

**Hepatobiliary Phase Imaging in HCC: Revisiting
Diagnostic Algorithms and Clinical Utility of Gadoxetic
Acid-Enhanced MRI Across International Guidelines**

ELECTRONIC SUPPLEMENTARY MATERIAL

Supplementary Table 1. Guideline-stratified Diagnostic Specificity of gadoxetic acid-enhanced MRI for Small HCC Lesions (≤ 30 mm): Comparison with CE-CT/ECA-MRI

Studies	LI-RADS (v2018)		EASL (v2018)	KLCA-NCC (v2018/2022)	APASL (v2017)
	Without HBP /TP hypointensity	With HBP /TP hypointensity			
Gadoxetic acid-enhanced MRI					
Lee et al.(2019)[1] (10 mm ≤ size ≤ 19 mm; n= 173)	94 [89.1, 97.8]				
Kim et al.(2019)[2] (TP) (0 mm < size ≤ 30 mm; n= 203)	94 [67.6, 99.2]	82 [56.5, 94.4]			
Kim et al.(2019)[2] (0 mm < size ≤ 30 mm; n= 203)	94 [67.6, 99.2]	82 [56.5, 94.4]			
Jiang et al.(2019)[3] (0 mm < size ≤ 20mm; n= 34)	77 [46, 95]		69 [64, 97]		
Hwang et al.(2019)[4](TP)# (0 mm < size < 20mm; n= N/A)	96.7 [93.1, 100.0]	93.9 [89.6, 98.2]			
Gaetano et al.(2019)[5] (0 mm < size ≤ 20mm; n= 43)	76.9 [56.4-91.0]				
Byun et al.(2020)[6] (10 mm ≤ size ≤ 30 mm; n=493)	92.2 [80.9, 97.0]		84.3 [71.7, 92.0]	78.4 [65.1, 87.6]	70.6 [56.8, 81.4]
Kang et al.(2020)[7] (10 mm ≤ size ≤ 30 mm; n=385)	95.1 [88.6–98.0]				
Lee et al. (2020)[8] (10 mm ≤ size ≤ 19 mm; n= 104)	97.6 [93.0, 100.0]			95.2 [88.8, 100.0]	
Lee et al. (2020)[9] (10 mm ≤ size ≤ 19 mm; n= 85)	100 [100, 100]		100 [100, 100]		
Ko et al. (2020)[10] (10 mm ≤ size ≤ 19 mm; n= 90)	90.3 [75.1, 96.6]				
Jiang et al. (2021) [11] (0 mm < size ≤ 19 mm; n= 200)	96.5				
Lee et al. (2021)[12] (10 mm ≤ size ≤ 19 mm; n= 173)	89.1 [82.3–93.9]			94.5 [89.1–97.8]	
Hwang et al. (2021)[13]# (10 mm ≤ size ≤ 19 mm; n= N/A)	95.1 [90.2, 100.0]		95.1 [90.2, 100.0]	86.1 [79.2, 93.0]	86.1 [79.2, 93.0]
Park et al. (2021)[14]# (10 mm ≤ size ≤ 30 mm; n=447)	93.8 [91.3, 96.3]		94.5 [92.1, 96.9]	87.6 [84.1, 91.1]	82.5 [78.7, 86.3]
Park et al. (2021)[14]# (10 mm ≤ size ≤ 19 mm; n= 249)	95.5 [93.2, 97.8]		96.4 [94.2, 98.6]	89.1 [85.5, 92.7]	86.9 [83.2, 90.6]
Park et al. (2021)[14]# (20 mm ≤ size ≤ 30 mm; n= 198)	83.7 [73.8, 93.6]		83.7 [73.8, 93.6]	79.4 [68.9, 89.9]	56.1 [44.2, 68.0]
Clarke et al. (2021)[15] (10 mm ≤ size ≤ 19 mm; n= 74)	93		92		86
Zhang et al. (2021)[16] (10 mm ≤ size ≤ 19 mm; n= 65)	96.2	96.2			
Xie et al. (2022)[17] (TP) (10 mm ≤ size ≤ 19 mm; n= 174)	98.7 [91.9-99.9]	97.4 [90.0–99.5]			
Huang et al. (2023)[18]† (0 mm < size < 10mm; n= 240)	92.6 [85.5-96.5]				79.6 [70.6-86.5]
Yoon et al. (2024)[19] (10 mm ≤ size ≤ 19 mm; n= 766)	91.6 [88.6, 93.9]		91.0 [87.9, 93.3]	83.3 [79.6, 86.4]	73.2 [68.7, 77.4]
Lin et al. (2025)[20] (0 mm < size < 30mm; n= 275)	82.0* [68.6, 91.4]	66.0* [51.2, 78.8]			
Gadoxetic acid-enhanced MRI vs. CE-CT					
Min et al.(2020) [21] (size ≤ 19 mm; n= 84)	Equal 100.0 [88.6, 100.0]				
Yoon et al. (2025)[22] (10 mm ≤ size ≤ 19 mm; n= 532)	Higher* 91.7 [87.8, 94.4]			Lower 84.6 [80.0, 88.3]	Lower* 76.0 [74.0, 89.0]
Gadoxetic acid-enhanced MRI vs. ECA-MRI					
Paisant et al.(2020)[23] (10 mm ≤ size ≤ 30 mm; n= 225)			Equal 83.3 72.7–91.1]	Lower* 68.1 [56.0, 78.6]	
Min et al.(2020) [21] (size ≤ 19 mm; n= 84)	Equal 100.0 [88.6, 100.0]				
Min et al. (2021)[24] (20 mm ≤ size ≤ 30 mm; n= 101)	Equal 78.6 [50.6-92.9]		Equal 78.6 [50.6-92.9]		
Min et al. (2021)[24] (10 mm ≤ size ≤ 19 mm; n= 74)	Equal 100 [86.8-100]		Equal 100 [86.8-100]		
Yoon et al. (2023)[25] (10 mm ≤ size ≤ 19 mm; n= 53)				Equal 95.0 [71.8-99.3]	

