American College of Radiology ACR Appropriateness Criteria®

Preprocedural Planning for Left Atrial Procedures in Atrial Fibrillation

Variant 1: Atrial fibrillation, atrial tachycardia, or atypical atrial flutter. Preprocedural planning prior to left atrial ablation.

Procedure	Appropri	ateness	COF	4 1 14 DD	т	n i nn	D 4	3.6.11			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
CTA chest with IV contrast	Usua approp		Limited	≎≎≎ 1-1(mSv)	���� 3- 10 mSv [ped]	7	7	0	1	0	0	0	0	9	6	2
			References			Study	Quality										
			25 (26341605)				4										
			24 (26332107)				3										
			23 (31023034)				3										
CT heart function and morphology with IV contrast	Usua approp		Strong	���� 10-3 mSv	30	���� 3- 10 mSv [ped]	7	7	0	0	2	0	2	0	6	3	5
			References			Study	Quality										
			22 (25956477)				3										
			21 (34453377)				3										
			20 (24469219)				3										
			19 (22364703)				2										
			18 (32629004)				2										
			17 (25786766)				2										
			5 (25847091)				4										
MRA chest without and with IV contrast	Usua approp		Strong	O 0 mSv		O 0 mSv [ped]	7	7	0	0	0	0	0	2	11	4	1
		References				Study	Quality				_		_				
			26 (26139321)				2										

		27 (29663178)			2										
		28 (27236529)			3										
MRI heart function and morphology without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	2	3	10	3	0
		References		Study	Quality										
		37 (32412119)			3										
		36 (24496537)	ı		2										
		35 (26777218)	ı		3										
		34 (31874788)	1		2										
		33 (31397511)			3										
		28 (27236529)			3										
		32 (34303756)		C	Good										
		31 (25464427)			3										
		6 (33600025)			4					1					
US echocardiography transesophageal	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	1	0	11	3	3
		References		Study	Quality										
		40 (7486462)			1										
		39 (8249844)			2										
		38 (25666720)			3										
MRA chest without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	4	11	0	2	1	0
		References		Study	Quality										
		29 (26149175)			3										
		30 (19561516)			3										
MRI heart function and morphology without IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	4	4	0	1	6	8	3	0	0	0	0
CTA coronary arteries with IV contrast	Usually not appropriate	Expert Consensus	��� 1-10 mSv	ॐॐ 3- 10 mSv [ped]	3	3	2	0	9	3	4	0	0	0	0

US echocardiography transthoracic resting	Usuall approp	Strong	O 0 mSv	O 0 mSv [ped]	3	3	1	2	7	7	0	1	0	0	0
		References		Stud	y Quality										
		41 (21440414)			2										
		42 (27822477)			2										
Catheter venography pulmonary	Usuall approp	Limited	���� 10- mSv	⊕⊕ 10-30		5	3	8	1	0	0	0	0	1	
	•	References		Stud	y Quality										
		15 (27116237)		3											
CT chest with IV contrast	Usuall approp	Expert Consensus	��� 1-10 mSv	0	2	2	9	1	2	3	2	0	0	1	0
CT chest without and with IV contrast	Usuall approp	Expert Consensus	��� 1-10 mSv	0	2	2	9	1	3	2	2	0	1	0	0
CT chest without IV contrast	Usuall approp	Limited	��� 1-10 mSv	0	1	1	11	2	3	1	0	1	0	0	0
	•	References		Stud	y Quality										
		16 (21908449)			2										
Arteriography coronary	Usuall approp	Expert Consensus	��� 1-10 mSv	0	1	1	12	4	1	0	0	1	0	0	0
MRA coronary arteries without IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	11	5	0	1	1	0	0	0	0
MRA coronary arteries without and with IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	10	5	1	0	2	0	0	0	0
SPECT or SPECT/CT MPI rest and stress	Usuall approp	Expert Consensus	≎≎≎≎ 10- mSv	♀♀♀♀ 30 10-30 mSv [ped]	1	1	12	3	1	0	2	0	0	0	0

Variant 2: Atrial fibrillation. Preprocedural planning prior to left atrial appendage endovascular occlusion.

Day on James	Appropriateness	SOF	A J14- DDI	D. J. DDI	D-45	M - 1!			F	inal	Tabu	latio	ıs		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CT heart function and morphology with IV contrast	Usually appropriate	Moderate	���� 10-30 mSv	���� 3- 10 mSv [ped]	8	8	0	0	0	0	0	0	0	12	6
		References		Study	Quality										
		48 (23406625)		(Good										
		47 (34398676)			3										
		46 (27884358)			3										
		45 (26728988)			3										
		44 (28012051)			3										
		43 (29388306)			2										
US echocardiography transesophageal	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	0	0	2	11	5
		References		Study	Quality										
		45 (26728988)			3										
		46 (27884358)			3										
CTA chest with IV contrast	Usually appropriate	Moderate	��� 1-10 mSv	���� 3- 10 mSv [ped]	7	7	0	0	0	0	1	3	10	2	2
		References		Study	Quality										
		43 (29388306)			2										
		49 (28761682)			3										
		48 (23406625)		(Good										
MRA chest without and with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	1	3	10	4	0	0	0
		References		Study	Quality		•								
		28 (27236529)			3										
MRI heart function and morphology without and with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	2	4	11	0	1	0	0
		References			Quality										
		7 (30952613)			4										

