APPENDIX B: Key Question 1 Evidence to Decision Table

QUESTION

Should MWA ablation (laparoscopic or open) vs. RFA ablation (laparoscopic or open) be used for HCC or CRLM less than 5cm?	
POPULATION:	HCC or CRLM less than 5cm
INTERVENTION:	MWA ablation (laparoscopic or open)
COMPARISON:	RFA ablation (laparoscopic or open)
MAIN OUTCOMES:	Perioperative Complications; Disease Free Survival 1yr; Disease Free Survival 3 yr; Disease Free Survival 5yr; Incomplete Ablation; Overall Survival 1yr; Overall Survival 3yr; Overall Survival 5yr; Local/Regional Reccurence;
SETTING:	
PERSPECTIVE:	**PATIENT-CENTERED**
BACKGROUND:	
CONFLICT OF INTERESTS:	

ASSESSMENT

Problem

Is the problem a priority?

JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ No ○ Probably no ○ Probably yes ● Yes ○ Varies ○ Don't know		

Desirable Effects

How substantial are the desirable anticipated effects?

JUDGEMENT	**RESEARCH EVIDENCE**	**ADDITIONAL CONSIDERATIONS**
○ Trivial ● Small ○ Moderate ○ Large ○ Varies ○ Don't know	Vote: 80% (8/10)	

Outcomes	**№ of participants (studies) Follow-up**	**Certainty of the evidence (GRADE)**	**Relative effect (95% CI)**	**Anticipated absolute effects*** **(95% CI)**	
				Risk with RFA ablation (laparoscopic or open)	**Risk difference with MWA ablation (laparoscopic or open)**
				Study population	

Perioperative Complications	882 (8 observational studies)	⊕◯◯◯ Very low[a,b]	**RR 0.98** (0.72 to 1.33)	165 per 1,000	**3 fewer per 1,000** (46 fewer to 54 more)
Disease Free Survival 5yr	177 (4 observational studies)	⊕◯◯◯ Very low[a,b]	**RR 1.09** (0.79 to 1.51)	Study population	
				358 per 1,000	**32 more per 1,000** (75 fewer to 183 more)
Incomplete Ablation	715 (6 observational studies)	⊕◯◯◯ Very low[a,b]	**RR 0.92** (0.40 to 2.11)	Study population	
				35 per 1,000	**3 fewer per 1,000** (21 fewer to 39 more)
Overall Survival 5yr	782 (6 observational studies)	⊕◯◯◯ Very low[a,b]	**RR 1.01** (0.91 to 1.11)	Study population	
				660 per 1,000	**7 more per 1,000** (59 fewer to 73 more)
Local/Regional Reccurence	668 (6 observational studies)	⊕◯◯◯ Very low[a,b]	**RR 0.97** (0.73 to 1.30)	Study population	
				360 per 1,000	**11 fewer per 1,000** (97 fewer to 108 more)

a. There were several larger studies that had a high risk of bias due to baseline differences in the cohorts that were not controlled for with statistical matching.
b. In addition to having a small event rate, the range of estimated effects crossed several clinically meaningful thresholds from important benefits to important harms.

Undesirable Effects

How substantial are the undesirable anticipated effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Large ○ Moderate ○ Small ○ Trivial ○ Varies ● Don't know	There were no undesirable effects for the important or critical outcomes. Vote: 100% (10/10)	

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
● Very low ○ Low ○ Moderate ○ High ○ No included studies	Vote: 100% (10/10)	

Outcomes	Importance	Certainty of the evidence (GRADE)
Perioperative Complications	CRITICAL	⨁◯◯◯ Very low[a,b]
Disease Free Survival 5yr	CRITICAL	⨁◯◯◯ Very low[a,b]
Incomplete Ablation	IMPORTANT	⨁◯◯◯ Very low[a,b]
Overall Survival 5yr	CRITICAL	⨁◯◯◯ Very low[a,b]
Local/Regional Reccurence	IMPORTANT	⨁◯◯◯ Very low[a,b]

a. There were several larger studies that had a high risk of bias due to baseline differences in the cohorts that were not controlled for with statistical matching.
b. In addition to having a small event rate, the range of estimated effects crossed several clinically meaningful thresholds from important benefits to important harms.

Values

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ Important uncertainty or variability ○ Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ● No important uncertainty or variability	Vote: 90% (9/10)	

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS

○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ● Probably favors the intervention ○ Favors the intervention ○ Varies ○ Don't know	Vote: 100% (9/9)	

Acceptability

Is the intervention acceptable to key stakeholders?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know	Vote: 100% (9/9)	

Feasibility

Is the intervention feasible to implement?

JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
○ No ○ Probably no ● Probably yes ○ Yes ○ Varies ○ Don't know	Vote: 100% (9/9)	MWA easier to use than RFA (Difficult equipment to use) MWA more expensive than RFA

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	**Yes**		Varies	Don't know
DESIRABLE EFFECTS	Trivial	**Small**	Moderate	Large		Varies	Don't know
UNDESIRABLE EFFECTS	Large	Moderate	Small	Trivial		Varies	**Don't know**
CERTAINTY OF EVIDENCE	**Very low**	Low	Moderate	High			No included studies
VALUES	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	**No important uncertainty or variability**			

	JUDGEMENT						
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	**Probably favors the intervention**	Favors the intervention	Varies	Don't know
ACCEPTABILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	**Probably yes**	Yes		Varies	Don't know

TYPE OF RECOMMENDATION

Strong recommendation against the intervention	Conditional recommendation against the intervention	Conditional recommendation for either the intervention or the comparison	**Conditional recommendation for the intervention**	Strong recommendation for the intervention
○	○	○	●	○

CONCLUSIONS

Recommendation

Final Vote: 89% (8/9)

Justification

Subgroup considerations

Implementation considerations

Monitoring and evaluation

Research priorities

- Studies need to be clearer in their definitions of outcomes (i.e. local regional recurrence – at the site of treatment vs. anywhere in liver ◊ Ablation vs. disease problem)
- May be necessary to study HCC and CRLM separately
-similar surgical procedures
-Subgroup – other neoplasms of liver
-Selection bias within Ablation and approach
-Long term follow up of studies needed in more studies
-RCT comparing MWA vs. RFA
-Larger studies powered to detect difference
-Cancer specific survival vs. overall survival especially in HCC
-Need to standardize definitions of locoregional recurrence based on treatment vs. disease