# **Supplementary Table 1 -** Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist.

Section/topic	#	Prisma Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	5
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	6
METHODS	-		
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	7
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	7
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	7
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	7
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	8
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	9

Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	9
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	9-10
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	11
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I <sup>2</sup> ) for each meta-analysis.	11

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	9-10
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	11
RESULTS	-		
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	12
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	12
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	12-13
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	13
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	13-14
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	12
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	14
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	14

Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	
FUNDING		·	
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	1

**Supplementary Table 2 -** MOOSE Statement - Reporting Checklist for Authors, Editors, and Reviewers of Meta-analyses of Observational Studies

Reporting Criteria	Reported (Yes/No)	Reported on Page
Reporting of Background	Yes	See Introduction- pp 6-7
Problem definition	Yes	See Introduction- p 7
Hypothesis statement	Yes	See Introduction- p 7
Description of Study Outcome(s)	Yes	See Introduction- p 7
Type of exposure or intervention used	Yes	See Material and methods- pp 7-8
Type of study design used	Yes	See Material and methods- pp 7-8
Study population	Yes	See Material and methods – pp 7-8
Reporting of Search Strategy		
Qualifications of searchers (e.g. librarians and investigators)	Yes	See Material and methods- Data sources and searches- pp 8-9
Search strategy, including time period	Yes	See Material and methods- Data sources and searches- pp 8-9
included in the synthesis and keywords		
Effort to include all available studies,	Yes	See Material and methods- Data sources and searches- pp 8-9
including contact with authors		
Databases and registries searched	Yes	See Material and methods- Data sources and searches- p 8-9
Search software used, name and	Yes	See Material and methods- Data sources and searches- p 9-10
version, including special features used		
(e.g, explosion)		
Use of hand searching (e.g. reference	Yes	See Material and methods- Data sources and searches- p 9-10
lists of obtained articles)		
List of citations located and those	Yes	See Flow-chart Figure 1
excluded, including justification		Reference to Figure 1 at Page 15
Method for addressing articles	No	Articles published in non-English languages were not searched-
published in languages other than		Explanation of why we did not include studies in non-English
English		languages is reported in the Methods at page 8 in the section Data
		Sources and Searches
Method of handling abstracts and	Yes	Gray literature was searched but no abstracts or manuscripts were
unpublished studies		identified –
		Mara dataila about arou literature is reported in the section of
		Moterial and methods Date Sources and accretion of
Description of any contact with outborn	No	Material and methods Data Sources and searches- see pp 6-9
Description of any contact with authors	NO	avalation of the Methods in the section Data Sources and
		Sources at page 8
Reporting of Methods		
Description of relevance or	Ves	See Material and methods, Study characteristics, p.10 and Table 1
appropriateness of studies assembled for	103	bee material and methods- blody characteristics-p-to and rable r
assessing the hypothesis to be tested		
Rationale for the selection and coding of	Yes	See Material and methods- Summary statistics- n 11
data (e.g. sound clinical principles or	100	
convenience)		
Documentation of how data were	Yes	See Methods- Assessment of Bias p 11
classified and coded (e.g. multiple raters.		
blinding, and interrater reliability)		
Assessment of confounding (e.g.	Yes	See Data sources and Searches at pp 8-9

