

Supplementary Materials

Variation in attributable fraction of hepatitis B virus and hepatitis C virus among primary liver cancer cases across mainland China: a systematic literature review and meta-analysis

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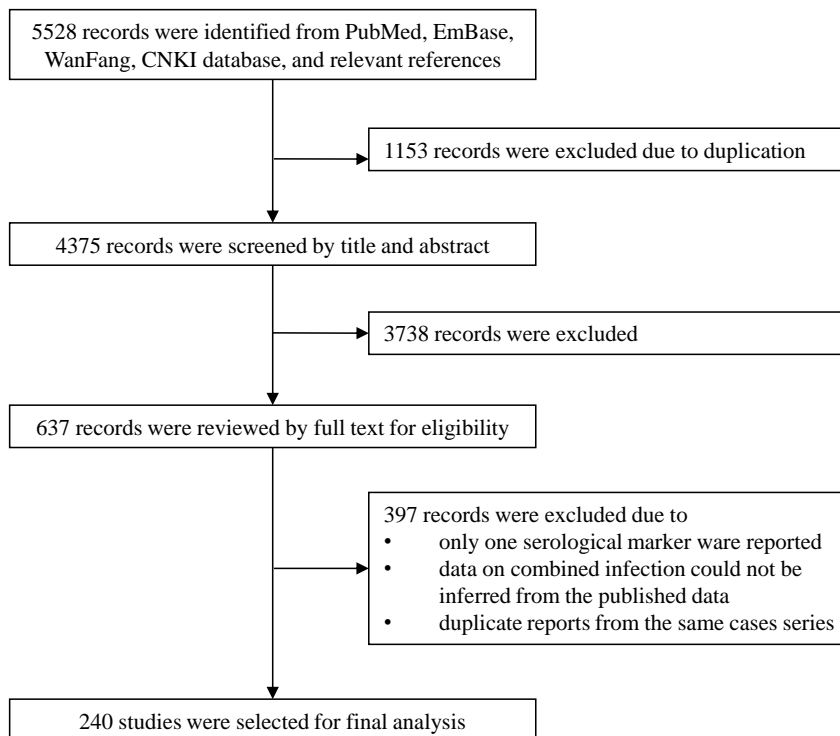
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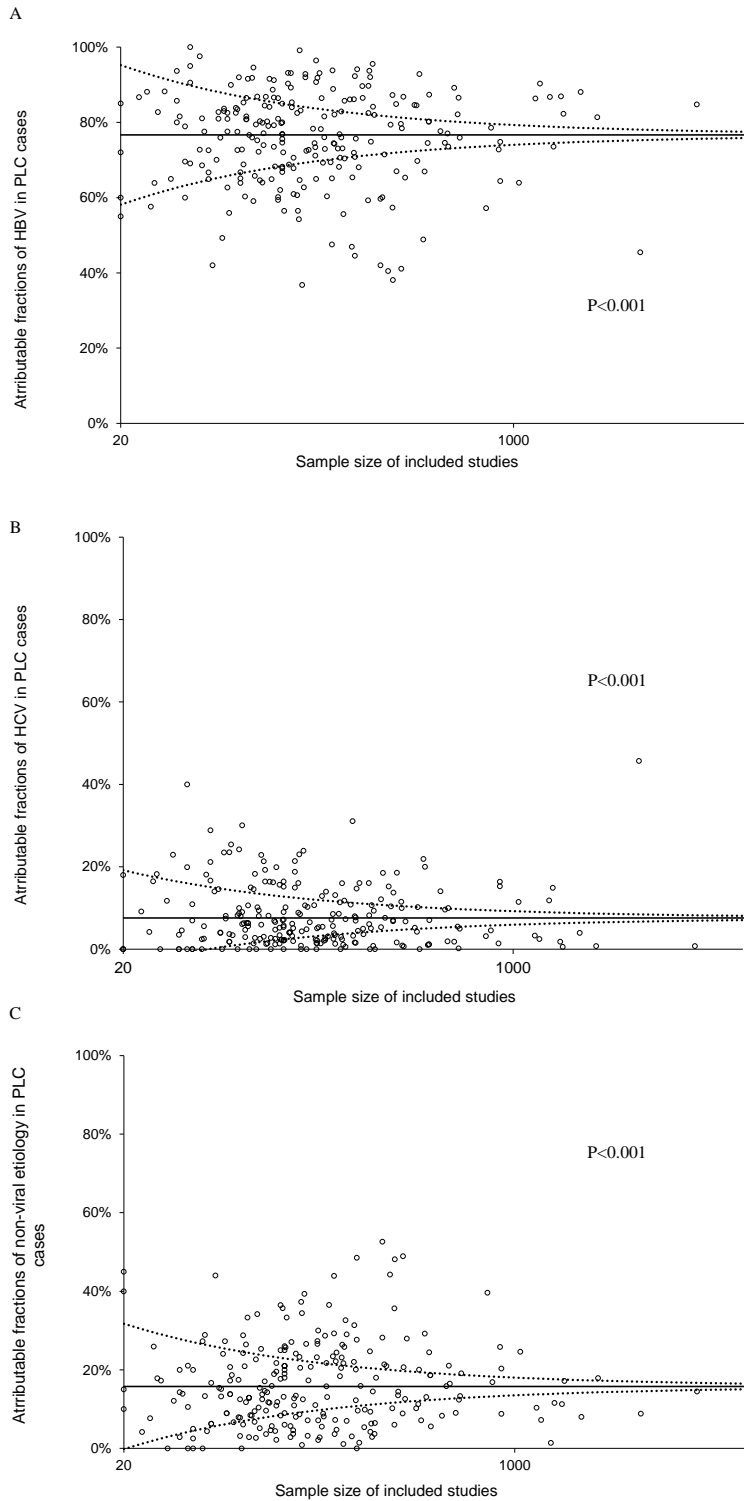
Supplementary Table 1. Literature search strategy

