Adviesdosering antibiotica bij de obese patiënt

Definities	Hoe te meten/berekenen	Voorbeeld: patiënt van 170 cm, 160 kg	Reden / achterliggende gedachte:
Werkelijk lichaamsgewicht (WLG)	Werkelijk lichaamsgewicht	160 kg	Oplaaddosering voorsommige lipofiele geneesmiddelen
Aangepast lichaamsgewicht (ALG)	ILG + 0,4*(WLG-ILG)	68 + 0,4*(160-68) = 105 kg	Onderhoudsdosering van geneesmiddelen waarvan de klaring is veranderd bij obesitas
Ideaal lichaamsgewicht (ILG)	Man: 50 kg + 0,9 *aantal cm > 150 cm Vrouw: 45 kg + 0,9 * aantal cm > 150 cm (zie ook grafiek)	50 + 0,9 * 20 = 68 kg	Onderhoudsdosering van geneesmiddelen waarvan de klaring niet is veranderd bij obesitas

Geneesmiddel	Adviesdosering	Bron
Aciclovir	Ideaal lichaamsgewicht	Wurtz et al, Antimicrobial dosing in obese patients, Clin Infect Dis 1997;25:112-118 Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608. Based on recommendations from the manufacturers prescribing information as well as the limited literature, weight-based treatment dosing of acyclovir should be based on IBW. UMHS: use IBW when calculating dose (BMI > 30 kg/m2) Product Information: ZOVIRAX(R) IV injection, acyclovir sodium IV injection. GlaxoSmithKline, Research Triangle Park, NC, 2003 [via Drugdex Micromedex] UpToDate: Acyclovis (systemic): Drug information: Dosing: Obesity: In obese patient, acyclovir IV has been dosed using ideal body weight to avoid overdosing and subsequent toxicity. Gantz's manual of clinical problems in infectious disease. 2013. p. 458 Weight bases drugs: Ideal body weight: Acyclovir
Liposomaal! amfotericine B	Werkelijk lichaamsgewicht	Wurtz et al, Antimicrobial dosing in obese patients, Clin Infect Dis 1997;25:112-118 Amphotericin is a highly lipophilic drug and traditionally been dosed on a weight basis, with doses ranging from 0.5 to 1.5 mg/kg, depending on the severity of the infection. There is a single case report of an obese patient with nonmeningeal cryptococcal infection successfully treated Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608. no published literature in humans; Ideal body weight should be used to dose obese patients. Use of IBW or AdjBW could be considered when determining doses for morbidly obese patients depending on the indication for use. More aggressive dosing could be warranted in certain situations, and the limitations of utilizing animal data for human dosing recommendations should be acknowledged. UKCPA: Drug Dosing in Extremes of Body Weight in critically ill patients 1st Edition 09-2013 Obese patients: dosing on actual body weight, suggest monitoring for toxicity in obese patients. Payne KD et al. Expert Rev Anti Infect Ther. 2016;14(2):257-67. AdjBW or TBW dosing could be used for liposomal amphothericin B, depending on the severity of the infection. No dosing alterations are recommended for amphotericin B formulations at this time.
Amikacine	Patiënten waarbij het werkelijke lichaamsgewicht (WLG) >25% groter is dan het ideale lichaamsgewicht (ILG): Doseren op basis van: Aangepast lichaamsgewicht, daarna op geleide spiegels	Bauer LA et al; Am J Hosp Pharm 1980;37:519-522 Bauer LA et al; Eur J Clin Pharmacol 1983;24:643-647 Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608: results largely support the use of AdjBW when dosing aminoglycosides in obesity UpToDate: Amikacin (systemic): drug information: Dosing: Obesity: In moderate obesity or greater, initial dosage requirement may de estimated using a dosing weight of IBW + 0.4 (TBW – IBW) Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Use AdjBW for initial dose, adjust by TDM Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Current recommendations suggest that both AdjBW may be the most appropriate dosing weights for aminoglycosides.