comparability of cases and controls in		
studies where appropriate		
Assessment of study quality, including	Yes	See Assessment of Bias, pp 11
blinding of quality assessors.		See Study Characteristics at p 16
stratification or regression on possible		See meta-regression at p 19
predictors of study results YES 5		
Assessment of heterogeneity	Yes	See Meta-regression and other sensitivity analyses at p 19
Description of statistical methods (e.g.	Yes	See methods section summary statistics at p 13, See Data
complete description of fixed or random		Synthesis at p 14
effects models, justification of whether		
the chosen models account for predictors		
of study results, dose-response models,		
or cumulative meta-analysis) in sufficient		
detail to be replicated		
Provision of appropriate tables and	Yes	Results- p 16, Table 1.
graphics		Results- p 16, Table 2.
		Results- p 16, Table 3.
		Results- p 17, Table 4.
		Results- p 17, Figure 2A
		Results- p 17, Figure 2B
		Results- p 18, Figure 3A
		Results- p 18. Figure 3B
Reporting of Results		
Reporting of Results           Table giving descriptive information for	Yes	Results- p 16, Table 2
Reporting of Results           Table giving descriptive information for each study included	Yes	Results- p 16, Table 2 Results- p 16, Table 3
Reporting of Results           Table giving descriptive information for each study included           Results of sensitivity testing (e.g.	Yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)	Yes Yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of	Yes Yes yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20 Results- pp17-20
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings	Yes Yes yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20 Results- pp17-20 Discussion pp 19-20
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion	Yes Yes yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20 Results- pp17-20 Discussion pp 19-20
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,	Yes Yes yes Yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20 Results- pp17-20 Discussion pp 19-20 Methods- Assessment of bias- p 11
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)	Yes Yes yes Yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20 Results- pp17-20 Discussion pp 19-20 Methods- Assessment of bias- p 11
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion	Yes Yes yes Yes Yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20 Results- pp17-20 Discussion pp 19-20 Methods- Assessment of bias- p 11 Methods- Data sources and searches- p 8
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion         of non–English-language citations)	Yes Yes yes Yes Yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20 Results- pp17-20 Discussion pp 19-20 Methods- Assessment of bias- p 11 Methods- Data sources and searches- p 8
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion         of non–English-language citations)         Assessment of quality of included studies	Yes Yes yes Yes Yes Yes	Results- p 16, Table 2         Results- p 16, Table 3         Results- p 19, Meta-regression and sensitivity analysis- pp 19-20         Results- pp17-20         Discussion pp 19-20         Methods- Assessment of bias- p 11         Methods- Data sources and searches- p 8         Discussion- p 22
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion         of non–English-language citations)         Assessment of quality of included studies         Reporting of Conclusions	Yes Yes yes Yes Yes Yes	Results- p 16, Table 2 Results- p 16, Table 3 Results- p 19, Meta-regression and sensitivity analysis- pp 19-20 Results- pp17-20 Discussion pp 19-20 Methods- Assessment of bias- p 11 Methods- Data sources and searches- p 8 Discussion- p 22
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion         of non–English-language citations)         Assessment of quality of included studies         Reporting of Conclusions         Consideration of alternative explanations	Yes Yes yes Yes Yes Yes Yes	Results- p 16, Table 2         Results- p 16, Table 3         Results- p 19, Meta-regression and sensitivity analysis- pp 19-20         Results- pp17-20         Discussion pp 19-20         Methods- Assessment of bias- p 11         Methods- Data sources and searches- p 8         Discussion- p 22         Discussion- pp 20-22