Database	Search strategy
PubMed	(("Hepatocellular carcinoma"[All Fields] OR "liver neoplasms"[All Fields] OR "liver neoplasm"[All Fields] OR "liver neoplasia"[All Fields] OR ("liver"[All Fields] OR "Hepatocellular"[All Fields]) AND ("neoplasms"[All Fields] OR "neoplasm"[All Fields] OR "neoplasia"[All Fields] OR "carcinoma"[All Fields] OR "carcinomas"[All Fields])) OR "HCC"[All Fields] OR "liver cancer"[All Fields] OR ("liver"[All Fields] AND "cancer"[All Fields]) AND (("hepatitis B virus"[All Fields] OR ("hepatitis B"[All Fields] AND "virus"[All Fields]) OR "hepatitis B"[All Fields] OR "hepatitis B virus DNA"[All Fields] OR ("hepatitis B virus"[All Fields] AND "DNA"[All Fields]) OR "HBV DNA"[All Fields] OR ("HBV"[All Fields] AND "DNA"[All Fields]) OR "Hepatitis B Antigens"[All Fields] OR "Hepatitis B Antigen"[All Fields] OR ("hepatitis B"[All Fields] AND ("antigens"[All Fields] OR "antigen"[All Fields])) OR "HBV"[All Fields] OR "HBsAg"[All Fields] OR "Hepatitis B surface Antigen"[All Fields]) AND ("hepatitis C virus"[All Fields] OR ("hepatitis C"[All Fields] AND "virus"[All Fields]) OR "hepatitis C"[All Fields] OR "hepatitis C antibodies"[All Fields] OR "hepatitis C antibody"[All Fields] OR ("hepatitis C"[All Fields] AND ("antibodies"[All Fields] OR "antibody"[All Fields])) OR "hepacivirus"[All Fields] OR "HCV"[All Fields] OR "anti-HCV"[All Fields] OR "HCV-RNA"[All Fields] OR "HCV RNA"[All Fields] OR ("HCV"[All Fields] AND "RNA"[All Fields]))) AND ("China"[All Fields] OR "Chinese"[All Fields]))
EmBase	('hepatocellular carcinoma' OR 'liver neoplasms' OR 'liver neoplasm' OR 'liver neoplasia' OR (('liver' OR 'hepatocellular') AND ('neoplasms' OR 'neoplasm' OR 'neoplasia' OR 'carcinoma'))) OR 'hcc' OR 'liver cancer' OR ('liver' AND 'cancer') AND ('hepatitis b virus' OR ('hepatitis b' AND 'virus') OR 'hepatitis b' OR 'hepatitis b virus dna' OR ('hepatitis b virus' AND 'dna') OR 'hbv dna' OR ('hbv' AND 'dna') OR

	'hepatitis b antigens' OR ('hepatitis b' AND 'antigens') OR 'hepatitis b antigen' OR ('hepatitis b' AND 'antigen') OR 'hbv' OR 'hbsag') AND ('hepatitis c virus' OR ('hepatitis c' AND 'virus') OR 'hepatitis c' OR 'hepatitis c antibodies' OR ('hepatitis c' AND 'antibodies') OR 'hepacivirus' OR 'hcv' OR 'hepatitis c antibody' OR ('hepatitis c' AND 'antibody') OR 'anti-hcv' OR 'hcv rna' OR 'hcv-rna') AND ('china' OR 'chinese') AND ([article]/lim OR [article in press]/lim) AND [humans]/lim AND [embase]/lim
WanFang	Abstract:(HBV OR Hepatitis B) and Abstract:(HCV OR Hepatitis C) and Title:(Liver cancer OR Hepatocellular carcinoma OR Primary liver cancer)
CNKI	AB=('HBV' + 'Hepatitis B') and AB=('HCV' + 'Hepatitis C') and TI=('Liver cancer' + 'Hepatocellular carcinoma' + 'Primary liver cancer')



Supplementary Figure 1. Flow chart of study selection.



