mL **Cmin:** ± 1.9 mcg/mL	**Average 24 hours AUC (over 3 doses):** 123.3 mg·h/L	
	Dialysis every 48 hours: Gentamicin 6 mg/kg	Post-dialysis	**Cmax:** ±23.3 mcg/mL **Cmin:** ± 3.3 mcg/mL	**Average 24 hours AUC (over 3 doses):** 316.4 mg·h/L	
Hodiamont *et al.* (2022) [1]	**Loading dose:** Gentamicin 2–3 mg/kg/dose **Maintenance dose:** Gentamicin 1.5 mg/kg Gentamicin 6 mg/kg	Administered at the end of IHD Administered preceding IHD Administered just before IHD (critically ill patients)	Achieved **Mean Cmax:** 31.8 mg/L **Mean Cmin:** 4.1 mg/L (24 hours after dose	**AUC:** 190 mg·h/L	Pre-dialysis dose of : MIC = 1 mg/L : 2 mg/kg MIC = 2 mg/L : 4 mg/kg MIC = 4 mg/L : 8 mg/kg

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