American College of Radiology ACR Appropriateness Criteria[®]

Recurrent Lower Urinary Tract Infections in Females

Variant 1: Recurrent lower urinary tract infections in a female. Uncomplicated with no underlying risk factors.

	Appropr	iateness	005			D 1 DD1					F	inal	Tabu	latio	ns		
Procedure	Categ	gory	SOE	Adults RR	L	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CT abdomen and pelvis with IV contrast	Usuall approp		Limited	ଡଡଡ 1-1 mSv	0	≎≎≎≎≎ 3- 10 mSv [ped]	2	2	5	5	3	0	0	0	0	1	0
			References			Study	v Quality										
			6 (20842992)				4										
			25 (18061020)				4					-			-	-	
CT abdomen and pelvis without IV contrast	Usuall approp		Limited	ତେତେ 1-1 mSv	0	≎≎≎≎≎ 3- 10 mSv [ped]	2	2	4	5	3	0	1	0	1	0	0
			References			Study	Quality										
			6 (20842992)				4										
			25 (18061020)				4										
CT pelvis with bladder contrast (CT cystography)	Usuall approp		Limited	ଡଡଡଡ 10- mSv	-30	≎≎≎≎≎ 3- 10 mSv [ped]	2	2	7	6	0	0	0	1	0	0	0
			References			Study	v Quality										
			20 (21792579)				4										
			6 (20842992)				4					_			_		
CTU without and with IV contrast	Usuall approp		Limited	ଫେଫେଫ 10- mSv	-30	ତ୍ତର୍ବତ୍ତର 10-30 mSv [ped]	2	2	5	3	3	1	1	0	0	1	0
			References			Study	v Quality										

		20 (21792579)			4										
		6 (20842992)			4										
Fluoroscopy cystography	Usually not appropriate	Limited	ଷଷଷ 1-10 mSv		2	2	6	4	1	1	1	1	0	0	0
		References		Study	y Quality										
		26 (7453771)			2										
Fluoroscopy voiding cystourethrography	Usually not appropriate	Limited	֎֎ 0.1-1mSv	�� 0.03- 0.3 mSv [ped]	2	2	6	3	2	1	1	1	0	0	0
		References		Study	y Quality										
		26 (7453771)			2										
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	6	6	1	0	0	0	1	0	0
		References		Study	y Quality										
		27 (19188307)		_	4										
MRI abdomen and pelvis without and with IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	6	6	1	0	0	0	1	0	0
		References		Study	y Quality										
		27 (19188307)			4					_					
MRU without and with IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	5	4	3	0	1	0	0	1	0
		References		Study	y Quality										
		27 (19188307)			4										
US kidneys and bladder retroperitoneal	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	2	9	3	1	0	0	0	0	0
Radiography abdomen	Usually not appropriate	Expert Consensus	֎֎ 0.1-1mSv	�	2	2	7	3	0	0	2	1	1	0	0
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Limited	ଚ ଚଚଚଚ 10-30 mSv		1	1	9	2	2	0	0	0	0	1	0
		References		Study	y Quality		•								

		6 (20842992)													
		25 (18061020)		4											
Fluoroscopy contrast enema	Usuall approp	Expert Consensus	ଚଚଚଚ 1-1 mSv	0	1	1	9	2	2	0	1	0	0	0	0
Radiography intravenous urography	Usuall approp	Limited	ଡଡଡ 1-1 mSv	0	1	1	12	0	1	0	1	0	0	0	0
		References		Study Quality											
		13 (19495546)			4										

Variant 2: Recurrent lower urinary tract infections in a female. Complicated, or patients who are nonresponders to conventional therapy, develop frequent reinfections or relapses, or have known underlying risk factors.

	Appropriatene	SS COL			D (1				F	'inal '	Tabu	latio	ıs		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CTU without and with IV contrast	Usually appropriate	Limited	ତତତତ 10-3(mSv	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8	8	1	0	0	0	1	0	3	5	4
		References		Study	v Quality										
		30 (17597338)			4										
		27 (19188307)			4										
		31 (30466909)			4			-							
MRU without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	1	0	0	0	0	0	9	3	2
		References		Study	v Quality										
		49 (15126809)			3										
		23 (16734849)			3										
		50 (15900055)			3										
		48 (18203929)			4										
		27 (19188307)			4										