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion         of non–English-language citations)         Assessment of quality of included studies         Reporting of Conclusions         Consideration of alternative explanations         for observed results	Yes Yes yes Yes Yes Yes Yes	Results- p 16, Table 2         Results- p 16, Table 3         Results- p 19, Meta-regression and sensitivity analysis- pp 19-20         Results- pp17-20         Discussion pp 19-20         Methods- Assessment of bias- p 11         Methods- Data sources and searches- p 8         Discussion- p 22         Discussion- pp 20-22
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion         of non–English-language citations)         Assessment of quality of included studies         Reporting of Conclusions         Consideration of alternative explanations         for observed results         Generalization of the conclusions (i.e.	Yes Yes yes Yes Yes Yes Yes Yes	Results- p 16, Table 2         Results- p 16, Table 3         Results- p 19, Meta-regression and sensitivity analysis- pp 19-20         Results- pp17-20         Discussion pp 19-20         Methods- Assessment of bias- p 11         Methods- Data sources and searches- p 8         Discussion- p 22         Discussion- pp 20-22         Discussion- pp 22-26
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion         of non–English-language citations)         Assessment of quality of included studies         Reporting of Conclusions         Consideration of alternative explanations         for observed results         Generalization of the conclusions (i.e.         appropriate for the data presented and	Yes Yes yes Yes Yes Yes Yes Yes	Results- p 16, Table 2         Results- p 16, Table 3         Results- p 19, Meta-regression and sensitivity analysis- pp 19-20         Results- pp17-20         Discussion pp 19-20         Methods- Assessment of bias- p 11         Methods- Data sources and searches- p 8         Discussion- p 22         Discussion- pp 20-22         Discussion- pp 22-26
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion         of non–English-language citations)         Assessment of quality of included studies         Reporting of Conclusions         Consideration of alternative explanations         for observed results         Generalization of the conclusions (i.e.         appropriate for the data presented and         within the domain of the literature review)	Yes Yes yes Yes Yes Yes Yes Yes	Results- p 16, Table 2         Results- p 16, Table 3         Results- p 19, Meta-regression and sensitivity analysis- pp 19-20         Results- pp17-20         Discussion pp 19-20         Methods- Assessment of bias- p 11         Methods- Data sources and searches- p 8         Discussion- p 22         Discussion- pp 20-22         Discussion- pp 22-26
Reporting of Results         Table giving descriptive information for         each study included         Results of sensitivity testing (e.g.         subgroup analysis)         Indication of statistical uncertainty of         findings         Reporting of Discussion         Quantitative assessment of bias (e.g.,         publication bias)         Justification for exclusion (e.g. exclusion         of non-English-language citations)         Assessment of quality of included studies         Reporting of Conclusions         Consideration of alternative explanations         for observed results         Generalization of the conclusions (i.e.         appropriate for the data presented and         within the domain of the literature review)         Guidelines for future research	Yes Yes yes Yes Yes Yes Yes Yes Yes	Results- p 16, Table 2         Results- p 16, Table 3         Results- p 19, Meta-regression and sensitivity analysis- pp 19-20         Results- pp17-20         Discussion pp 19-20         Methods- Assessment of bias- p 11         Methods- Data sources and searches- p 8         Discussion- p 22         Discussion- pp 20-22         Discussion- pp 22-26         Discussion- pp 26-28

