**Appendix I. Evidence Table: Comparative Effectiveness of Imaging Strategies on Clinical Decisionmaking and Patient Outcomes (Cohort Studies)**

**Table I1. Characteristics of cohort studies of effectiveness of imaging strategies on clinical decisionmaking and patient outcomes**

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| **Author,**  **Year** | **Imaging Tests Evaluated** | **Details of Imaging Tests** | **Definition of a Positive Test on Imaging and Followup** | **Population Characteristics** | **Eligibility Criteria** | **Country, Setting** | **Number Approached, Eligible, Enrolled, Analyzed** |
| Chen MH, 2007[280](#_ENREF_280) | A: CEUS  B: Conventional US in control group plus contrast-enhanced CT or MRI within one week of RFA | Contrast-enhanced US  Operator: Performed by 3 experienced sonographers  Contrast: sulfur hexaflouride (Sonovue) administered as 2.4 ml bolus over 2 to 3 s  Transducer frequency: 2.5 to 5.0 MHz (3 systems used)  Contrast-enhanced CT  64-slice spiral CT scanner used, other details NR; Images read by 3 experienced radiologists  MRI  1.5 T MRI scanner, other details NR; Images read by 3 experienced radiologists | On CEUS, quick enhancement in arterial phase with fast washout in portal or parenchymal phase; repeat CEUS was done if first CEUS suspicious for new tumor; patients selected for RFA on basis of tumor size, number, position, and anatomic relationship with surrounding structures | Age (mean): 67.2a years  Male: 62%  Race: NR | Patients with HCC diagnosed on imaging or histology | China; enrolled patients, source not reported | 18 to 50 months |
| Chen MH, 2007 (2)[281](#_ENREF_281) | A: CEUS plus contrast (n=81)  B: Ultrasound without contrast plus CT (n=86) | Contrast-enhanced US  Operator: 2 radiologists with experience in interventional US and CEUS  Contrast: sulfur hexaflouride (Sonovue) suspension (2.4 ml) administered through by bolus injection in 1-3 s  Transducer frequency: approximately 2.5-5 MHz.  MI used in CEUS imaging: 0.04 to 0.1.  Contrast-enhanced CT  Technical information not reported | RFA was considered successful if no arterial and portal enhancement was seen in and around the tumor; ultrasound guided biopsy was performed to confirm the pathology of recurrent or new lesions; complete necrosis was defined by CECT examination as the absence of viable tissue in the treated tumor upon 1 year follow-up | Age (mean): 60.2a years  Male: 82%  Race: NR | Patients with HCC meeting 5 criteria: no more than four lesions; tumor diameter less than 8 cm; nothrombosis in the main branch of the portal vein and no extrahepatic  metastases; prothrombin time ratio greater than 50% of normal and platelet count greater than 50,000/ml;  biopsy proof of malignancy for  at least one hepatic lesion | China  Setting: Not reported  Duration of follow-up:  1 year | Number approached and eligible: Not reported  Number enrolled and analyzed: 167 (81 vs. 86) |

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| --- | --- | --- | --- | --- | --- | --- |
| **Author,**  **Year** | **Comparison Groups** | **Adjusted Variables for Statistical Analysis** | **Outcomes** | **Adverse Events** | **Funding Source** | **Risk of Bias** |
| Chen MH, 2007[280](#_ENREF_280) | Screening: CEUS plus contrast-enhanced CT (n=81) or MRI (n=11)  Control: conventional ultrasound plus contrast-enhanced CT (n=74) or MRI (n=13) | No adjustments | Screening vs. control  Local tumor progression rate, % (n)  7.2 (6/83) vs. 18.3 (15/82); p=0.033; RRa, 0.40 (95% CI 0.16 to 0.87)  New HCC rate, % (n)  15.7 (13/83) vs. 35.4 (29/82); p=0.004; RRa, 0.44 (95% CI 0.25 to 0.79)  Mean local progression-free survival (months)  40.5 (SD 1.9) vs. 33.3 (2.2); p=0.015  New tumor-free survival (months)  38.1 (SD 2.0) vs. 26.4 (SD 2.0); p<0.001 | Not reported for screening | NR | High |
| Chen MH, 2007 (2)[281](#_ENREF_281) | A: CEUS plus contrast (n=81)  B: Ultrasound without contrast plus CT (n=86) | NR | CEUS vs. US without contrast  Detection rates for small (≤2 cm) HCC lesions , % (n)  94.7 vs. 81.6: p =0.001 (36 vs. 31)  Complete tumor necrosis rate 1 year after RFA:  92%(106/115) vs. 83% (93/112 lesions), p=0.036 | None reported | NR | High |

CT = computed tomography; HCC = hepatocellular cancer; MRI = magnetic resonance imaging; NR = not reported; RFA = radiofrequency ablation; US = ultrasound

a Calculated