		28 (27236529)			3										
		50 (23454807)			2										
MRI heart function and morphology without IV contrast	Usuall approp	Limited	O 0 mSv	O 0 mSv [ped]	3	3	1	2	8	3	3	0	0	0	1
		References		Study	Quality				•						
		28 (27236529)			3										
US echocardiography transthoracic resting	Usuall approp	Strong	O 0 mSv	O 0 mSv [ped]	3	3	3	2	12	0	1	0	0	0	0
		References		Study	Quality										
		41 (21440414)			2										
		42 (27822477)			2										
CTA coronary arteries with IV contrast	Usuall approp	Expert Consensus	��� 1-10 mSv	0	2	2	4	7	5	0	2	0	0	0	0
MRA chest without IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	8	3	2	2	2	1	0	0	0
CT chest with IV contrast	Usuall approp	Expert Consensus	��� 1-10 mSv	0	1	1	11	1	0	3	1	1	0	1	0
CT chest without IV contrast	Usuall approp	Expert Consensus	發發發 1-10 mSv	0	1	1	12	3	1	2	0	0	0	0	0
CT chest without and with IV contrast	Usuall approp	Expert Consensus	��� 1-10 mSv	9999 3- 10 mSv [ped]	1	1	11	1	0	2	3	0	1	0	0
Arteriography coronary	Usuall approp	Expert Consensus	≎≎≎ 1-10 mSv)	1	1	13	1	1	2	0	1	0	0	0
MRA coronary arteries without IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	11	5	0	1	1	0	0	0	0
MRA coronary arteries without and with IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	11	5	0	2	0	0	0	0	0

SPECT or SPECT/CT MPI rest and stress	Usually not appropriate	Expert Consensus	୫୫୫୫ 10-30 mSv	\$\$\$\$\$ 10-30 mSv [ped]	1	1	15	2	0	0	1	0	0	0	0
Catheter venography pulmonary	Usually not appropriate	Expert Consensus	���� 10-30 mSv		1	1	12	2	3	0	0	0	0	0	1

Variant 3: Atrial fibrillation. Preprocedural planning prior to electrical or pharmacologic cardioversion.

Procedure	Appropri	ateness	GOE	A L L DDI	D I DDI	D 4	3.6.11			F	inal '	Tabu	latio	ns		
Procedure	Categ		SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CT heart function and morphology with IV contrast	Usua approp		Strong	≎≎≎≎ 10-3 mSv	0	8	8	0	0	0	0	0	0	2	10	6
			References		Study	Quality										
			18 (32629004)			2										
			19 (22364703)			2										
			25 (26341605)			4										
			48 (23406625)			Good						1				
US echocardiography transesophageal	Usua approp		Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	0	0	1	9	8
			References		Study	Quality										
			38 (25666720)			3										
			51 (27567465)			4										
CTA chest with IV contrast	Usua approp		Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	7	7	0	0	0	0	0	2	9	5	2
			References		Study	Quality										
			48 (23406625)		(Good		_								
MRI heart function and morphology without and with IV contrast	May approp		Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	9	2	4	2	1	0
			References		Study	Quality										

		28 (27236529)			3										
		50 (23454807)			2						ı	ı			
MRA chest without and with IV contrast	Usually approp	Limited	O 0 mSv	O 0 mSv [ped]	3	3	2	0	8	2	3	2	0	0	1
		References		Study	Quality										
		28 (27236529)			3										
MRI heart function and morphology without IV contrast	Usually approp	Limited	O 0 mSv	O 0 mSv [ped]	3	3	2	2	8	2	3	1	0	0	0
		References		Study	Quality										
		28 (27236529)			3										
US echocardiography transthoracic resting	Usually approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	2	3	9	0	4	0	0	0	0
CTA coronary arteries with IV contrast	Usually approp	Expert Consensus	��� 1-10 mSv	≎≎≎≎ 3- 10 mSv [ped]	2	2	3	9	4	0	2	0	0	0	0
CT chest with IV contrast	Usually approp	Expert Consensus	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	2	2	9	0	5	1	2	1	0	0	0
MRA chest without IV contrast	Usually approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	8	4	2	2	2	0	0	0	0
CT chest without IV contrast	Usually approp	Expert Consensus	��� 1-10 mSv	⊕⊕⊕⊕ 3- 10 mSv [ped]	1	1	15	2	1	0	0	0	0	0	0
CT chest without and with IV contrast	Usually approp	Expert Consensus	��� 1-10 mSv	⊕⊕⊕⊕ 3- 10 mSv [ped]	1	1	12	1	1	1	1	2	0	0	0
Arteriography coronary	Usually approp	Expert Consensus	≎≎≎ 1-10 mSv		1	1	14	1	2	0	0	1	0	0	0
MRA coronary arteries without IV contrast	Usually approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	12	4	0	0	2	0	0	0	0
MRA coronary arteries without and with IV contrast	Usually approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	12	3	1	1	1	0	0	0	0

SPECT or SPECT/CT MPI rest and stress	Usually not appropriate	Expert Consensus	ଡେଡେଡ 10-30 mSv	≎≎≎≎≎ 10-30 mSv [ped]	1	1	15	2	0	0	0	0	1	0	0
Catheter venography pulmonary	Usually not appropriate	Expert Consensus	≎≎≎≎ 10-30 mSv		1	1	13	2	2	0	0	0	0	1	0

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.