**Supplementary Table 3** Example of The Newcastle-Ottawa Scale (NOS) for grading the quality of studies included in this metaanalysis. A study can be awarded a maximum of one star for each numbered item within the Selection and Exposure categories. A maximum of two stars can be given for Comparability.

#### **Selection (First Domain)**

#### 1) Is the case definition adequate?

a) yes, with independent validation \*b) yes, e.g. record linkage or based on self-reportsc) no description

#### 2) Representativeness of the cases

a) consecutive or obviously representative series of cases \*b) potential for selection biases or not stated

#### 3) Selection of Controls

a) community controls \*b) hospital controlsc) no description

#### 4) Definition of Controls

a) no history of disease (endpoint) \*b) no description of source Comparability

#### **Comparability (Second Domain)**

#### 1) Comparability of cases and controls based on the design or analysis

a) study controls for \_\_\_\_\_\_ (Select the most important factor.) \*
b) study controls for any additional factor \* (This criterion could be modified to indicate specific control for a second important factor.)

#### **Exposure (Third Domain)**

1) Ascertainment of exposure

a) secure record (e.g. surgical records) \*
b) structured interview where blind to case/control status \*
c) interview not blinded to case/control status
d) written self-report or medical record only
e) no description

2) Same method of ascertainment for cases and controls

a) yes \* b) no

3) Non-Response rate

a) same rate for both groups \*

b) non respondents described

c) rate different and no designation

# Supplementary Table 4.

## Characteristics of the included studies

Authors					Total N	NAFLD(+)	NAFLD(-)	Median or	Reported
(Reference)	Publication Year	Country	Study Design	Timeframe	Patients	N. Patients	N. Patients	Mean Follow- up (Months)	Outcomes
Wakai [30]	2011	Japan	RCC	1990-2007	225	17	208	87	OS and DFS
Wu [28]	2011	Taiwan	RCC	1999-2005	1,048	355	693	53.1	OS
Ishizuka [24]	2013	Japan	RCC	2000-2008	377	40	337	27.3	OS and DFS
Cauchy [25]	2013	France	RCC	2000-2011	62	38	24	24	OS
Nishio [33]	2015	Japan	RCC	2000-2011	456	19	437	75.4	OS and DFS
Vigano [31]	2015	Italy	RCC	2000-2012	192	96	96	44.6	OS and DFS
Mikuriya [34]	2015	Japan	RCC	1998-2011	666	21	645	-	OS and DFS
Su [23]	2015	Taiwan	RCC	1991-2006	188	74	114	69.8	OS
Tian [32]	2017	China	RCC	2009-2012	1,235	81	1154	40.2	OS and DFS
Kimura [37]	2017	Japan	RCC	1996-2012	77	30	47	-	OS and DFS
Wong [29]	2017	United States	RCC	1991-2011	866	179	687	-	OS
Pais [26]	2017	France	RCC	1995-2014	323	39	284	-	DFS
Liang [35]	2019	Japan	RCC	2002-2015	177	75	102	52	OS and DFS
Koh [36]	2019	Singapore	RCC	2000-2015	996	152	844	-	OS and DFS
Yoon [27]	2020	South Korea	RCC	2009-2013	338	196	142	72.3	OS and DFS
Total N. Patients					7,226	1,412	5,814		

Legend: Retrospective Cohort (RCC); Overall Survival (OS); Disease Free Survival (DFS)

**Supplementary Table 5.** Quality assessment of the included studies based on the Newcastle-Ottawa Scale (NOS) for nonrandomized studies. The quality of each study was judged on three domains: the selection of the study groups, the comparability of the groups, and the ascertainment of the outcome of interest. The NOS assigns up to a maximum of nine stars (points) for the least risk of bias. A study can be awarded a maximum of one star for each item within the selection and exposure categories. A maximum of two stars can be awarded for comparability of cases and controls. Studies with seven or more stars are categorized as good quality, five to six stars indicate fair quality, and four or fewer stars indicate poor quality.

Primary Author	Adequate definition of cases	Representativeness of cases	Selection of control	Definition of control	Comparability of cases and controls	Exposure assessment	Same method of ascertainment for cases and controls	Nonresponsive rate	Total quality score
Wakai	*	*	*	*	**	*	*		8
Wu	*	*	*	*	*	*	*		7
Ishizuka	*	*	*	*	*	*	*		7
Cauchy	*	*	*	*	*	*	*	*	8
Nishio	*	*	*	*	*	*	*		7
Vigano	*	*	*	*	**	*	*		8
Mikuriya	*	*	*	*	**	*	*	*	9
Su	*	*	*	*	*	*	*		7
Tian	*	*	*	*	**	*	*	*	9
Kimura	*	*	*	*	**	*	*		8
Wong	*	*	*	*	*	*	*	*	8
Pais	*	*	*	*	**	*	*		8
Liang	*	*	*	*	**	*	*		8
Koh	*	*	*	*	**	*	*		8
Yoon	*	*	*	*	**	*	*	*	9



**Supplementary Figure 1S.** Funnel plot illustrating each study's effect with reference to their sample size. There was a symmetric distribution of the plot indicating a low risk of publication bias (Egger's regression; P=0.23).

**Supplementary Table 6** Clinical characteristics and tumor characteristics of patients treated with hepatic resection for hepatocellular carcinoma stratified by the presence or absence of non-alcoholic fatty liver disease as a predisposing factor for the development of the tumor.