Amoxicilline	Bovengrens van dosering	UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Consider upper limit of normal dosing in severe infections.
Amoxicilline / clavulaanzuur	Bovengrens van dosering	UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate
Benzylpenicilline	Bovengrens van dosering	UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate
Cefazoline	(bij profylaxe) Normale dosis van 2 gram Patiënten met BMI >40 / lich. gewicht. >120 kg: (bij profylaxe) Dosis van 3 gram Indien een vervolgdosis gegeven moet worden: - Verwachte resterende operatieduur ≤3 uur: 2 gram - Verwachte resterende operatieduur >3 uur: 3 gram	Up to date: Antimicrobial prophylaxis for prevention of surgical site infection in adults There are limited data for determining the optimal approach to antimicrobial dosing for obese patients. Two small studies noted administration of 1 or 2 g of cefazolin may not be sufficient for tissue concentrations exceeding the MIC for common pathogens. Doubling the normal dose of cephalosporins may overcome this problem, with relatively low cost and favorable safety profile. The 2013 guidelines developed by the American Society of Health-System Pharmacists that recommend administration of a minimum 2 g dose and administration of 3 g for patients ≥120 kg. Swab richtlijn perioperatieve profylaxe lichaamsgewicht heeft invloed op de farmacokinetiek van cefazoline. Het verdelingsvolume van cefazoline neemt toe met het lichaamsgewicht terwijl de mate van distributie vanuit de bloedbaan naar subcutaan weefsel afneemt met lichaamsgewicht. Dit heeft als consequentie dat bij patiënten met obesitas rekening gehouden moet worden met lagere effectieve concentraties cefazoline. Een simulatiestudie op basis van een farmacokinetisch model van cefazoline toont dat uitgaande van een eenmalige dosis van 2 gram en een target MIC (S. aureus) van 2 mg/L de waarschijnlijkheid dat de cefazoline concentratie in het subcutane weefsel tot 240 minuten na toediening boven dit target blijft 100% is voor patiënten zonder obesitas en 96% voor patiënten met een BMI van 40 of hoger (3). Op basis hiervan is het advies om patiënten met een BMI > 40 geen 2 maar 3 gram cefazoline toe te dienen als profylaxe. Indien de wond nog niet gesloten is 4 uur na toediening van cefazoline volstaat een vervolgdosis van 2 gram indien de verwachte resterende operatieduur 3 uur of minder is. Is deze verwachting er niet, dan luidt het advies een vervolgdosis te geven van wederom 3 gram cefazoline. Blum S et al. Surg Infect (Larchmt). 2019 May 21. There is no dose-dependent or duration of exposure effect on resistance with one or two pre-operative or intra-operative doses. Well-done PK-based studies in obese patients clearly demonstrate the lack of benefit of using a 3-g dose or intra-operative re-dosing and show no incremental increase in adipose tissue concentrations with high doses. From an ASP point of view, antibiotic dosing recommendations should be reviewed and revised on the basis of PK principles that indicate that weight-based dosing has no basis for pre-operative prophylaxis in obese patients. Hussain Z et al. Clin Drug Investig. 2018 Aug;38(8):673-693.