N, number of lesions; ECA-MRI, extracellular contrast agent-enhanced magnetic resonance imaging; CE-CT, contrast-enhanced computed tomography; TP, transitional phase; LI-RADS, Liver Imaging Reporting and Data System; EASL, European Association for the Study of the Liver; KLCA-NCC, Korean Liver Cancer Association National Cancer Center; APASL, Asian Pacific Association for the Study of the Liver.

“(TP)” indicates washout assessed on the transitional phase; otherwise, on the hepatobiliary phase.

Results from multiple readers were pooled using a fixed-effect model. When calculation of a weighted average was not feasible, the most representative result was reported.

* Statistically significant ($P < 0.05$).

† For lesions <1 mm, LI-RADS categorizes them as LR-4.

Supplementary Table 2. Guideline-Stratified Diagnostic Sensitivity of gadoxetic acid-enhanced MRI for HCC Lesions of All Sizes: Comparison with CE-CT/ECA-MRI

Studies	LI-RADS (v2018)		EASL (v2018)	KLCA-NCC (v2018/2022)	APASL (v2017)
	Without HBP/TP hypointensity	With HBP/TP hypointensity			
Gadoxetic acid-enhanced MRI					
Min et al. (2018)[26] (TP) (size > 0 mm; n= 117)	66.3*	80.0*			
Kim et al.(2019)[27] (50mm ≥ size > 0mm; n= 368)	55.9 [49.8–61.9]				
Lee et al.(2019)[1] (size > 10 mm; n = 422)	81.0 [75.1, 85.6]				
Jiang et al.(2019)[3] (size > 0 mm; n= 229)	86 [80, 91]		91 [85, 95]		
Jiang et al.(2019)[3] (50mm ≥ size > 20mm; n= 83)	80 [68, 89]		85 [74, 93]		
Jiang et al.(2019)[3] (size > 50mm; n= 112)	92 [85, 97]		96 [89, 99]		
Hwang et al.(2019)[4] (TP) [#] (size > 0 mm; n= 214)	61.2* [55.7, 66.7]	77.5* [72.8, 82.2]			
Hwang et al.(2019)[4] (TP) [#] (size ≥ 20mm; n= N/A)	70.6* [64.4, 76.8]	84.9* [79.8, 90.0]			
Kim et al. (2020)[28] (size > 0 mm; n= 165)	73.5				
Jeon et al. (2020)[29] (size > 0 mm; n= 154)	34.5 [26.5, 43.4]		38.8 [30.2, 48.2]	65.5 [54.5, 75.1]	75.9 [65.2, 84.1]
Jeon et al. (2020)[29] (size > 10 mm; n= 137)	37.4 [28.5, 47.2]	71.0 [60.1, 80.0]	42.1 [32.0, 52.9]	71.0 [60.1, 80.0]	75.7 [64.4, 84.3]
Jeon et al. (2020)[29] (size > 20 mm; n= 54)	51.1 [35.7, 66.2]		55.3 [39.0, 70.5]	78.7 [64.6, 88.3]	83.0 [69.0, 91.4]
Lee et al. (2020)[8] (size ≥ 10mm; n= 266)	68.2 [61.7, 74.6]			79.1 [73.5, 84.7]	
