แนวทางการปรับขนาดยาในผู้ป่วยโรคไต

ปี 2564

แนวทางการปรับขนาดยาในผู้ป่วยโรคไต รพ.ควนเนียง 2564

<table>
<tr><th rowspan="2">Drug</th><th rowspan="2">Normal dose</th><th colspan="6">Dosing recommendation</th></tr>
<tr><th>5
≤14</th><th>4
15-29</th><th>3b
30-44</th><th>3a
45-59</th><th>2
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≥90</th></tr>
<tr><td>Acyclovir</td><td>200, 800 mg oral 5 times daily</td><td>200, 800 mg q 12 hr</td><td>200, 800 mg q 8 hr</td><td colspan="4">200, 800 mg oral 5 times daily</td></tr>
<tr><td>Allopurinol</td><td>2-3 times daily (max 800 mg/day)</td><td>50 mg/day</td><td>100mg/day</td><td colspan="4">max 800 mg/day</td></tr>
<tr><td>Amikacin</td><td>15 – 20 mg/kg q 24 hr</td><td colspan="2">not recommended</td><td>15 mg/kg q 48 hr</td><td>15 mg/kg q 36 hr</td><td colspan="2">15 – 20 mg/kg q 24 hr</td></tr>
<tr><td>Amlodipine</td><td>2.5 - 10 mg/day Max dose 10 mg</td><td colspan="6">No adjustment required</td></tr>
<tr><td>Amoxicillin + clavulanic</td><td>875 mg q 12 hr</td><td>Usual dose q 24 hr</td><td>Usual dose q 12 hr</td><td colspan="4">no dosage adjustment required</td></tr>
<tr><td>Ampicillin</td><td>1-2 g IV/IM q 4-6 hr
(max12 g/day)</td><td>q 12-24 hr</td><td>q 6-12 hr</td><td colspan="4">q 6 hr</td></tr>
<tr><td>Aspirin</td><td></td><td>not recommended</td><td colspan="5">No adjustment required</td></tr>
<tr><td>Benzathine + benzylpenicillin (Penicillin G)</td><td>1.2-2.4 million units
IM at 1-week
intervals</td><td>20-50%</td><td colspan="2">75%</td><td colspan="3">no dosage adjustment required.</td></tr>
<tr><td>Benzylpenicillin (Penicillin G sodium)</td><td>1-24 million units/day IV/IM
divided doses q 4-6 hr</td><td>Full loading dose IV/IM, followed 1/2 loading dose q 8-10 hr</td><td colspan="5">full loading dose IV/IM, followed 50% loading dose q 4-5 hr</td></tr>
<tr><td>Carvedilol</td><td>6.25 mg twice daily increase to 25 mg</td><td colspan="6">no dosage adjustment required.</td></tr>
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		5	4	3b	3a	2	1
		≤14	15-29	30-44	45-59	60-89	≥90
Captopril	12.5 – 150 mg/day Max dose 450 mg	Initial dose should be reduced; titration should be in smaller increments.					
Cephalexin	250-1000 mg oral q 6 hr or 500 mg q 12 hr (max 4 g/day)	CrCl 5-14: 250 q 24 hr CrCl 1-4: 250 mg q 48-60 hr	250 mg q 8-12 hr	no dosage adjustment necessary, do not exceed 1,000 mg/day.		no dosage adjustment required.	
Ceftazidime	0.5-2 g IV q 8 hr	CrCl 6-15: 500 mg q 24 hr CrCl < 5: 500 mg q 48 hr	1 g q 24 hr	1 g q 12 hr		no dosage adjustment required.	
Ceftriaxone	0.5-2 g IV q 24 hr MAX 4 g/day	no dosage adjustments provided in the manufacturer's labeling, in patients with concurrent renal and hepatic impairment, max daily dose should not exceed 2 g					
Ciprofloxacin	500-750 mg oral q 12 hr	250-500 mg oral q 18 hr		250-500 mg oral q 12 hr	no dosage adjustment required.		
Colchicine	**gout prophylaxis**:0.6 mg oral once or twice daily (max 1.2 mg/day)	initiate therapy with 0.3 mg/day, adequately monitor with any dose increase		no adjustment required, but monitor closely for toxicity			
	gout flare treatment: 1.2 mg oral at the first sign of a flare followed by 0.6 mg one hr later (max 1.8 mg over 1 hr)	no dosage adjustment require., but do not repeat treatment course more often than once q 2 weeks		no adjustment required, but monitor closely for toxicity			