		Four studies (one randomised and three case control) examined the effect of obesity on cefazolin dosing and the associated incidence of SSIs. Similarly, two case control studies evaluating different cefazolin doses found a similar SSI incidence in obese patients following the administration of 2-g and 3-g doses of cefazolin. The standard 2-g dose of cefazolin appeared effective in the prevention of surgical site infection (recommendation grade: B). – in patiënten met een BMI van ≥35 / lich. Gewicht >100 kg
Cefotaxim	Bovengrens van dosering	Yost et al, Ther Drug Monit, 1986; 8(2) 189-94 UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate NHS Q&A How should antibiotics be dosed in obesity? Higher doses may be required for surgical prophylaxis in obese patients, but it is difficult to make absolute dosing recommendations. One review (Erstad) and UKCPA guidance suggest dosing for cephalosporins in critically ill obese patients should be at the upper end of the recommended treatment ranges.
Ceftazidim	Bovengrens van dosering	Georges et al, Antimicrob Agents Chemoth 2009 october; 53(10): 4483-4489 UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate NHS Q&A How should antibiotics be dosed in obesity? Higher doses may be required for surgical prophylaxis in obese patients, but it is difficult to make absolute dosing recommendations. One review (Erstad) and UKCPA guidance suggest dosing for cephalosporins in critically ill obese patients should be at the upper end of the recommended treatment ranges. Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Dosing in the upper end of the normal dosing range would be reasonable in severe and/or deep seated infections. Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Dosing should be on the upper end of recommended doses or the highest effective dose safely administered with minimal side effects.
Ceftriaxon	Bovengrens van dosering	Erstad BL. Dosing of medications in morbidly obese patients in the intensive care unit setting. Intensive Care Med 2004; 30: 18-32. NHS Q&A How should antibiotics be dosed in obesity? Higher doses may be required for surgical prophylaxis in obese patients, but it is difficult to make absolute dosing recommendations. One review (Erstad) and UKCPA guidance suggest dosing for cephalosporins in critically ill obese patients should be at the upper end of the recommended treatment ranges. upper end of the recommended treatment ranges, taking into account the patient's renal and hepatic function UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Max dose should be considered in morbidly obese patients.
Cefuroxim	Bovengrens van dosering	UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate NHS Q&A How should antibiotics be dosed in obesity? Higher doses may be required for surgical prophylaxis in obese patients, but it is difficult to make absolute dosing recommendations. One review (Erstad) and UKCPA guidance suggest dosing for cephalosporins in critically ill obese patients should be at the upper end of the recommended treatment ranges. Payne KD et al. Expert Rev Anti Infect Ther. 2014 Jul;12(7):829-54. Obese patients receiving cefuroxime 1.5g prior to gastric bypass, colectomy of gastric banding had an elevated half-life and an increased Vd. Pilot study found insufficient cefuroxime tissue concentrations to maintain therapeutic T>MIC in obese individuals.
Ciprofloxacine	Bovengrens dosering	Allard et al; Clin Pharm Therap 1993; 54:368-373 Hollenstein et al; Inter J Obesity & Related Met Dis 2001;25:354-358 Caldwel et al; Ann Pharmacother 1994;28:806 NHS Q&A How should antibiotics be dosed in obesity? No specific advice provided. Conflicting data regarding pharmacokinetics in obesity. Doses of 800mg IV/ 12 hours have been used in severe morbid obesity. Pai M et al. Pharmacotherapy 2007 Aug;27(8):1081-91. A case report in which this 45% adjustment was used reported adequate concentrations in a patient weighing 250 kg who received ciprofloxacin 800 mg twice/day. High doses should be given to improve tissue concentrations in obesity, even though it would require higher plasma concentrations than whose observed in normal-weight patients. Optimal dosing of fluoroquinolones is difficult to ascertain. Higher dose regimes may be prudent in obese patients. Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Consider upper limit of normal dosing in severe infections. Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Doses higher than recommended should be considered in morbidly obese patients to ensure adequate tissue penetration. Recent case reports suggest microbiological success using dosing of ciprofloxacin 800 mg every 12 h.
Clindamycine	Bovengrens van dosering	NHS Q&A How should antibiotics be dosed in obesity? Preliminary evidence suggests higher doses required Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Dosing in the upper end of the normal dosing range would be reasonable in severe and/or deep seated infections. Smith MJ et al. Antimicrob Agents Chemother. 2017 Mar 24;61(4). Our findings support TBW-based dosing of clindamycin for obese and nonobese children.
Colistine	Ideaal lichaamsgewicht	Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608: limited data comparing pharmacokinetics of colistimethate in obese vs. normal-weight patients. Multiple studies demonstrate significant risk of nephrotoxicity with colistimethate in obese patients, and dosing based on IBW or AdjBW may be prudent, with infection severity driving the decision on a case-by-case basis UMHS: use IBW when calculating dose (BMI > 30 kg/m2) UpToDate: Colistin (colistimethate): Drug information: Dosing: Obesity: Doses should be based on ideal body weight in obese patients. Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Use IBW
Doxycycline	Aangepast lichaamsgewicht	Geen adjusted dosing info in Drugdex (micromedex) gevonden.
Erytromycine	Ideaal lichaamsgewicht	Wurtz et al, Antimicrobial dosing in obese patients, Clin Infect Dis 1997;25:112-118 Prince et al. (J Clin Pharmacol 1984) administered 250 mg of oral erythromycin base to seven obese adults, weighing an average of 157.7 kg, prior to bariatric surgery [64]. This dose resulted in a mean peak concentration of 1.04 mg/mL, a peak concentration similar to that in nonobese adults [82].
Feneticilline	Bovengrens van dosering	UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate
Flucloxacilline	Bovengrens van dosering	UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic

		Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate
Fluconazol	Werkelijk lichaamsgewicht	Cohen et al, Pharmacotherapy 1997; 17:1023-1026 Payne KD et al. Expert Rev Anti Infect Ther. 2016;14(2):257-67. Fluconazol should be dosed based on TBW to achieve the AUC/MIC ratios that have previously been associated with favorable responses.
Flucytosine	Werkelijk lichaamsgewicht, daarna op geleide spiegels	Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608. The use of ABW for flucytosine dosing in obese patients in the absence of robust clinical data may be prudent – given its Vd – for initial dosing of life-threatening fungal infections, but therapeutic drug monitoring and individualized dosing are highly recommended. For non-life-threatening infections, doses based on IBW may be sufficient.
Ganciclovir	Aangepast lichaamsgewicht ILG + 0,45 (WLG-ILG)	Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608. UMHS: use AdjBW when calculating dose (BMI > 35 kg/m2) (Recommendations are based on pharmacologic of pharmacokinetic data, and there are no published clinical studies at the time of this review. Patients should be monitored closely for clinical response and toxicity. Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Weight-based drug recommentadions for ganciclovir is AdjBW
Gentamicine	Patiënten waarbij het werkelijke lichaamsgewicht (WLG) >25% groter is dan het ideale lichaamsgewicht (ILG): Doseren op basis van: Aangepast lichaamsgewicht, daarna op geleide spiegels	Bauer et al; Eur J Clin Pharmacol 1983;24:643-647 Schwartz et al; J Infect Dis 1978;138;499-505 Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608: results largely support the use of AdjBW when dosing aminoglycosides in obesity UpToDate: Gentamicin (systemic): drug information: Dosing: Obesity: In moderate obesity or greater, initial dosage requirement may de estimated using a dosing weight of IBW + 0.4 (TBW – IBW) (=ALG) Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Use AdjBW for initial dose, adjust by TDM Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Current recommendations suggest that both AdjBW may be the most appropriate dosing weights for aminoglycosides. Smit C et al. Clin Pharmacokinet. 2019 Apr 24. Practical dose nomogram. Alternatief: 5-6 mg/kg AdjBW. AdjBW based dose regimens show trends towards a lower exposure with increasing body weight.
Meropenem	Bovengrens van dosering Minimale infusietijd: 3 uur/gift	NHS Q&A How should antibiotics be dosed in obesity? Lower concentrations found in obese patients. Case reports have reported successful outcomes with high dose continuous infusions The pharmacokinetics of meropenem have shown to be altered in obese patients (Pai et al. pharmacotherapy 2007; 27: 1081-1091; Chung CE et al. CPT 2013 93 Suppl.1 (S22). Abstract only) Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Extended infusions may be considered for meropenem in certain scenarios. Consider prolonged infusion for critically ill patients. Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Case reports have shown efficacy with higher dosing or extended infusions. Tucker CE. Dosing should be on the upper end of recommended doses or the highest effective dose safely administered with minimal side effects. Chung EK et al. J Clin Pharmacol 2017 Mar;57(3):356-368. Meropenem pharmacokinetics are comparable among nonobese, obese and morbidly obese patients. Standard dosing regimens provide adequate exposures for susceptible pathogens at 40% and 54% fT>MIC, but prolonged infusions of lagers doses are needed for adequate exposures at 100% fT>MIC. Dosage adjustments