Supplementary Figure 2. Funnel plots of AFs of HBV, HCV and non-viral etiology in PLC cases, using egger test by study size in Supplementary Figure 2A-C. (A) funnel plot for HBV; (B) funnel plot for HCV; (C) funnel plot for non-viral etiology. AFs: attributable fractions; HBV: hepatitis B virus; HCV: hepatitis C virus; PLC: primary liver cancer.

Supplementary Table 2. Population size by geography in mainland China obtained from the 2020 population census of China

Region	Population size
Province	
South Central China	
Guangxi	50,126,804
Guangdong	126,012,510
Henan	99,365,519
Hainan	10,081,232
Hubei	57,752,557
Hunan	66,444,864
Subtotal	409,783,486
East China	
Jiangsu	84,748,016
Shanghai	24,870,895
Zhejiang	64,567,588
Shandong	101,527,453
Anhui	61,027,171
Jiangxi	45,188,635
Fujian	41,540,086
Subtotal	423,469,844
North China	
Beijing	21,893,095
Hebei	74,610,235
Shanxi	34,915,616
Tianjin	13,866,009
Inner Mongolia	24,049,155
Subtotal	169,334,110
Northeast China	
Jilin	24,073,453
Liaoning	42,591,407
Heilongjiang	31,850,088
Subtotal	98,514,948

Northwest China

Shaanxi	39,528,999
Gansu	25,019,831
Ningxia	7,202,654
Xinjiang	25,852,345
Qinghai	5,923,957
Subtotal	103,527,786

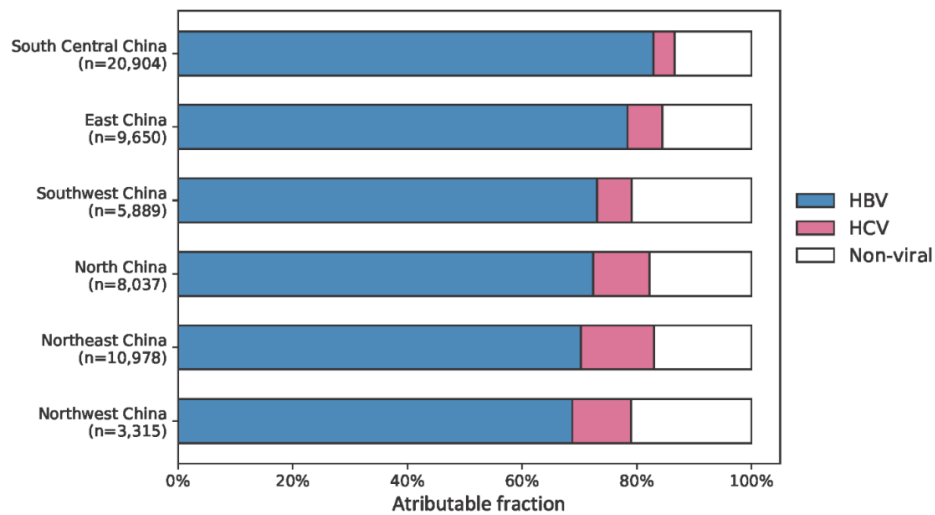
Southwest China

Sichuan	83,674,866
Chongqing	32,054,159
Yunnan	47,209,277
Guizhou	38,562,148
Tibet	3,648,100
Subtotal	205,148,550

China mainland^a 1,409,778,724

^aPopulation of Servicemen was not counted in our analysis. Data source:

<https://www.stats.gov.cn/sj/pcsj/rkpc/7rp/zk/indexch.htm>



Supplementary Figure 3. AFs of HBV, HCV and non-viral etiology in PLC cases by six administration regions. The regional AFs of HBV, HCV, and non-viral etiology were weighted using pooled estimates in each province and the population sizes of the regions (see method). AFs: Attributable fractions; HBV: hepatitis B virus; HCV: hepatitis C virus; PLC: primary liver cancer.