Lee et al. (2020)[8] (size ≥ 20mm; n= 162)	75.5 [68.4, 82.7]			80.6 [74.0, 87.2]	
Lee et al. (2020)[9] (size > 10 mm; n= 218)	67.5 [60.3, 74.7]		67.5 [60.3, 74.7]		
Lee et al. (2020)[9] (size ≥ 20 mm; n= 133)	76.1 [68.2, 84.0]		76.1 [68.2, 84.0]		
Cha et al. (2020)[30] (50mm ≥ size ≥ 10mm; n= 147)	59.9* [50.9–68.3]	74.9* [66.4, 81.8]			
Park et al. (2020)[31] (TP) (size > 0 mm; n= 792)	71.9* [67.7, 75.7]	75.6* [71.6, 79.3]			
Ko et al. (2020)[10] (size ≥ 10mm; n= 137)	58.4 [48.1, 68.1]				
Ko et al. (2020)[10] (size ≥ 20mm; n= 47)	70.0 [52.1, 83.3]				
Jiang et al. (2021) [11] (size > 0 mm; n= 568)	60.7				
Jiang et al. (2021) [11] (size > 20 mm; n=175)	90.8				
Lee et al. (2021)[12] (size ≥ 10mm; n= 422)	87.2 [82.2–91.2]			80.8 [75.1–85.6]	
Lee et al. (2021)[12] (size ≥ 20mm; n= 249)	86.8 [81.1–91.3]			82.0 [75.8–87.2]	
Lee et al. (2021)[32] (size ≥ 10mm; n= 366)	66.2* [60.3–71.7]	76.5* [71.1–81.3]			
Hwang et al. (2021)[13] [#] (size > 0 mm; n= 149)	62.7 [57.2, 68.2]		54.0 [48.3, 59.7]	85.0 [80.9, 89.1]	92.0 [88.8, 95.2]
Clarke et al. (2021)[15] (size ≥ 10mm; n= 105)	45		44		64
Zhang et al. (2021)[16] (size ≥ 0 mm; n= 250)	78.1*	82.7*			
Zhang et al. (2021)[16] (size ≥ 20 mm; n= 185)	81.5	83.4			
Kang et al. (2021)[33] (size ≥ 10mm; n= 160)	50.0 [40.6, 89.4]		53.5 [44.0, 62.8]		
Odedra et al.(2022)[34] [#] (size ≥ 10 mm; n= 72)	35.7		32.1	60.7	59.5
Odedra et al.(2022)[34] [#] (size > 0 mm; n= 115)	29.1		26.2	49.5	63.1
Yoon et al. (2024) [19] (size ≥ 10mm; n = 2445)	70.5 [68.8, 72.3]		69.3 [67.5, 71.1]	78.2 [76.6, 79.7]	89.1 [87.8, 90.3]
Hu et al. (2024)[35] (TP) (size > 0 mm; n= 426)	74.4*	80.0*			
Hu et al. (2024)[35] (size > 0 mm; n= 426)	74.4*	80.8*			
Li et al. (2024)[36] (size > 0 mm; n= 445)	82.4 [78.1, 85.9]				

N, number of lesions; ECA-MRI, extracellular contrast agent–enhanced magnetic resonance imaging; CE-CT, contrast-enhanced computed tomography; TP, transitional phase; LI-RADS, Liver Imaging Reporting and Data System; EASL, European Association

for the Study of the Liver; KLCA-NCC, Korean Liver Cancer Association National Cancer Center; APASL, Asian Pacific Association for the Study of the Liver.