based solely on body weight are unnecessary. Srinicas NE. Am J Ther 2018 Mar/Apr;25(2):e224-246. Using the data, it was established that owing to similarities in the pharmacokinetic profile of meropenem between nonobese and morbidly obese subjects, there was no need for dose titration studies in morbidly obese patients because the standard dosing schedules of meropenem were able to provide adequate pharmacodynamics endpoint for sensitive bacterial pathogens. However, if the infection is suspected to be due to resisitant or less susceptible strains of pathogens, the option of either continuous infusion or higher dose meropenem could be explored. Dosing strategy in morbidly obese patients. Drug: meropenem, dosage adjustment: No, Terategy/remarks: Generally threshold levels seem to be adequate.
Metronidazol *	Aangepast lichaamsgewicht	IUKCPA: Drug Dosing in Extremes of Body Weight in critically ill patients 1st Edition 09-2013 Obese patients: use standard dose
Moxifloxacine	Bovengrens van dosering	Kees MG, Pharmacokinetics of moxifloxacin in plasma and tissue of morbidly obese patients. J Antimicrob Chemother 2011; 66:2330-2335. Janson B and Thursky K. Dosing of antibiotics in obesity. Curr Opin Infect Dis. 2012;25(6):634-49
Piperacilline	Bovengrens van dosering	UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic Limited data for cephalosporins and penicillins suggest that doses at the upper end of recommended ranges (ideal body weight [IBW] based) are appropriate Alobaid AS. Antimicrob Agents Chemother. 2017 Feb 23;61(3). Piperacillin pharmacokinetics are altered in the presence of obesity and critical illness. As with nonobese patients, prolonged infusions increases the likelihood of achieving therapeutic concentrations.
Rifampicine	Geen aanpassing	Hall RG. Curr Pharm Des. 2015;21(32):4748-51. Multiple studies suggest the use of total body weight based dosing for rifampicin.
Tobramycine	Patiënten waarbij het werkelijke lichaamsgewicht (WLG) >25% groter is dan het ideale lichaamsgewicht (ILG): Doseren op basis van: Aangepast lichaamsgewicht, daarna op geleide spiegels	Bauer et al; Eur J Clin Pharmacol 1983;24:643-647 Schwartz et al; J Infect Dis 1978;138;499-505 Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608: Dosing recommendations are provided in the tobramycin prescribing information, which recommends use of AdjBW when calculating a dosing regimen. Product information tobramycine CF 40 mg/ml, injectievloeistof De juiste dosering kan berekend worden door de geschatte vetvrije lichaamsmassa van de patiënt te vermeerderen met 40% van het overgewicht als basis om de dosering in mg/kg te berekenen. UpToDate: Tobramycin (systemic): drug information: Dosing: Obesity: In moderate obesity or greater, initial dosage requirement may de estimated using a dosing weight of IBW + 0.4 (TBW – IBW) (=ALG) Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Use AdjBW for initial dose, adjust by TDM Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Current recommendations suggest that both AdjBW may be the most appropriate dosing weights for aminoglycosides.
Trimethoprim/ Sulfamethoxazol	Aangepast lichaamsgewicht, daarna op geleide spiegels	Sulfamethoxazol: Vd 20 L; trimetoprim: goede weefselpenetratie Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608. Sulfamethoxazole/trimethoprim pharmacokinetics in obesity have not been examined in human studies; decisions regarding dosing should be made on a case-by-case basis. UMHS: use AdjBW when calculating dose (BMI > 35 kg/m2) Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Consider AdjBW when using high doses.

		Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Weight-based drug recommentadions trimethoprim-sulfamethoxaxzole is AdjBW.
Vancomycine	Intermitterend toediening: dosering niet aanpassen Continue: werkelijk lichaamsgewicht, daarna op geleide spiegels (meteen spiegels meten, na 1 dag)	Blouin et al Antimicrob Agents Chemother 1982;21:575-580 Results implied that TBW should be used to calculate vancomycin doses for morbidly obese patients. Bauer et al; Eur J Clin Pharmacol 1995; 54:621-625 Doses required to achieve desired vancomycin concentrations are similar in morbidly obese and normal weight patients when TBW is used as a dosing weight for the obese. Shorter dosage intervals may be needed when dosing morbidly obese patients so that steady-state trough concentrations remain above 5 microg x ml(-1) in this population. Because of the large amount of variation in required doses, vancomycin serum concentrations should be obtained in morbidly obese patients to ensure that adequate doses are being administered Vance-Bryan et al; Antimicrob Agents Chemother 1993; 37:436-40 On the basis of these data, ABW (actual body weight) appears to be superior to LBW for calculating initial dose requirements for vancomycin. Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608: Dosing vancomycin based on ABW (actual body weight) is likely appropriate for initial dosing recommendations followed by therapeutic drug concentration monitoring, but obese patients may have reduced clearance and therapeutic drug monitoring of vancomycin trough levels is encouraged. Micromedex: Use actual body weight, adjustments on serum conc. UptoDate, Bariatric surgery: Intensive care unit management of the complicated postoperative patient – medication dosing – antibiotic The initial empiric dose of vancomycin should be based on true body weight. To attain rapid therapeutic concentration, a loading dose of vancomycin is suggested and maintenance dose divided every eight or six hours, rather than a standard every 12-hours regimen. Tucker CE. Clin Obes. 2014 Dec;4(6):287-95. Based on the pharmacokinetic alterations it is reasonable to base loading doses on TBW in patients without renal dysfunction. Maintenance dosing interval should be based on creatinine clearance calculated with AdjBW. Payne KD et al. Expert Rev Anti Infect Ther. 2014 Jul;12(7):829-54. Multiple studies have concluded TBW is the optimal weight-based dosing strategy for vancomycin. Based upon the preponderance of the current data, current consensus guidelines recommend dosing vancomycin based on TBW, with a maximum of 2 g per dose prior to adjustment with TDM. Srinicas NE. Am J Ther 2018 Mar/Apr;25(2):e224-246. The data from this population modeling and simulation analysis suggested that extreme obese patients would nees a higher dose of vancomycin and the determination of the initial dose of vancomycin should be made by both total body weight and renal function considerations. Although, adjusted body weight was also tried for correlations with pharmacokinetic parameters, TBW seemed to be better correlated. Srinicas NE. Am J Ther 2018 Mar/Apr;25(2):e224-246. Dosing strategy in morbidly obese patients. Drug: vancomycin, dosage adjustment: Yes, Terategy/remarks: TBW.
Voriconazol	Aangepast lichaamsgewicht, daarna op geleide spiegels	Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608. There is a stong association with increased voriconazole concentrations in obese patients receiving ABW (actual body weight) dosing. Empiric dosing based on AdjBW or IBW should be considered; however adjustments should be made on a case by case basis depending on infection severity and early therapeutic drug concentration monitoring is recommended. UMHS: use AdjBW when calculating dose (BMI > 35 kg/m2) UpToDate: Voriconazole: Drug information: Dosing: Obesity: Use ideal body weight for most obese patients in weight-based dosing calculations; consider using an adjusted body weight in obese patients with life-threatening invasive fungal infections. Meng L et al; Pharmacotherapy 2017 Nov;37(11):1415-1432. Use AdjBW for initial dose, adjust by TDM Richards PG. J Antimicrob Chemother. 2017 Apr 1;72(4):1178-1183 Adjusted body weight dosing in obese patients resulted in a similar maintenance dose to total body weight dosing in the non-obese, and appears to be a sensible dosing strategy for these patients. Eljaaly K et al. Clin Infect Dis 2016 Jul 15;63(2):286-7 Based on these data, we recommend dosing voriconazole using IBW in most obese patients. In patients with life-threatening invasive fungal infection, more aggressive doses based on AdjBW could be used (AdjBW = 0.4 (TBW − IBW) + IBW) [2, 3]. However, therapeutic drug monitoring should be considered to confirm dosing. Davies-Vorbrodt S et al. Pharmacotherapy 2013 Jan;33(1):22-30. Standard voriconazole dosing using actual body weight in obese and overweight patients resulted in higher associated serum concentrations. Dosing using adjusted body weight mat be necessary in this population in order to achieve optimal concentrations while preventing the potential for increased toxicity.

* Geen literatuur over beschikbaar

Links van veel gebruikte bronnen:

NHS Q&A How should antibiotics be dosed in obesity?
Link: http://www.medicinesresources.nhs.uk/GetDocument.aspx?pageId=784955

Impact of hospital guideline for weight-based antimicrobial dosing in morbidly obese adults and comprehensive literature review. Polso et al, J Clin Pharm Ther. 2014 Dec;39(6):584-608:
Link: http://www.ncbi.nlm.nih.gov/pubmed/25203631

Antimicrobial dosing in obese patients, Wurtz et al, Clin Infect Dis 1997;25:112-118
Link: http://cid.oxfordjournals.org/content/25/1/112.full.pdf+html

Dosing of medications in morbidly obese patients in the intensive care unit setting. Erstad BL. Intensive Care Med 2004; 30:18.
Link: http://www.ncbi.nlm.nih.gov/pubmed/14625670

UKCPA: Drug Dosing in Extremes of Body Weight in critically ill patients 1st Edition 09-2013
Link: http://www.scottishintensivecare.org.uk/uploads/2014-07-24-19-55-33-Drugdosingatextremesofbod-45662.pdf