Supplementary Table 3. Description of selected studies^[1-240]

Publication year	First author	Journal	Province	Diagnosis	Six administrative region	Language	Sample size
1993	Chen CA	Shi Yong Yi Xue Za Zhi	Guangdong	HCC	South Central China	Chinese	58
1993	Jiang MD	Zhonghua Yi Xue Za Zhi Zhongguo Ren Min Jie Fang Jun Jun Yi Da Xue	Sichuan Chongqing	HCC	Southwest China	Chinese	48
1993	Yang JM	Xue Bao(Ying Wen Ban)	Guangxi	HCC	Southwest China South Central	Chinese	93
1993	Zhang ZQ	Guangxi Yi Xue	Guangxi	HCC	China	Chinese	78
1994	Chen SB	Zhongguo Zhong Liu Lin Chuang	Shanghai	HCC	East China	Chinese	54
1994	Deng YL	Gan Zang Bing Za Zhi	Beijing	HCC	North China	Chinese	142
1994	Liu CR	Lin Chuang Xiao Hua Bing Za Zhi	Liaoning	HCC	Northeast China	Chinese	64
1994	Liu XT	Di Er Jun Yi Da Xue Xue Bao	Shanghai	HCC	East China	Chinese	130

1994	Okuno H	Cancer	Guangxi	HCC	South Central China	Englis h	186
1994	Wang JT	Xian Dai Yu Fang Yi Xue	Shanxi	HCC	North China	Chines e	20
1994	Xie XM	Zhongguo Xian Dai Yi Xue Za Zhi	Hunan	HCC	South Central China	Chines e	140
1994	Yu ZY	Chinese Journal of Cancer Research	Shanghai	HCC	East China	Englis h	586
1994	Yuan AL	Lin Chuang Xiao Hua Bing Za Zhi	Guangdong	HCC	South Central China	Chines e	82
1994	Zha WZ	Jiangsu Yi Yao	Jiangsu	HCC	East China	Chines e	101
1994	Zhang FX	Ai Zheng	Gansu	HCC	Northwest China	Chines e	112
1995	Cui GL	Lin Chuang Nei Ke Za Zhi	Henan	PLC	South Central China	Chines e	20
1995	Fei SJ	Yi Shi Jin Xiu Za Zhi	Jiangsu	HCC	East China	Chines e	106
1995	Gong J	Zhong Liu	Guangxi	PLC	South Central China	Chines e	88

1995	Hu XQ	Linyi Yi Zhuan Xue Bao	Shandong	PLC	East China	Chinese	45
1995	Pan WS	Zhong Guo Gong Gong Wei Sheng	Beijing	PLC	North China	Chinese	109
1995	Qiu WL	Guangzhou Yi Yao	Guangdong	HCC	China	Chinese	109
1995	Tang RG	Youjiang Min Zu Xi Yue Yuan Xue Bao	Guangxi	HCC	China	Chinese	77
1995	Wang SL	Chinese Journal of Cancer Research	Liaoning	HCC	Northeast China	Chinese	46
1995	Wu AH	Hunan Yi Ke Da Xue Xue Bao	Hunan	HCC	China	Chinese	88
1995	Xu YY	He Nan Yi Yao Xin Xi	Henan	HCC	China	Chinese	35
1995	Yuan JM	Int J Cancer	Shanghai	HCC	East China	English	76
1995	Zeng WT	Xian Dai Lin Chuang Yi Xue Sheng Wu Gong Cheng Xue Za Zhi	Guangdong	HCC	China	Chinese	80
1995	Zhao YY	Ai Zheng	Guangdong	HCC	China	Chinese	110

1995	Zhou L	Zhejiang Yi Xue Qing Bao	Guangdong	PLC	South Central China	Chinese	48
1996	Qu B	Ha Er Bin Yi Ke Da Xue Xue Bao	Heilongjiang	HCC	Northeast China	Chinese	20
1996	Shi GL	Wu Jing Yi Xue Yuan Xue Bao	Jiangsu	HCC	East China	Chinese	56
1996	Tang Y	Xinjiang Xi Yuan Yuan Xue Bao	Xinjiang	HCC	Northwest China	Chinese	40
1996	Wang AL	Bai Qiu En Yi Ke Da Xue Xue Bao	Jilin	PLC	Northeast China	Chinese	64
1996	Wang CJ	Ai Zheng	Shaanxi	HCC	Northwest China	Chinese	64
1996	Wang CX	Zhong Guo Wei Sheng Jian Yan Za Zhi	Henan	HCC	South Central China	Chinese	70
1996	Wang ZJ	Zhonghua Liu Xing Bing Xue Za Zhi	Guangdong	PLC	South Central China	Chinese	96
1996	Wu CM	Hebei Zhong Xi Yi Jie He Za Zhi	Hebei	PLC	North China	Chinese	56
1996	Zhang HZ	Zhonghua Bing Li Xue Za Zhi	Guangdong	HCC	South Central China	Chinese	40