“(TP)” indicates washout assessed on the transitional phase; otherwise, on the hepatobiliary phase.

Results from multiple readers were pooled using a fixed-effect model. When calculation of a weighted average was not feasible, the most representative result was reported.

* Statistically significant ($P < 0.05$).

Supplementary Table 2. Guideline-Stratified Diagnostic Sensitivity of gadoxetic acid-enhanced MRI for HCC Lesions of All Sizes: Comparison with CE-CT/ECA-MRI (continue)

Studies	LI-RADS (v2018)		EASL (v2018)	KLCA-NCC (v2018/2022)	APASL (v2017)
	Without HBP /TP hypointensity	With HBP /TP hypointensity			
Gadoxetic acid-enhanced MRI vs. CE-CT					
Yoon et al.(2019)[37] (size ≥ 20 mm; n= 7)	Higher 40.0 [5.3, 85.4]				
Nakao et al.(2020)[38] (size > 0 mm; n= 110)	Lower 37.7%				
Min et al.(2020) [21] (size > 0 mm; n= 163)	Higher 71.2 [62.4, 78.6]				
Min et al.(2020) [21] (size ≥ 20 mm; n= 79)	Higher 75.7 [63.2, 85.0]				
Chen et al.(2020)[39] (size ≥ 10 mm; n= 108)	Higher* 86.9				
Yoon et al. (2025)[22] (size ≥ 10mm; n = 1590)	Lower* 70.6 [68.4, 72.6]			Higher* 78.7 [76.7, 85.0]	Higher* 89.3 [87.7, 90.8]
Gadoxetic acid-enhanced MRI vs. ECA-MRI					
Min et al. (2018)[26] (size > 0 mm; n= 117)	Lower* 66.3				
Kim et al.(2020) [40] (TP) (size ≥ 20; n= 66)	Lower 83.3	Higher 92.4			
Kim et al.(2020) [40] (TP) (size > 0 mm; n= 114)	Higher 78.1	Higher* 91.2			
Cha et al. (2020)[30] (50mm ≥ size ≥ 10mm; n= 147)	Lower* 59.9 [50.9–68.3]	Lower 74.9 [66.4–81.8]			
Min et al.(2020) [21] (size > 0 mm; n= 163)	Lower* 71.2 [62.4, 78.6]				
Min et al.(2020) [21] (size ≥ 20 mm; n= 79)	Lower* 75.7 [63.2, 85.0]				
Lee et al. (2020)[9] (size > 10 mm; n= 218)	Lower* 67.5 [60.3, 74.7]		Lower 67.5 [60.3, 74.7]		
Min et al. (2021)[24] (size > 10 mm; n= 215)	Lower* 67.3 [60.0-73.8]		Lower* 63.0 [55.6-69.9]		
Yoon et al. (2023)[25] (size ≥ 10mm; n= 118)				Higher* 78.5 [69.0-85.7]	
Yoon et al. (2023)[25] (size ≥ 20mm; n= 65)				Higher* 81.7 [69.8-89.5]	
Yoon et al. (2023)[41] (size ≥ 10mm; n= 345)				Higher* 77.0 [71.5–81.9]	

N, number of lesions; ECA-MRI, extracellular contrast agent–enhanced magnetic resonance imaging; CE-CT, contrast-enhanced computed tomography; TP, transitional phase; HBP, hepatobiliary phase; LI-RADS, Liver Imaging Reporting and Data System; EASL, European Association for the Study of the Liver; KLCA-NCC, Korean Liver Cancer Association National Cancer Center; APASL, Asian Pacific Association for the Study of the Liver.