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	1	0	0	0	3	8	2	1	0
		References		Study	y Quality								•		
		44 (19001648)			4										
		42 (18204232)			4										
		43 (15908546)			4										
		37 (18635623)			4										
		36 (19902327)			4										
		38 (20489108)			4										
		40 (18718640)			4										
		41 (22674706)			4		-								
		47 (15546583)			4		-								
		13 (19495546)			4		+								
		46 (3873806)			4		+								
		35 (11152787)			2		-								
		45 (11818599)			3		-								
		39 (16775670)			4										
		27 (19188307)			4	1				1					
CT abdomen and pelvis without IV contrast	May be appropriate	Limited	֎֎֎ 1-10 mSv	≎≎≎≎≎ 3- 10 mSv [ped]	5	5	0	0	1	3	11	0	0	0	0
		References		Study	y Quality										
		24 (11295405)			4										
		28 (25421387)			4	1		1	-	1	1	1			.
CT abdomen and pelvis without and with IV contrast	May be appropriate	Limited	ଡଡଡଡ 10-30 mSv	0 0000000 0 10-30 mSv [ped]	5	5	0	0	1	3	11	0	0	0	0
		References		Study	y Quality										
		24 (11295405)			4										
		28 (25421387)			4]								

CT pelvis with bladder contrast (CT cystography)	May approp		Limited	ହତତତ 10-30 mSv	≎≎≎≎ 3- 10 mSv [ped]	5	5	0	2	0	2	7	2	1	0	0
			References		Study	Quality										
			29 (24857651)			4										
			19 (22696044)			4										
Fluoroscopy voiding cystourethrography	May approp		Limited	&⊛ 0.1-1mSv	≎≎ 0.03- 0.3 mSv [ped]	5	5	0	1	2	3	2	5	1	0	0
			References		Study	Quality										
			34 (3925167)			4					_					
MRI abdomen and pelvis without IV contrast	May approp	be riate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	1	0	0	1	10	2	1	0	0
			References		Study	Quality										
			44 (19001648)			4										
			42 (18204232)			4										
			43 (15908546)			4										
			37 (18635623)			4										
			36 (19902327)			4										
			38 (20489108)			4										
			40 (18718640)			4										
			41 (22674706)			4										
			47 (15546583)			4										
			13 (19495546)			4										
			46 (3873806)			4										
			35 (11152787)			2										
			45 (11818599)			3										
			39 (16775670)			4										
			27 (19188307)			4	1									
US kidneys and bladder retroperitoneal	May approp		Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	1	2	7	1	2	2	0
			References		Study	Quality										

						1									
		53 (7058574)			4										
		54 (6466939)			4										
		55 (2642347)			4										
		56 (17115233)			3										
		57 (20206970)			3										
		59 (22010975)			3										
		58 (11110945)			1										
		45 (11818599)			3										
CT abdomen and pelvis with IV contrast	May be appropriate	Limited	ତତତ 1-10 mSv	२२२२ २ 3- 10 mSv [ped]	4	4	0	3	2	3	7	0	0	0	0
		References		Study	y Quality		-		-		-				
		24 (11295405)			4										
		28 (25421387)			4										
Fluoroscopy cystography	May be appropriate	Expert	ତେତ 1-10 mSv		4	4	2	2	3	4	2	1	0	0	0
Fluoroscopy urethrography double balloon	Usually not appropriate	Expert Consensus	֎֎ 0.1-1mS	v	3	3	3	4	3	1	2	1	0	0	0
Radiography abdomen	Usually not appropriate		֎֎ 0.1-1mS	v 0.03- 0.3 mSv [ped]	3	3	2	5	7	0	1	0	0	0	0
		References		Study	y Quality										
		51 (20566811)			1										
		52 (6784476)			4										
Fluoroscopy contrast enema	Usually not appropriate		ତତତ 1-10 mSv	२२२२ 3- 10 mSv [ped]	2	2	3	5	3	2	1	0	0	0	0
		References		Study	y Quality										
		33 (15371612)			4										
		32 (15859969)			3										
Radiography intravenous urography	Usually not appropriate	Limited	ତତତ 1-10 mSv	& the two sets of two	1	1	8	4	0	0	2	0	0	0	0

References	Study Quality
27 (19188307)	4

Appendix Key

A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

Appropriateness Category: The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

SOE: Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References:** The citation number and PMID for the reference(s) associated with the recommendation.
- Study Quality: The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

RRL: Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

Rating: The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Median: The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Final tabulations: A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at www.acr.org/ac.