	NAFLD(+)							NAFLD(-)						
Author s (Refere nce)	Freque ncy of Follow- up after Hepatic Resecti on	Treatment of Recurrent Disease	N of patient s (Diagn osis)	Medi an or Mean Age (Years )	Medi an or Mean Size of larges t Tumo r (mm)	Patien ts with Cirrho sis (%)	Media n or Mean AFP (ng/m L)	Periopera tive Mortality (%)	N of patients (Diagnosi s)	Median or Mean Age (Years)	Media n or Mean Size of Largest Tumor (mm)	Patients with Cirrhosi s (%)	Median or Mean AFP (ng/mL)	Periopera tive Mortality (%)
Wak	3 months	-	17	<u>&lt;</u> 65 (n. 4 pts)	<u>&lt;</u> 50 (n. 9 pts)	75	<u>&lt;</u> 20 (n. 9 pts)	12	147 (HCV+)	<u>&lt;</u> 65 (n. 63 pts) >65 (n. 84 pts)	≤50 (n. 122 pts) >50 (n. 25 pts)	-	<u>&lt;</u> 20 (n. 64 pts) >20 (n. 83 pts)	0.7
di	montins			/03 (n. 13 pts)	/50 (n. 8 pts)		/n. 8 pts)		61 (HBV+)	<u>&lt;</u> 65 (n. 47 pts) >65 (n. 14 pts)	<u>&lt;</u> 50 (n. 40 pts) >50 (n. 21 pts)	-	<u>&lt;</u> 20 (n. 22 pts) >20 (n. 39 pts)	3.3
Wu	3 months	Re- resection or Ablation or TACE or Systemic Chemother apy	355	57.4	46.1 (34.0)	58.6	27	4.5	438 (HBV+) 202 (HBV+) 53 (Other Condition s)	55.7	59.1	58.6	72.5	4.9
lshiz uka	-		40	66	<u>&lt;</u> 20 (n. pts 5) >20 (n. pts 35)	32.5	1,030	-	337 (HBV+/HC V+)	65	<pre>&lt;20 (n. pts 119) &gt;20 (n. pts 218)</pre>	62	9,330	-
Cauc hy	-	-	38	68	71	26.3	≤10 (n. 27 pts) >10 (n. 11 pts)	18	24 (Normal liver)	72	94	45.8	<u>&lt;</u> 10 (n. 14 pts) >10 (n. 10 pts)	0
Nishi o	-	-	19	69	52	10.5	420.8	-	373 (HCV+/HB V+)	69	48	41.8	12,133	-

									43 (ETOH)	68	55	30.2	4,984	-
									21 (Cryptoge nic)	62	97	19.1	11,400	-
Vigan o	-	Re- resection or Ablation or TACE or Liver Transplant ation	96	71	<u>&lt;</u> 50 (n. 48 pts) >50 (n. 48 pts)	22.9	≤10 (n. 40 pts) >10 (n. 52 pts)	1	96 (HCV+)	69	<u>&lt;</u> 50 (n. 48 pts) >50 (n. 48 pts)	22.9	≤10 (n. 51 pts) >10 (n. 42 pts)	3
Miku riya	-	-	21	69	47.2	-	2,906	0	645 (HCV+)	66	33.7	-	1,632	0
Su	3 months	-	7 (Non viral cirrhosi s) 55 (HBV+) 12 (HCV+)	60	25	58.1	38.4	-	82 (HBV+) 28 (HCV+) 4 (Other)	62	25	59.6	15.9	-
Tian	-	-	81	52	<u>&lt;</u> 50 (n. 6 pts) >50 (n. 75 pts)	51.8	-	2.4	1,154 (HBV+)	50	<u>&lt;</u> 50 (n. 473 pts) >50 (n. 681 pts)	78.7	-	2.1
									31 (ETOH)	69	25	84	-	-
Kimu ra		-	30	71	41	63	-	-	16 (Cryptoge nic)	75	67	25	-	-
Won g	-	-	179	-	-	-	-	-	215 (HBV+) 413 (HCV+) 59 (ETOH)	-	-	-	-	
									74 (HBV+)	51		72	_	
Pais	-	-	39	70	87	37	27	-	85 (HCV+)	61	62	93	38	-
									31 (ETOH)	64		84		
									23 (HBV+)					
Liang		-	75	73	48	12	7	-	51 (HCV+)	73	34	48	14	-
									28 (ETOH)					
Koh	3 months	-	152	69	7	34.2	<200 (n. 119 pts) 200-	-	844 (HBV+ or HCV+ or other causes)	63	40	51.1	<200 (n. 583 pts) 200- 400 (n.	