"(TP)" indicates washout assessed on the transitional phase; otherwise, on the hepatobiliary phase.

* Statistically significant ($P < 0.05$).

Supplementary Table 3. Guideline-Stratified Diagnostic Specificity of gadoxetic acid-enhanced MRI for HCC Lesions of All Sizes: Comparison with CE-CT/ECA-MRI

Studies	LI-RADS (v2018)		EASL (v2018)	KLCA-NCC (v2018/2022)	APASL (v2017)
	Without HBP/TP hypointensity	With HBP/TP hypointensity			
Gadoxetic acid-enhanced MRI					
Min et al. (2018)[26] (TP) (size > 0 mm; n= 117)	100	100			
Kim et al.(2019)[27] (50mm ≥ size > 0mm; n= 368)	94.9 [88.1–97.9]				
Lee et al.(2019)[1] (size > 10 mm; n = 422)	91 [85.9, 94.6]				
Jiang et al.(2019)[3] (size > 0 mm; n= 229)	82 [70, 91]		71 [58, 83]		
Jiang et al.(2019)[3] (50mm ≥ size > 20mm; n= 83)	91 [71, 99]		82 [60, 95]		
Jiang et al.(2019)[3] (size > 50mm; n= 112)	76 [53, 92]		62 [38, 82]		
Hwang et al.(2019)[4] (TP)# (size > 0 mm; n= 214)	94.8 [91.3, 98.3]	91.4 [87.2, 95.6]			
Hwang et al.(2019)[4] (TP)# (size ≥ 20mm; n= N/A)	87.1 [75.6, 98.6]	81.7 [69.3, 94.1]			
Kim et al. (2020)[28] (size > 0 mm; n= 165)	76.9				
Jeon et al. (2020)[29] (size > 0 mm; n= 154)	97.4 [83.1, 99.6]		92.1 [77.3, 97.6]	92.1 [77.8, 97.5]	78.9 [62.0, 89.6]
Jeon et al. (2020)[29] (size > 10 mm; n= 137)	96.7 [79.5, 99.5]		90.0 [72.5, 96.9]	90.0 [72.5, 96.9]	80.0 [60.7, 91.2]
Jeon et al. (2020)[29] (size > 20 mm; n= 54)	85.7 [41.9, 98.0]		71.4 [32.7, 92.8]	85.7 [41.9, 98.0]	57.1 [23.0, 85.6]
Lee et al. (2020)[8] (size ≥ 10mm; n= 266)	95.4 [90.3, 100.0]			93.9 [88.0, 99.7]	
Lee et al. (2020)[8] (size ≥ 20mm; n= 162)	91.3 [79.8, 100.0]			91.3 [79.8, 100.0]	
Lee et al. (2020)[9] (size > 10 mm; n= 218)	98.0 [94.7, 100]		96.4 [91.4, 100]		
Lee et al. (2020)[9] (size ≥ 20 mm; n= 133)	95.0 [85.5, 100]		90.0 [76.9, 100]		
Cha et al. (2020)[30] (50mm ≥ size ≥ 10mm; n= 147)	100 [0.87, 1.00]	88.0 [0.70, 0.96]			
Park et al. (2020)[31] (TP) (size > 0 mm; n= 792)	94.4 [91.0, 96.8]	96.8 [94.1, 98.5]			
Ko et al. (2020)[10] (size ≥ 10mm; n= 137)	85.4 [72.8, 92.6]				
Ko et al. (2020)[10] (size ≥ 20mm; n= 47)	76.5 [52.7, 90.5]				
Jiang et al. (2021) [11] (size > 0 mm; n= 568)	94.2				
Jiang et al. (2021) [11] (size > 20 mm; n=175)	56.5				
Lee et al. (2021)[12] (size ≥ 10mm; n= 422)	86.2 [80.4–90.8]			91.0 [85.9–94.6]	
Lee et al. (2021)[12] (size ≥ 20mm; n= 249)	80.0 [67.7–89.2]			83.3 [71.5–91.7]	
Lee et al. (2021)[32] (size ≥ 10mm; n= 366)	96.5 [90.0–99.3]	95.3 [88.4–98.7]			
Hwang et al. (2021)[13]# (size > 0 mm; n= 149)	93.7 [90.0, 97.4]		92.6 [88.5, 96.7]	86.7 [81.8, 91.6]	75.6 [69.4, 81.8]
Clarke et al. (2021)[15] (size ≥ 10mm; n= 105)	89		86		81
Zhang et al. (2021)[16] (size ≥ 0 mm; n= 250)	96.3	96.3			
Zhang et al. (2021)[16] (size ≥ 20 mm; n= 185)	96.4	96.4			
Kang et al. (2021)[33] (size ≥ 10mm; n= 160)	93.2 [81.3, 98.6]		93.2 [81.3, 98.6]		
Odedra et al.(2022)[34]# (size ≥ 10 mm; n= 72)	100.0		100.0	91.7	100.0
Odedra et al.(2022)[34]# (size > 0 mm; n= 115)	100.0		100.0	91.7	100.0
Yoon et al. (2024)[19] (size ≥ 10mm; n = 2445)	89.6 [87.8, 91.2]		88.1 [86.2, 89.9]	84.1 [81.9, 86.0]	52.2 [49.0, 55.4]
Hu et al. (2024)[35] (TP) (size > 0 mm; n= 426)	88.6	86.9			
Hu et al. (2024)[35] (size > 0 mm; n= 426)	88.6	85.8			
Li et al. (2024)[36] (size > 0 mm; n= 445)	90.7 [78.9, 96.5]				