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Dapsone	25-100 mg oral OD	no dosage adjustment required.					
Diclofenac	37.5 mg IV q 6 hr as needed (max 150 mg daily)	IV formulation contraindicated	IV formulation not recommended				
Digoxin	loading dose: 0.25 mg IV q 2 hr up to 1.5 mg,	reduce dose by 50%	N/A				
	maintenance dose: 0.125-0.375 mg IV daily	0.0625 mg q 48 hr (10-25% q 48 hr)	0.0625 mg q 24-36 hr (25-75% q 24-36 hr)		no dosage adjustment required.		
Doxazosin	1-16 mg/day	No adjustment required					
Enalapril	• heart failure: initial, 2.5 mg oral twice daily; maintenance, 2.5 -20 mg twice daily, (max 40 mg)	2.5 mg/day; titrated upward until blood pressure is controlled.	no dosage adjustment required.				
	• hypertension:initial, 5 mg orally OD, maintenance, 10-40 mg oral OD or in 2 divided doses (max 40 mg/day)						
Fluconazole	150 mg oral/IV once or loading dose 200-800 mg, maintenance: 200-800 mg OD	no adjustment for vaginal candidiasis single-dose therapy					
		multiple dosing in adults, administer loading dose of 50-400 mg, then adjust daily doses as follows					
		50%			100%		
Furosemide	max 1500-2000 mg IV	up to 3200 mg/day (Large doses should be administered at a rate < 500 mg/hr) have been used in patients with severe renal failure. Scr > 5: administration rate < 4 mg/min when using high dose avoid use in oliguric states					

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Gabapentin	Neuropathic pain, Postherpetic neuralgia : 300- 3,600 (Titrated as need for pain)	reduce daily dose in proportion to CrCl based on dose for creatinine clearance of 15 mL/min (eg, reduce dose by one-half [range: 50 to 150 mg/day] for CrCl 7.5 mL/minute)	200-700 mg OD	200-700 mg twice daily		300-1,200 mg 3 times daily	
Gemfibrozil	600 mg oral twice daily 30 min before meals	use is contraindicated		no dosage adjustments provided in the manufacturer's labeling; use with caution			
Gentamicin	4–7 mg/kg q 24 hr	not recommended		4–7 mg/kg q 48 hr	4–7 mg/kg q 36 hr	4–7 mg/kg q 24 hr	
Glipizide	2.5 – 20/40 mg/day	No adjustment required					
HCTZ	12.5 - 25 mg/day Max dose 100 mg	Use is contraindicated	Not effective	No adjustment required			
Hydralazine	25-50mg/dose q 8 hr	Increase dosing interval to every 8-16 hr.				No adjustment required	
Ibuprofen	MAX dose 3,200 mg/day	not recommended		No specific recommendations are available; ibuprofen is eliminated in the urine			
Insulin	TDD 0.3-0.5 Unit/kg/day	No adjustment required					

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Lamivudine	HIV-1 infection: 150 mg twice daily or 300 mg OD	• CrCl 5-14: 150 mg first dose, then 50 mg OD • CrCl < 5: 50 mg first dose, then 25 mg OD	150 mg first dose, then 100 mg OD	150 mg OD	no dosage adjustment required.		
	Type B viral hepatitis: 100 mg OD	• CrCl 5-14: 35 mg first dose, then 15 mg OD • CrCl < 5: 35 mg first dose, then 10 mg OD	100 mg first dose, then 25 mg OD	100 mg first dose, then 50 mg OD	No adjustment required		
Lithium carbonate	600-1800 mg/d divided 2-3 doses	25-50%	50-75%		100%		
Loratadine	10 mg oral OD	q 48 hr			q 24-48 hr	q 24 hr	
Magnesium sulfate	1-4 g IV.administer at ≤1 g/hr	• severe impairment: max dose of magnesium sulfate is 20 g/48 hr (2 g/48 hr elemental magnesium) • hypomagnesemia: renal dysfunction: reduce dose by 50% Use with caution, close monitoring is required. • Pre-eclampsia/eclampsia: severe renal impairment: do not exceed 20 g during a 48 hour period.					
Metformin	50 – 2500/ 2550 mg/day	eGFR < 30 • Use is contraindicated • after initiation: Discontinue treatment		eGFR 30 - 45 • Use not recommended • after initiation: Assess benefits and risks of continuing treatment	Max dose 2000 mg	Max dose 2550 mg	