						400 (n. 4 pts) >400 (n. 29 pts)						24 pts) >400 (n. 237 pts)	
Yoon	3 months	196 NAFLD + and HBV+	55	30	-	11.9	-	142 NAFLD- and HBV+	57	40	-	24.2	-

Legend: Non-alcoholic fatty liver disease (NAFLD), Trans-arterial chemoembolization (TACE), Viral Hepatitis B (HBV), Viral Hepatitis C (HCV), Alcohol Induced Liver Disease (ETOH), Al pha Feto-Protein (AFP)

Legend: Non-alcoholic fatty liver disease (NAFLD), Trans-arterial chemoembolization (TACE), Viral Hepatitis B (HBV), Viral Hepatitis C (HCV), Alcohol Induced Liver Disease (ETOH), Alpha Feto-Protein (AFP)

**Supplementary Table 7**. Disease free survival of patients with nonalcoholic fatty liver disease (NAFLD+) in comparison to patients without nonalcoholic fatty liver disease (NAFLD-) after radical hepatic resections for hepatocellular carcinoma (HCC).

				Disease Free Survival							
A		<b>C</b>		1-yea	ar (%)	3-yea	r (%)	5-year (%)			
Authors		Comp	arison Groups	NAFLD(+)	NAFLD(-)	NAFLD(+)	NAFLD(-)	NAFLD(+)	NAFLD(-)		
Wu	NAFLD(+)	VS.	HBV(+) / HCV(+)	71.4	59.3	45.6	39.6	33.5	32.6		
Wakai	NAFLD(+)	vs.	HBV(+)	80.2	69.0	65.7	51.5	66.0	39.0		
Wakai	NAFLD(+)	vs.	HCV(+)	80.2	69.0	65.7	39.4	66.0	29.0		
Ishizuka	NAFLD(+)	vs.	HBV(+) / HCV(+)	71.8	65.2	45.0	29.3	24.4	19.6		
Vigano	NAFLD(+)	vs.	HCV(+)	76.0	73.5	56.9	39.3	37.0	27.5		
Nishio	NAFLD(+)	vs.	HBV(+) / HCV(+)	81.3	68.3	62.5	38.6	62.5	28.2		
Nishio	NAFLD(+)	vs.	Cryptogenic	81.3	64.0	62.5	30.1	62.5	28.1		
Nishio	NAFLD(+)	vs.	ETOH	81.3	63.8	62.5	32.3	62.5	17.4		
Mikuriya	NAFLD(+)	vs.	HCV(+)	80.1	70.4	29.1	39.5	29.2	26.1		
Tian	NAFLD(+)	vs.	HBV(+)	95.1	76.1	72.8	52.5	53.1	39.8		
Kimura	NAFLD(+)	vs.	Cryptogenic	76.8	68.8	42.3	44.2	42.3	44.2		
Kimura	NAFLD(+)	vs.	ETOH	76.8	77.1	42.3	43.3	42.3	29.2		
Koh	NAFLD(+)	vs.	NAFLD(-)	78.0	74.5	60.9	51.2	45.4	40.8		
Liang	NAFLD(+)	vs.	HBV(+) / HCV(+) / ETOH	80.8	69.0	58.0	34.8	50.9	25.1		
Yoon	NAFLD(+)	VS.	NAFLD(-)	85.7	75.6	65.3	54.9	52.8	46.9		

Legend: Nonalcoholic fatty liver disease (NAFLD), Viral hepatitis B (HBV), Viral hepatitis C (HCV), alcoholic liver disease (ETOH).

**Supplementary Table 8**. Overall survival of patients with nonalcoholic fatty liver disease (NAFLD+) in comparison to patients without nonalcoholic fatty liver disease (NAFLD-) after radical hepatic resections for hepatocellular carcinoma (HCC).