ECA-MRI, extracellular contrast agent–enhanced magnetic resonance imaging; CE-CT, contrast-enhanced computed tomography; TP, transitional phase; HBP, hepatobiliary phase; LI-RADS, Liver Imaging Reporting and Data System; EASL, European Association for

the Study of the Liver; KLCA-NCC, Korean Liver Cancer Association National Cancer Center; APASL, Asian Pacific Association for the Study of the Liver

“(TP)” indicates washout assessed on the transitional phase; otherwise, on the hepatobiliary phase.

Results from multiple readers were pooled using a fixed-effect model. When calculation of a weighted average was not feasible, the most representative result was reported.

* Statistically significant ($P < 0.05$).

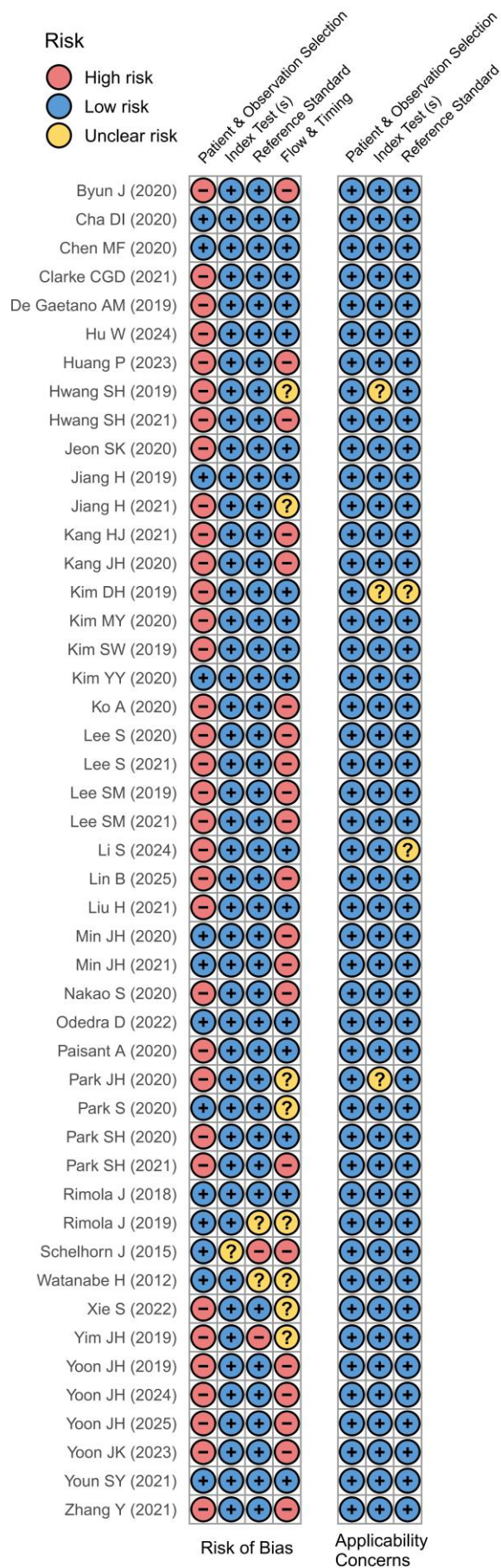
Supplementary Table 3. Guideline-Stratified Diagnostic Specificity of gadoxetic acid-enhanced MRI for HCC Lesions of All Sizes: Comparison with CE-CT/ECA-MRI (continue)