1996	Zhong ZF	Henan Yi Yao Xin Xi	Henan	PLC	China	South Central China	Chinese	58
1997	Chen YS	Lin Chuang Hui Cui	Guangdong	HCC	China	South Central China	Chinese	65
1997	Du YM	Xin Yi Xue	Guangdong	HCC	China	South Central China	Chinese	116
1997	Guo XL	Inner Mongolia Yi Ke Da Xue Xue Bao	Inner Mongolia	HCC	North China	China	Chinese	38
1997	Li DT	Tianjin Yi Yao	Tianjin	PLC	North China	China	Chinese	33
1997	Lin JR	Zhongguo Xian Dai Yi Xue Za Zhi	Guangdong	PLC	China	South Central China	Chinese	40
1997	Long M	Guangxi Yu Fang Yi Xue	Guangxi	HCC	China	China	Chinese	85
1997	Lu CH	Wei Chang Bing Xue He Gan Bing Xue Za Zhi	Anhui	HCC	East China	South Central China	Chinese	35
1997	Lu YP	Guangxi Yi Xue	Guangxi	PLC	China	China	Chinese	200
1997	Ma ZM	Zhongguo Zhong Liu Lin Chuang	Zhejiang	HCC	East China	China	Chinese	31

1997	Sheng J	Xin Xiao Hua Bing Xue Za Zhi	Jiangsu	HCC	East China	English	140
1997	Wang SS	Zhong Hua Liu Xing Bing Xue Za Zhi	Guangdong	HCC	South Central China	Chinese	100
1997	Wang WQ	Shandong Yi Yao	Shandong	HCC	East China	Chinese	26
1997	Wei JR	Zhonghua Chuan Ran Bing Za Zhi	Zhejiang	HCC	East China	Chinese	117
1997	Wu J	Zhong Guo Xian Dai Yi Xue Za Zhi	Zhejiang	HCC	East China	Chinese	36
1997	Xing YP	Nanjing Yi Ke Da Xue Xue Bao	Jiangsu	PLC	East China	English	138
1997	Yao DF	Wei Chang Bing Xue He Gan Bing Xue Za Zhi	Jiangsu	HCC	East China	Chinese	178
1997	Ye Q	Zhonghua Shi Yan He Lin Chuang Bing Du Xue Za Zhi	Hebei	HCC	North China	Chinese	35
1997	Yu SZ	Zhonghua Liu Xing Bing Xue Za Zhi	Jiangsu	PLC	East China	Chinese	92
1997	Yu SZ	Zhonghua Liu Xing Bing Xue Za Zhi	Fujian	PLC	East China	Chinese	77

						Chines	
1997	Yu SZ	Zhonghua Liu Xing Bing Xue Za Zhi	Hebei	PLC	North China	e	71
					South Central	Chines	
1997	Yu SZ	Zhonghua Liu Xing Bing Xue Za Zhi	Guangxi	PLC	China	e	100
			Multiple			Chines	
1997	Yu SZ	Zhonghua Liu Xing Bing Xue Za Zhi	region	PLC	Multiple region	e	340
						Chines	
1997	Zhao CY	Shi Yong Gan Zang Bing Za Zhi	Hebei	PLC	North China	e	40
						Chines	
1997	Zhou GX	Nantong Yi Xue Yuan Xue Bao	Jiangsu	PLC	East China	e	66
						Chines	
1997	Zhou SX	Ji Bing Kong Zhi Za Zhi	Jiangsu	PLC	East China	e	162
						Chines	
1997	Zuo Q	Zhongguo Gong Gong Wei Sheng Xue Bao	Hebei	HCC	North China	e	100
						Chines	
1998	Cui XH	Zhongguo Zhong Liu Lin Chuang	Shanghai	PLC	East China	e	67
					South Central	Chines	
1998	Dai M	Henan Zhong Liu Xue Za Zhi	Henan	PLC	China	e	96
						Chines	
1998	Gao XH	Dalian Yi Ke Da Xue Xue Bao	Liaoning	HCC	Northeast China	e	52

1998	Gu WL	Shanxi Yu Fang Yi Xue Za Zhi	Shanxi	HCC	North China	Chinese	78
1998	Liao JC	Zhongguo Ai Zheng Za Zhi	Fujian	PLC	East China	Chinese	107
1998	Wu BR	Ji Bing Kong Zhi Za Zhi	Mongolia	HCC	North China	Chinese	28
1998	Yan XB	Yi Xue Li Lun Yu Shi Jian	Jiangsu	HCC	East China	Chinese	92
1998	Yu S	Yunan Yi Yao	Shanghai	HCC	East China	Chinese	106
1998	Yuan JL	Hua Xia Yi Xue	Guangxi	HCC	China	Chinese	70
1998	Zhai KG	Jilin Yi Xue	Jilin	HCC	Northeast China	Chinese	66
1998	Zhang JY	Int J Epidemiol	Henan	HCC	China	English	152
1999	Cui LH	Zhongguo Man Xing Bing Yu Fan Yu Kong Zhi	Jilin	HCC	Northeast China	Chinese	112
1999	Fan NF	Changzhi Yi Xue Yuan Xue Bao	Shanxi	PLC	North China	Chinese	102