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Metoclopramide	10-20 mg IV q 4-6 hr	50% off normal dose			No adjustment required		
Metoprolol	100 - 400 mg/day	No adjustment required					
Metronidazole	500 mg q 6-8 hr (max: 4 g/day)	end-stage renal disease requiring dialysis: metabolites may accumulate; monitor for adverse events.	renal impairment: no dosage adjustments provided in the manufacturer's labeling -				
Midazolam		50%	no dosage adjustments provided in manufacturer's labeling				
Morphine sulfate	opioid naive: 2.5-5 mg IV q 3-4 hr	eGFR < 20mL/min: Use small doses and extended dosing intervals Titrate according to response		eGFR 20-50mL/min: 75% of normal dose			
Naproxen		Use is not recommended		Initiate treatment at the lowest end of the dosing range and when higher doses are indicated, a dose adjustment may be necessary			
Norfloxacin	400 mg orally twice daily	400 mg once a day		No adjustment required			
Omeprazole	20-40 mg q 12-24 hr	No adjustment required					
Oseltamivir	treatment of influenza: 75 mg oral twice daily for 5 days; higher doses	use not recommended	30 mg once daily for 5 days	30 mg twice daily for 5 days		No adjustment required	
	prophylaxis of influenza: 75 mg oral OD for 7-10 days	use not recommended	30 mg every other day	30 mg OD		No adjustment required	

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Paracetamol	• BW < 50: 15 mg/kg q 6 hr or 12.5 mg/kg q 4 hr; max single dose: 15 mg/kg/dose; max daily dose: 75 mg/kg/day • BW ≥50: 650 mg q 4 hr or 1000 mg q 6 hr; max single dose: 1000 mg/dose (max daily dose: 4 g daily)	use with caution, consider decreasing daily dose and extending dosing interval		No adjustment required			
Pethidine		50% of the normal dose	75% of the normal dose			100%	
Phenobarbital		q 12-16 hr	No adjustment required				
Phenytoin	loading dose 10-15 mg/kg IV, maintenance doses of 100 mg oral/IV q 6-8 hr	• no dosage adjustments provided in the manufacturer's labeling • serum conc. may be difficult to interpret in renal failure. monitoring of free (unbound) conc. or adjustment to allow interpretation is recommended.					
Pioglitazone	Initial, 15 or 30 mg orally once daily; titrate in 15-mg increments; MAX 45 mg daily	No adjustment required					
Propranolol	Hypertension 80-240 mg/day Angina 80-320 mg/day Arrhythmia 30-160 mg/day	eGFR 10-40 : 50% หรือขนาดปกติทุก 24-36 ชม. eGFR <10 : 25% หรือขนาดปกติทุก 40-60 ชม.					

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<tr><td>Quinine</td><td>initial dose 16.4 mg (equivalent to 20 mg of dihydrochloride)/kg infused over 4 hr followed by 8.2 mg/kg q 8 hr in adults and q 12 hr in children</td><td colspan="6">maintenance doses should be reduced threefold in patients with impaired renal function.</td></tr>
<tr><td>Ranitidine</td><td>• intermittent bolus or infusion: 50 mg q 6-8 hr max 400 mg/day)
• continuous IV infusion: 6.25 mg/hr
Oral:150mg BID</td><td colspan="3">150 mg oral q 18-24 hr, adjust dose cautiously if needed
50 mg IV q 18-24 hr, adjust dose cautiously if needed Oral</td><td colspan="3">No adjustment required</td></tr>
<tr><td>Risperidone</td><td></td><td colspan="2">0.5 mg twice daily; titrate slowly in increments of no more than 0.5 mg twice daily; increases to dosages > 1.5 mg twice daily should occur at intervals of ≥ 1 week</td><td colspan="4">no dosage adjustments provided in the manufacturer’s labeling, may be decreased and doses should be reduced in patients with renal disease</td></tr>
<tr><td>Losartan</td><td>50 - 100 mg/day</td><td colspan="6">No adjustment required</td></tr>
<tr><td>Simvastatin</td><td>5-40 mg oral daily</td><td colspan="2">initial 5 mg/day with close monitoring</td><td colspan="4">No adjustment required</td></tr>
<tr><td>Spironolactone</td><td>25 – 100/ mg/day Max dose 400 mg</td><td colspan="2">Avoid</td><td colspan="2">Decrease initial dose to 12.5 mg OD</td><td>6 – 12 hr</td><td></td></tr>
<tr><td>Sulfamethoxazole + trimethoprim</td><td>8-20 mg TMP/kg/day IV divided q 6-12 hr</td><td>use is not recommended</td><td>50%</td><td colspan="4">100%</td></tr>
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Tenofovir	300 mg oral OD	no dosage adjustment provided in manufacturer's labeling; has not been studied	300 mg q 72-96 hr	300 mg q 48 hr	No adjustment required		
Tramadol	50 -100 mg IV q 4-6 hr	(immediate-release, orally-disintegrating tablets), increase dosing interval to 12 hours; MAX 200 mg/day		No adjustment required			