Studies	LI-RADS (v2018)		EASL (v2018)	KLCA-NCC (v2018/2022)	APASL (v2017)
	Without HBP /TP hypointensity	With HBP /TP hypointensity			
Gadoxetic acid-enhanced MRI vs. CECT					
Yoon et al.(2019)[37] (size ≥ 20 mm; n= 7)	Equal 100 [15.8, 100]				
Min et al.(2020) [21] (size > 0 mm; n= 163)	Equal 97.4 [84.6, 99.6]				
Min et al.(2020) [21] (size ≥ 20 mm; n= 79)	Equal 88.9 [50.0, 98.5]				
Chen et al.(2020)[39] (size ≥ 10 mm; n= 108)	Equal 88.9				
Yoon et al. (2025)[22] (size ≥ 10mm; n = 1590)	Higher* 90.4 [88.1, 92.3]			Equal 84.9 [82.1, 87.4]	Lower* 54.3 [50.0, 58.5]
Gadoxetic acid-enhanced MRI vs. ECA-MRI					
Min et al. (2018)[26] (size > 0 mm; n= 117)	Equal 100				
Cha et al. (2020)[30] (50mm ≥ size ≥ 10mm; n= 147)	Equal 100 [0.87, 1.00]	Lower 88.0 [0.70, 0.96]			
Min et al.(2020) [21] (size > 0 mm; n= 163)	Equal 97.4 [84.6, 99.6]				
Min et al.(2020) [21] (size ≥ 20 mm; n= 79)	Equal 88.9 [50.0, 98.5]				
Lee et al. (2020)[9] (size > 10 mm; n= 218)	Higher 98.2 [94.7, 100]		Higher 96.4 [91.4, 100]		
Min et al. (2021)[24] (size > 10 mm; n= 215)	Higher 91.5 [77.0-97.2]		Higher 91.5 [77.0-97.2]		
Yoon et al. (2023)[25] (size ≥ 10mm; n= 118)				Equal 92.0 [73.1-98.0]	
Yoon et al. (2023)[25] (size ≥ 20mm; n= 65)				Equal 80.0 [30.9-97.3]	
Yoon et al. (2023)[41] (size ≥ 10mm; n= 345)				Lower 94.7 (87.1–98.6)	

ECA-MRI, extracellular contrast agent–enhanced magnetic resonance imaging; CE-CT, contrast-enhanced computed tomography; LI-RADS, Liver Imaging Reporting and Data System; EASL, European Association for the Study of the Liver; KLCA-NCC, Korean Liver Cancer Association – National Cancer Center; APASL, Asian Pacific Association for the Study of the Liver

Results from multiple readers were pooled using a fixed-effect model. When calculation of a weighted average was not feasible, the most representative result was reported.

* Statistically significant ($P < 0.05$).



Supplementary Figure 1: Quality assessment of included diagnostic accuracy studies using the Quality Assessment of Diagnostic Accuracy Studies-2 (QUADAS-2) tool. Risk of bias and *Insights Imaging* (2026) Zhou S, Yang J, Zhang S et al.

applicability concerns were evaluated across the four standard domains: patient selection, index test, reference standard, and flow and timing.

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