1999	Guo RP	Ai Zheng	Guangdong	HCC	South Central China	Chinese	126
1999	Li D	Yanbian Da Xue Yi Xue Xue Bao Zhonghua Shi Yan He Lin Chuang Bing Du Xue	Jilin	HCC	Northeast China	Chinese	82
1999	Liao HY	Za Zhi	Beijing	HCC	North China	Chinese	53
1999	Qian SP	Heibei Yi Xue	Zhejiang	HCC	East China	Chinese	71
1999	Wang JT	Zhonghua Liu Xing Bing Xue Za Zhi	Shanxi	PLC	North China	Chinese	98
1999	Wang KS	Qi Lu Yi Xue Za Zhi	Shandong	PLC	East China	Chinese	126
2000	Cheng AH	Heze Yi Zhuan Xue Bao	Shandong	PLC	East China	Chinese	66
2000	Guo X	Shanxi Yi Ke Da Xue Xue Bao	Shanxi	HCC	North China	English	74
2000	Lei XZ	Hepatol Res	Sichuan	HCC	Southwest China	Chinese	124
2000	Zhang YT	Lin Chuang Jun Yi Za Zhi	Gansu	PLC	Northwest China	Chinese	122

2000	Zhao JF	Bingbu Yi Xue Yuan Xue Bao	Anhui	HCC	East China	Chinese	87
2001	Huang F	Gan Zang	Jiangsu	HCC	East China	Chinese	100
2001	Huang YW	Henan Yu Fang Yi Xue Za Zhi	Henan	HCC	South Central China	Chinese	70
2001	Jiang MD	Xi Nan Guo Fang Yi Yao	Sichuan	HCC	Southwest China	Chinese	38
2001	Li ZX	Guangdong Yi Xue	Guangdong	HCC	South Central China	Chinese	110
2001	Shi CJ	Zhong Guo Ji Ceng Yi Yao	Jiangsu	HCC	East China	Chinese	45
2001	Wang WL	Zhongguo Bing Du Xue	Shaanxi	HCC	Northwest China	Chinese	136
2001	Zhu F	Zhongguo Yi Xue Ke Xue Yuan Xue Bao	Beijing	HCC	North China	Chinese	112
2002	Fang F	Hepatobiliary Pancreat Dis Int	Shanghai	PLC	East China	English	139
2002	Jin Y	Hepatol Res	Heilongjiang	HCC	Northeast China	English	58

2002	Wang BE	J Med Virol	Multiple region	HCC	Multiple region	English	92
2002	Wang NC	Ji Bing Jian Ce	Shanxi	HCC	North China	Chinese	38
2002	Yang SQ	Ningxia Yi Xue Za Zhi	Ningxia	HCC	Northwest China	Chinese	430
2002	Zhang LS	Zhongguo Yu Fang Yi Xue Za Zhi	Jiangsu	PLC	East China	Chinese	100
2002	Zou CL	Zhongguo Zhong Liu	Zhejiang	PLC	East China	Chinese	180
2003	Han YP	Shi Yong Lin Chuang Yi Yao Za Zhi	Jiangsu	PLC	East China	Chinese	50
2003	Hu JG	Shanxi Yi Xue Za Zhi	Ningxia	PLC	Northwest China	Chinese	430
2003	Li Y	Lin Chuang Gan Dan Bing Za Zhi	Jilin	PLC	Northeast China	Chinese	1,057
2003	Wang JB	Shan Dong Yi Yao	Shandong	PLC	East China South Central	Chinese	75
2003	Wang ZF	Henan Yi Xue Yan Jiu	Henan	HCC	China	Chinese	53

