	Southern Philippines Medical Center **CLINICAL PRACTICE GUIDELINES** **Title: Guidelines for Patients with Urinary Tract Infection** **Document Number:SPMC-CPG-DFCM-03**	

OBJECTIVE: To provide efficient and cost-effective management choices for the family medicine resident or consultant dealing with patients diagnosed with urinary tract infection.

SCOPE: This shall apply for the management of patients with a diagnosis of urinary tract infection.

GUIDELINES:

UTI	HISTORY AND PE	SIGNS AND SYMPTOMS	LABORATORY	DIAGNOSIS	RECOMMENDATIONS
Acute Uncomplicated Cystitis (AUC)	VS, LMP, Onset and Duration of Symptoms	• dysuria • frequency • gross hematuria • (+/-) back pain	• CBC • UA	• Significant pyuria in men is defined as > 10 wbc/mm3 or > 5 wbc/hpf in a clean catch midstream urine specimen • A pretreatment urine culture should be performed routinely in all men with UTI	• Empiric Antibiotic Treatment is the most effective approach in the management of AUC • Antibiotic treatment Table 1
Acute Uncomplicated Pyelonephritis (AUP)	VS, LMP, Onset and Duration of symptoms	• fever (T>38℃) • chills, flank pain, • costovertebral angle • tenderness, nausea and vomiting • (+/-) symptoms of lower urinary tract infection	• Pyuria (> 5 wbc/hpf of centrifuged urine) on urinalysis • Bacteriuria with counts of > 10,000 cfu of a uropathogen/ml on urine culture	• Urinalysis and Gram stain • Urine culture and sensitivity test should also be performed routinely	**WARRANTS ADMISSION** • inability to maintain oral hydration or take medications; • concern about compliance; • presence of possible complicating conditions; • severe illness with high fever, severe pain, • marked debility and signs of sepsis Antibiotic Treatment Table 2

Asymptomatic Bacteriuria		Asymptomatic	● two consecutive voided urine specimens with isolation of the same bacterial strain in quantitative counts ≥100,000 cfu/mL ● single catheterized urine specimen with one bacterial species isolated in a quantitative count ≥100 cfu/mL identifies bacteriuria	If culture is not possible ● significant pyuria (>10 wbc/hpf) ● a positive gram stain of unspun urine (>2 microorganisms/oif) in 2 consecutive midstream urine samples can be used to screen for ASB	● The choice of antibiotic depends on culture results. A seven-day regimen
Recurrent UTI	non-pregnant woman with ● no known urinary tract abnormalities ● has 3 or more episodes of acute uncomplicated cystitis documented by urine culture or 2 or more episodes in a 6-month period.		● As mention above	● Radiologic or imaging studies and cystoscopy are not routinely indicated ● Renal ultrasound or CT scan/stonogram may be done to screen for urologic abnormalities	If a decision is made to give antibiotic prophylaxis, any of the following is recommended: a. Continuous prophylaxis, defined as the daily intake of a low-dose of antibiotic for 6-12 months b. Post-coital prophylaxis, defined as the intake of a single dose of antibiotic immediately after sexual intercourse c. Intermittent prophylaxis, defined as self-treatment with a single

				antibiotic dose based on patient's perceived need Antibiotic on Table 3 for Prophylaxis ● Recurrent UTI or breakthrough infections during prophylaxis can be treated empirically with any of the antibiotics recommended for acute uncomplicated cystitis (Table 1) other than the antibiotic being given for prophylaxis. Always request for a urine culture and modify the treatment accordingly.
Complicated UTI	Occurs in setting of functional or anatomic abnormalities of the urinary tract or kidneys ● Presence of an indwelling urinary catheter or intermittent catheterization ● Incomplete emptying of the bladder with >100 ml retained urine post-voiding ● Obstructive uropathy due to bladder outlet obstruction, calculus and other causes ● Vesicoureteral reflux & other urologic abnormalities ● Azotemia due to intrinsic renal disease ● Renal transplantation ● Diabetes mellitus ● Immunosuppressive conditions – e.g. febrile neutropenia; HIV/AIDS	● Continuous prophylaxis, antibiotic for 6-12 months ● post-coital prophylaxis	A urine sample for gram stain, culture and sensitivity testing must always be obtained before the initiation of any treatment	

	• UTI caused by unusual pathogens or drug-resistant pathogens • UTI in males except in young males presenting with exclusively with lower UTI symptoms		

Table 1.
Antibiotics for Acute Uncomplicated Cystitis

Antibiotic		Recommended dose and duration
Primary	Nitrofurantoin monohydrate macrocrystals (not sold locally)	100 mg BID for 5 days PO
	Nitrofurantoin macrocrystals	100 mg QID for 5 days PO
Alternative	Fosfomycin trometamol	3 g single dose PO
	Pivmecillinam (not sold locally)	400 mg BID for 3-7 days PO
	Ofloxacin	200 mg BID for 3 days PO
	Ciprofloxacin	250 mg BID for 3 days PO
	Ciprofloxacin extended release	500 mg OD for 3 days PO
	Levofloxacin	250 mg OD for 3 days PO
	Norfloxacin	400 mg BID for 3 days PO
	Amoxicillin clavulanate	625 mg BID for 7 days PO
	Cefuroxime axetil	250 mg BID for 7 days PO
	Cefaclor	500 mg TID for 7 days
	Cefixime	200 mg BID for 7 days PO
	Cefpodoxime proxetil	100 mg BID for 7 days PO
	Ceftibuten	200 mg BID for 7 days PO
ONLY if with proven susceptibility	Trimethoprim-sulfamethoxazole (TMP-SMX)	160/800 mg BID for 3 days PO

Table 2. **Acute Uncomplicated Pyelonephritis Treatment**		
Drug	*Dose and Frequency*	*Duration*
ORAL		
Ciprofloxacin	500 BID	7-10 days
Gatifloxacin	400 OD	7-10 days
Levofloxacin	250 OD	7-10 days
Ofloxacin	400 BID	14 days
Cefixime	400 OD	14 days
Cefuroxime	500 BID	14 days
Co-Amox	625 TID	14 days
PARENTERAL (given until patient is afebrile)		
Ceftriaxone	1-2 gm	q 24
Ciprofloxacin	200-400 mg	q 12
Levofloxacin	250-500 mg	q 24
Gatifloxacin	400 mg	q 24
Gentamicin (+/-) ampicillin	3-5 mg/kg BW	q 24
Ampi-Sulbactam	1.5 gm	q 6
Pip-Tazobactam	2.25-4.5 gm	q6-8

Table 3.
Antibiotics proven effective in reducing the number of recurrences of UTI

Antibiotics	Recommended doses		
	Continuous prophylaxis	Post-coital prophylaxis	Intermittent prophylaxis
Nitrofurantoin	50-100 mg at bedtime	50-100 mg	50 mg
Trimethoprim	100 mg at bedtime	100 mg	
Trimethoprim - sulfamethoxazole	40 mg/ 200 mg at bedtime	40 mg/ 200 mg	40 mg/200 mg
Trimethoprim - sulfamethoxazole	40 mg/ - 200 mg 3x/week	80 mg/400mg	
Ciprofloxacin	125 mg at bedtime	200mg	125mg
Norfloxacin	200 mg at bedtime	200 mg	200 mg
Ofloxacin		100mg	
Pefloxacin	400 mg weekly		
Cefalexin	125-250 mg at bedtime	125-250 mg	
Cefaclor	250 mg at bedtime		250 mg
Fosfomycin	3 g every 10 days		
Amoxicillin			500 mg
Cefuroxime			250 mg

REFERENCES

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