				Overall Survival					
Authors	Comparison Groups			1-year survival (%)		3-year survival (%)		5-year Survival (%)	
(Reference)				NAFLD(+)	NAFLD(-)	NAFLD(+)	NAFLD(-)	NAFLD(+)	NAFLD(-)
Wu	NAFLD(+)	VS.	HBV(+) / HCV(+)	88.6	83.2	71.7	60.8	61.6	49.8
Wakai	NAFLD(+)	VS.	HBV(+)	92.8	90.6	70.2	72.7	59.0	63.0
Wakai	NAFLD(+)	VS.	HCV(+)	92.8	93.5	64.0	74.4	59.0	57.0
Cauchy	NAFLD(+)	VS.	NAFLD(-)	78.0	90.0	64.0	90.0	-	-
Ishizuka	NAFLD(+)	VS.	HBV(+) / HCV(+)	86.2	88.7	75.1	69.3	53.7	51.2
Vigano	NAFLD(+)	VS.	HCV(+)	96.8	96.9	81.3	73.0	65.6	61.4
Nishio	NAFLD(+)	VS.	HBV(+) / HCV(+)	94.6	86.5	88.6	66.1	76.5	55.3
Nishio	NAFLD(+)	VS.	Cryptogenic	94.6	84.6	88.6	59.8	76.5	49.1
Nishio	NAFLD(+)	VS.	ETOH	94.6	95.2	88.6	78.3	76.5	50.6
Mikuriya	NAFLD(+)	VS.	HCV(+)	100.0	88.6	76.1	71.6	75.9	51.0
Su	NAFLD(+)	VS.	NAFLD(-)	94.6	97.3	79.3	86.5	57.8	75.6
Wong	NAFLD(+)	VS.	HBV(+)	73.3	81.5	46.4	63.1	28.1	50.8
Wong	NAFLD(+)	VS.	HCV(+)	73.3	74.1	46.4	43	28.1	25.4
Wong	NAFLD(+)	VS.	ETOH	73.3	68.8	46.4	43.2	28.1	21.2
Tian	NAFLD(+)	VS.	HBV(+)	96.3	82.9	82.7	62.3	63.0	49.8
Kimura	NAFLD(+)	VS.	Cryptogenic	96.6	93.4	85.2	80.4	72.6	72.3
Kimura	NAFLD(+)	VS.	ETOH	96.6	93.4	85.2	70.9	72.6	47.5
Koh	NAFLD(+)	VS.	NAFLD(-)	94.0	90.1	82.5	73.4	70.1	60.9
Liang	NAFLD(+)	VS.	HBV(+) / HCV(+) / ETOH	99.7	91.7	88.8	76.1	84.8	67.0
Yoon	NAFLD(+)	VS.	NAFLD(-)	97.9	94.2	94.7	89.3	91.1	79.2

Legend: Nonalcoholic fatty liver disease (NAFLD), Viral hepatitis B (HBV), Viral hepatitis C (HCV), alcoholic liver disease (ETOH).

## **Appendix S8**

**Supplementary Table 9** Summary of the output of multivariable meta-regression analysis. The hazard ratios of the disease-free survival (DFS) and overall survival (OS) were the dependent variables adjusted for year of publication and prevalence of cirrhosis among patients with nonalcoholic fatty liver disease (NAFLD). The year of publication and the prevalence of cirrhosis among patients with NAFLD expressed as a percentage were entered as continuous variables.

Outcome	Covariate	Coefficient	95% Con Inte	ifidence rval	P Value
			Lower	Upper	
Disease	Intercept	-70.297	-192.824	52.229	0.260
free	Year of publication	0.035	-0.026	0.095	0.263
survival	Cirrhosis	0.007	-0.003	0.017	0.170
Overall	Intercept	157.429	13.640	301.217	0.032
survival	Year of publication	-0.078	-0.149	-0.007	0.031
	Cirrhosis	-0.001	-0.013	0.011	0.841