2003	Xu YQ	Shi Jie Zhong Liu Za Zhi	Heilongjiang	HCC	Northeast China	Chinese	70
2003	Zeng JH	Modern Preventive Medicine	Jiangsu	PLC	East China	Chinese	100
2004	Ding BG	Chin Prev Med	Jiangsu	PLC	East China	Chinese	204
2004	Gao JD	Chin J Hepatobiliary Surg	Beijing	HCC	North China	Chinese	119
2004	Wang M	Chin J Public Health	Shandong	HCC	East China	Chinese	164
2004	Wang QM	Henan J Prev Med	Henan	HCC	South Central China	Chinese	68
2005	Feng JT	Proteomics	Shanghai	HCC	East China	English	20
2005	Huang WC	Guangxi Prev Med	Guangxi	PLC	South Central China	Chinese	1,645
2005	Huang YC	Ha Er Bin Yi Ke Da Xue Xue Bao	Heilongjiang	HCC	Northeast China	Chinese	119
2005	Li SF	Shi Yong Yi Ji Za Zhi	Guangdong	HCC	South Central China	Chinese	27

2005	Luo CY	Zhongguo Re Dai Yi Xue	Shaanxi	PLC	Northwest China	Chinese	196
2005	Mi JX	Shi Yong Yi Ji Za Zhi	Xinjiang	PLC	Northwest China	Chinese	44
2005	Wang KB	Guangxi Yi Xue	Guangxi	PLC	China	South Central Chinese	206
2005	Yuan P	Chin J Prev	Sichuan	HCC	Southwest China	Chinese	425
2006	Chen WQ	Guangxi Yi Ke Da Xue Xue Bao	Guangxi	HCC	China	South Central Chinese	156
2006	Zhang JC	Chin J Cancer Prev Treat	Hubei	HCC	China	South Central Chinese	44
2006	Zhang JY	Lin Chuang Gan Dan Bing Za Zhi	Hubei	PLC	China	Chinese	211
2006	Zheng DR	China Tropical Medicine	Guangdong	HCC	China	South Central Chinese	167
2007	Dong JL	Journal of Capital Medical University	Beijing	HCC	North China	Chinese	373
2007	Li Q	J Gastroenterol Hepatol	Tianjin	HCC	North China	Chinese	413

2007	Luo XR	J Clin Hepatol	Hubei	PLC	South Central China	Chinese	92
2007	Wu SX	Heilongjiang Yi Yao Ke Xue	Jiangsu	PLC	East China	Chinese	96
2007	Xiao L	Wei Xun Huan Xue Za Zhi	Hubei	HCC	South Central China	Chinese	69
2007	Xuan SY	World J Gastroenterol	Shandong	HCC	East China	English	100
2007	Zhang XF	Hainan Yi Xue	Liaoning	PLC	Northeast China	Chinese	63
2008	Gao L	Lin Chun Hui Cui	Jilin	PLC	Northeast China	Chinese	483
2008	Lu XF	Zhong Wai Jian Kang Wen Zhai-Lin Chuang Yi Shi Ban	Fujian	PLC	East China	Chinese	246
2008	Yang SM	Lin Chuang Xue Ye Xue Za Zhi	Shaanxi	HCC	Northwest China	Chinese	242
2008	Yu SZ	Fudan Xue Bao (Yi Xue Ban)	Jiangsu	HCC	East China	Chinese	201
2009	Cheng SQ	Shanxi Yi Ke Da Xue Xue Bao	Shaanxi	HCC	Northwest China	Chinese	74

2009	Jia ZF	Chin J Cancer Res	Liaoning	HCC	Northeast China	English	384
2009	Song XL	Zhongguo Shi Yong Yi Yao	Henan	PLC	China	Chinese	72
2009	Wang Y	Zhongguo Yi Shi Za Zhi	Liaoning	PLC	Northeast China	Chinese	174
2009	Wu YJ	Hebei Yi Ke Da Xue Xue Bao	Hebei	PLC	North China	Chinese	312
2009	Xiao P	Zhongguo Dang Dai Yi Sheng	Liaoning	HCC	Northeast China	Chinese	55
2009	Xu HS	Zhongguo Shi Yong Yi Yao	Henan	HCC	China	English	168
2010	Hu LM	Hum Immunol	Jiangsu	HCC	East China	Chinese	864
2010	Kuang JX	Zhongguo Yi Yao Dao Bao	Guangdong	HCC	China	Chinese	168
2010	Li WW	Shi Yong Ai Zheng Za Zhi	Beijing	PLC	North China	Chinese	75
2010	Qu L	Zhejiang Da Xue Xue Bao (Yi Xue Ban)	Zhejiang	HCC	East China	Chinese	29

