



Weight-Based Dosing Recommendations for Intravenous Antimicrobials in Obese Adult Patients

As obesity continues to increase in prevalence in the U. S, the optimal dosing of antimicrobials in obese patients continues to be a challenging and growing concern. The FDA has not recognized obese patients as a special population and thus pharmacokinetic studies to determine appropriate dosing is not required in this population. A literature review was conducted to help provide guidance when calculating dosing for weight-based dosing of intravenous antimicrobials in obese patients.

Note: Given the paucity of data, the below recommendations cannot be considered absolute, and cases should be evaluated individually in consultation with Infectious Disease/Antimicrobial Stewardship, incorporating the severity of infection and risk of toxicity.

Recommendation:

Adjusted Body Weight should be utilized when calculating dosing of the following antimicrobials in obese (BMI ≥30) patients. In non-obese patients, Total Body Weight should be utilized to calculate dosing.

1. Voriconazole
2. Daptomycin
3. IV Ganciclovir
4. IV Acyclovir
5. Liposomal Amphotericin B
6. IV Trimethoprim-sulfamethoxazole
7. Foscarnet
8. Colistin (maximum 300 mg total daily dose)
9. Polymyxin B (maximum 200 mg total daily dose)
10. Ribavirin
11. Cidofovir
12. Flucytosine

BMI is automatically calculated in MiChart (Flowsheets tab-> Height/Weight).

BMI can also be calculated using the following equation:

$$BMI = \frac{wt \text{ (in kg)}}{ht \text{ (in m)}^2}$$

$$Ideal \text{ body weight for men (kg)} = 2.3 * (ht \text{ in inches} - 60) + 50$$

$$Ideal \text{ body weight for women (kg)} = 2.3 * (ht \text{ in inches} - 60) + 45.5$$

$$Adjusted \text{ body weight (kg)} = (actual \text{ body weight} - ideal \text{ body weight}) * 0.4 + ideal \text{ body weight}$$

References:

- Polso AK et al. Impact of hospital guideline for weight-based antimicrobial dosing in morbidly obese adults and comprehensive literature review. [J Clin Pharm Ther 2014;39:584- 608.](#)
- Turner RB et al. Prospective, Controlled Study of Acyclovir Pharmacokinetics in Obese Patients. [Antimicrob Agents Chemother 2016;60:1830- 1833.](#)

Antimicrobial Subcommittee Approval: 10/2019	Originated: 11/2016
P&T Approval: 11/2019	Last Revised: 08/2021
Revision History: 10/19: Added ribavirin and cidofovir 08/21: Added flucytosine	

The recommendations in this guide are meant to serve as treatment guidelines for use at Michigan Medicine facilities. If you are an individual experiencing a medical emergency, call 911 immediately. These guidelines should not replace a provider's professional medical advice based on clinical judgment, or be used in lieu of an Infectious Diseases consultation when necessary. As a result of ongoing research, practice guidelines may from time to time change. The authors of these guidelines have made all attempts to ensure the accuracy based on current information, however, due to ongoing research, users of these guidelines are strongly encouraged to confirm the information contained within them through an independent source.