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Table E1: Abbreviated MRI Strategies for Hepatocellular Carcinoma Surveillance: Literature and Proposed Strategies, and Summary of Diagnostic Performance

Study, Journal, and Reference No.	Country and Year	Technique and Sequences	Time (min)	Study Details	Reference Standard	Sensitivity (%)*	Specificity (%)*	Inter-Reader Agreement (k)*
DCE abbreviated MRI								
Vietti Violi et al, European Radiology (47)	USA, 2020	HBP DCE (sim): T2-weighted and T1-weighted DCE (gadoxetic acid)	17	>15 lesions in 13 of 237 patients	All available patient data	85	100	0.86
Khatri et al, Journal of Magnetic Resonance Imaging (39)	USA, 2019	DCE (sim): T2-weighted and T1-weighted DCE (extracellular contrast material)	12	121 lesions in 86 patients, 28 of whom had HCC	Histologic examination, imaging, and clinical follow-up at 6 months	92	89	0.80, (0.63)†
Lee et al, Abdominal Radiology (40)	USA, 2018	DCE (sim): T1-weighted DCE (extracellular contrast material)	10	27 lesions in 156 patients	LI-RADS 4 and 5 lesions at complete MRI	. . .	. . .	0.305
HPB abbreviated MRI								
Vietti Violi et al, European Radiology (47)	USA, 2020	HBP (sim): T2-weighted, HBP T1-weighted (gadoxetic acid), and DWI	14	>15 lesions in 13 of 237 patients	All available patient data	81	95	(0.75)†
Brunsing et al, Radiology: Imaging Cancer (48)	USA, 2020	HBP (sim): T2-weighted, HBP T1-weighted (gadoxetic acid), and DWI	10	HCC 12 of 141 patients with follow-up (57% lost to follow-up) from 330 total patients	Histopathologic examination, imaging, and clinical follow-up criteria at 1 year	92	91	. . .
Whang S et al, European Radiology (49)	Korea, 2020	HBP (sim): T2-weighted, HBP T1-weighted	10	173 HCCs in 140 of 263 patients.	Imaging and clinical follow-up	89–90, (84)†	92.7	0.98

		(gadoxetic acid), DWI, and nonenhanced abbreviated MRI						
Tillman et al, Clinical Radiology (43)	USA, 2018	HBP (sim) T2-weighted and HBP T1-weighted (gadoxetic acid)	10	27 HCCs in 13 of 79 patients.	Imaging, presumptive treatment per multidisciplinary board consensus, histopathologic examination, resections, and/or explants within 13 months	Set 1: 83 Set 2: 84	. . .	0.75†
Besa et al, Abdominal Radiology (38)	USA, 2017	HBP (sim): axial and coronal T2-weighted, in- and opposed-phase T1-weighted, HBP T1-weighted (gadoxetic acid), and DWI	10	80 HCCs in 62 of 174 patients (surveillance population)	Histopathologic examination or combination of clinical and imaging follow-up at 2 years	81 (78)†	96	0.79–0.88†
Marks et al, American Journal of Radiology (42)	USA, 2015	HBP (sim): Set 1: T2-weighted and HBP T1-weighted Set 2: Set 1 and DWI (gadoxetic acid)	10	49 of 298 patients with HCC	Histopathologic evaluation, imaging, and clinical follow-up criteria at 13 months	Set 1: 83, Set 2: 84	Set 1: 93, Set 2: 93	Set 1: 0.72, Set 2: 0.72
Nonenhanced abbreviated MRI								
Vietti Violi et al European Radiology (47)	USA 2020	Nonenhanced DCE (sim): T2-weighted and DWI	14	>15 lesions in 13 of 237 patients.	All available patient data	62	96	0.76
Park et al, Journal of Hepatology (50)	Korea, 2020	Nonenhanced (sim): T2-weighted, T1-weighted, and DWI	6	48 HCCs in 43 of 382 patients	Clinical, histopathologic examination, or dynamic CT at 6 months	79 (77)†	98	. . .

Whang S et al, European Radiology (49)	Korea, 2020	Nonenhanced (sim): T2-weighted, in- and opposed-phase T1-weighted, DWI and HBP abbreviated MRI	8	173 HCCs in 140 of 263 patients	Imaging and clinical follow-up	86 (80–82)[†]	92.7	0.89
Chan et al, European Radiology Experimental (41)	Australia, 2019	Nonenhanced (sim): T2-weighted, T1-weighted, and DWI	6	42 HCCs in 28 of 188 patients.	Complete MRI	85 (77)[‡]	93	0.51–0.57 (0.23–0.32)[§]
Han S et al, Korean Journal of Radiology (51)	Korea, 2018	Nonenhanced (sim): T2-weighted, T1-weighted, in- and opposed-phase T1-weighted, and DWI	6	237 HCCs in 175 of 247 patients.	Histopathologic examination	83–86 (71–76)[†]	76–88	0.67

Note.—Strategies can be broadly categorized into *(a)* nonenhanced imaging, *(b)* dynamic contrast enhanced imaging, and *(c)* HBP imaging with a hepatobiliary contrast agent. The per-lesion and per-patient sensitivity of abbreviated MRI far surpasses that of US, which is approximately 25%–60%. Per-patient sensitivity of abbreviated MRI was approximately 80%–90%, depending on the protocol. Sim = simulated, DCE = dynamic contrast-enhanced.

***** Unless otherwise indicated, data are per patient.

[†] Data in parentheses are per lesion.

[‡] Data in parentheses are per lesion for LI-RADS 4, 5, and M.

[§] Data in parentheses are per patient for LI-RADS 4,5, and M.