American College of Radiology
ACR Appropriateness Criteria®

Imaging of Mesenteric Ischemia

Variant 1: Suspected acute mesenteric ischemia. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CTA abdomen and pelvis with IV contrast	Usually appropriate	Strong	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	9	9	0	0	0	0	0	0	0	1	13

References	Study Quality
33 (25814198)	4
25 (12944600)	2
26 (17242256)	4
39 (20574087)	Good
28 (21722785)	4
32 (21132342)	4
38 (26962730)	4
30 (26654393)	4
40 (19657684)	2
12 (19699412)	4
15 (24238311)	Good
23 (21993179)	1
24 (17502217)	4
27 (19813174)	4
31 (18425546)	3
36 (26809547)	2
37 (20189850)	3

CT abdomen and pelvis with IV contrast	May be appropriate	Strong	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	6	6	0	0	0	1	6	6	1	0	0
Arteriography abdomen	May be appropriate (Disagreement)	Expert Opinion	☢☢☢ 1-10 mSv	☢☢☢☢☢ 10-30 mSv [ped]	5	5	0	1	9	1	1	0	0	2	0

References	Study Quality
35 (18690454)	4
41 (20719444)	3
29 (23740311)	1
22 (-3097783)	4
34 (22536301)	4
1 (20049551)	4

References	Study Quality
25 (12944600)	2
40 (19657684)	2
31 (18425546)	3
42 (23471431)	2
43 (21655965)	2

References	Study Quality
61 (19372025)	4
12 (19699412)	4
49 (929375)	3
50 (1598410)	4
51 (2259261)	4
52 (6141717)	4
53 (9340961)	4
55 (4018630)	4
56 (8367801)	4
57 (10784596)	4
54 (887750)	4
58 (24199769)	3
59 (25757988)	Good

		60 (22503176)	2												
		62 (21963821)	2												
MRA abdomen and pelvis without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	0	0	2	2	4	4	2	0	0
		References	Study Quality												
		45 (9084082)	4												
		47 (9039611)	3												
		44 (9739362)	4												
		46 (8610584)	2												
		48 (26105524)	2												
Radiography abdomen	May be appropriate	Limited	☢☢ 0.1-1mSv	☢☢ 0.03-0.3 mSv [ped]	5	5	3	0	2	2	5	1	1	0	0
		References	Study Quality												
		17 (22807640)	4												
		18 (15159262)	4												
		19 (1731379)	4												
		20 (15093234)	4												
		5 (15833694)	4												
		21 (16613303)	3												
US duplex Doppler abdomen	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	4	4	1	1	1	6	3	2	0	0	0
		References	Study Quality												
		12 (19699412)	4												
		63 (22195765)	2												
		64 (11561279)	4												
		65 (15474776)	4												
		66 (15758127)	4												
CT abdomen and pelvis without IV contrast	Usually not appropriate	Strong	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	0	2	7	3	1	1	0	0	0
		References	Study Quality												

		25 (12944600)		2											
		40 (19657684)		2											
		31 (18425546)		3											
		42 (23471431)		2											
		43 (21655965)		2											
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Strong	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	3	3	3	4	5	2	0	0	0	0	0
		References		Study Quality											
		25 (12944600)		2											
		40 (19657684)		2											
		31 (18425546)		3											
		42 (23471431)		2											
		43 (21655965)		2											
MRA abdomen and pelvis without IV contrast	Usually not appropriate	Strong	O 0 mSv	O 0 mSv [ped]	3	3	0	4	10	0	0	0	0	0	0
		References		Study Quality											
		45 (9084082)		4											
		47 (9039611)		3											
		44 (9739362)		4											
		46 (8610584)		2											
		48 (26105524)		2											

Variant 2: Suspected chronic mesenteric ischemia. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CTA abdomen and pelvis with IV contrast	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	9	9	0	0	0	0	0	0	0	1	13

		References		Study Quality												
		7 (22920356)		4												
		29 (23740311)		1												
MRA abdomen and pelvis without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	1	1	1	4	7	0
		References		Study Quality												
		45 (9084082)		4												
		47 (9039611)		3												
		44 (9739362)		4												
		46 (8610584)		2												
		68 (20011355)		4												
		70 (12172987)		4												
CT abdomen and pelvis with IV contrast	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	0	0	0	2	8	3	1	0	0
		References		Study Quality												
		33 (25814198)		4												
		26 (17242256)		4												
		24 (17502217)		4												
		69 (26553268)		2												
Arteriography abdomen	May be appropriate (Disagreement)	Expert Opinion	☢☢☢ 1-10 mSv	☢☢☢☢☢ 10-30 mSv [ped]	5	5	0	3	6	1	1	0	2	1	0
		References		Study Quality												
		33 (25814198)		4												
		72 (-3091585)		4												
		71 (12391508)		4												
		61 (19372025)		4												
		57 (10784596)		4												
		58 (24199769)		3												
		59 (25757988)		Good												
		60 (22503176)		2												

		62 (21963821)	2												
		66 (15758127)	4												
		73 (21236616)	2												
		74 (20097408)	1												
		75 (27066948)	2												
MRA abdomen and pelvis without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	3	3	6	2	0	0	0
		References	Study Quality												
		45 (9084082)	4												
		47 (9039611)	3												
		44 (9739362)	4												
		46 (8610584)	2												
		68 (20011355)	4												
		70 (12172987)	4												
US duplex Doppler abdomen	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	1	2	5	2	5	0	0
		References	Study Quality												
		63 (22195765)	2												
CT abdomen and pelvis without IV contrast	Usually not appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	0	5	5	4	0	0	0	0	0
		References	Study Quality												
		33 (25814198)	4												
		26 (17242256)	4												
		24 (17502217)	4												
		69 (26553268)	2												
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Limited	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	3	3	3	3	5	0	3	0	0	0	0
		References	Study Quality												
		33 (25814198)	4												

Radiography abdomen	Usually not appropriate	Limited	☢☢ 0.1-1mSv	☢☢ 0.03-0.3 mSv [ped]	2	2	4	5	4	1	0	0	0	0	0

References	Study Quality
26 (17242256)	4
24 (17502217)	4
69 (26553268)	2
19 (1731379)	4
57 (10784596)	4
68 (20011355)	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.**