2010	Su X	Shuo Shi Lun Wen	Hebei	PLC	North China	Chinese	120
2010	Sun F	Zhongguo Yi Xue Chuang Xin	Shandong	HCC	East China	Chinese	100
2010	Yin X	Zhongguo Lin Chuang Yi Xue	Shanghai	HCC	East China	Chinese	407
2010	Yu J	Zhongguo Quan Ke Yi Xue	Liaoning	PLC	Northeast China	Chinese	60
2010	Zhao HL	Shi Yong Lin Chuang Mian Yi Xue	Beijing	HCC	North China	Chinese	83
2011	Li LL	Zhong Guo Shi Yan Zhen Duan Xue	Jilin	PLC	Northeast China	Chinese	294
2011	Liu LB	Wei Chang Bing Xue He Gan Bing Xue Za Zhi	Hebei	PLC	North China South Central	Chinese	58
2011	Shi YJ	Zhongguo Lao Nian Xue Za Zhi	Henan	PLC	China	English	579
2011	Wang Q	BMC Cancer	Shanghai	HCC	East China	Chinese	152
2012	Cui LZ	Zhongguo Shi Yan Zhen Duan Xue	Jilin	PLC	Northeast China	Chinese	300

2012	Fu XM	An Mo Yu Kang Fu Yi Xue	Jiangxi	PLC	East China	Chinese	147
2012	Hu LH	Shi Yong Gan Zang Bing Za Zhi	Hunan	PLC	South Central China	Chinese	150
2012	Li XY	Zhonghua Yi Yuan Gan Ran Xue Za Zhi	Beijing	PLC	North China	Chinese	432
2012	Liu H	Cancer Epidemiol	Shanghai	HCC	East China	English	80
2012	Liu LG	Am J Surg	Beijing	HCC	North China	English	165
2012	Mao YM	Asian Pac J Cancer Prev	Zhejiang	HCC	East China	English	326
2012	Qiao CX	World J Gastroenterol	Shanghai	HCC	East China	English	140
2012	Wang CP	World J of Gastroenterol	Beijing	HCC	North China	English	1,436
2012	Yao L	Asian Pac J Cancer Prev	Heilongjiang	HCC	Northeast China	English	48
2013	Chen LM	Hainan Yi Xue	Guangdong	PLC	South Central China	Chinese	186

2013	Chen YH	J Exp Clin Cancer Res	Guangxi	HCC	South Central China	Englis h	392
2013	Fu GS	Zhongguo Lin Chuang Yan Jiu	Jilin	PLC	Northeast China	Chines e	84
2013	He J	Shuo Shi Lun Wen	Fujian	HCC	East China	Englis e	153
2013	Liu C	World J Gastroenterol	Sichuan	HCC	Southwest China	Chines h	2,304
2013	Long J	Oncol Rep	Beijing	HCC	North China	Englis h	116
2013	Xu J	Bengbu Yi Xue Yuan Xue Bao	Anhui	PLC	East China	Chines e	177
2013	Yuan JM	BMC Gastroenterol	Guangxi	HCC	South Central China	Englis h	250
2013	Zhang DW	World J Surg Oncol	Guangdon g	HCC	South Central China	Englis h	68
2013	Zhang LS	Zhongguo Nong Cun Wei Sheng	Jiangsu	PLC	East China	Chines e	100
2013	Zhao Y	Ann Oncol	Multiple region	HCC	Multiple region	Englis h	222

2014	Chu L	Chin J Oncol	Jiangsu	HCC	East China	Chinese	83
2014	Cong N	Tumor Biol	Jiangsu	HCC	East China	English	206
2014	Hao YX	Asian Pac J Cancer Prev	Shanxi	HCC	North China	English	235
2014	Kou JT	Oncol Lett	Beijing	HCC	North China	English	271
2014	Ling Y	Zhongguo Yi Shi Jin Xiu Za Zhi	Henan	PLC	South Central China	Chinese	206
2014	Liu HT	Shuo Shi Lun Wen	Qinghai	PLC	Northwest China	Chinese	176
2014	Liu MF	Genet Mol Res	Jiangsu	HCC	East China	English	327
2014	Shen P	Hepatol Res	Zhejiang	HCC	East China	English	63
2014	Ying X	Oncol Rep	Shaanxi	HCC	Northwest China	English	148
2014	Zhao XK	Zhonghua Gan Zang Bing Za Zhi	Guizhou	HCC	Southwest China	Chinese	762

2014	Zhou B	Tumour Biol	Henan	HCC	South Central China	Englis h	266
2014	Zhou J	Zhong Wai Yi Xue Yan Jiu	Yunnan	PLC	Southwest China	Chines e	208
2014	Zuo CH	Mol Clin Oncol	Hunan	HCC	South Central China	Englis h	24
2015	Chen M	Clin Res Hepatol Gas	Henan	HCC	South Central China	Englis h	86
2015	Han XJ	World J Gastroenterol	Liaoning	HCC	Northeast China	Englis h	79
2015	Li D	Genet Mol Res	Sichuan	HCC	Southwest China	Englis h	184
2015	Li J	Oncotarget	Shanghai	HCC	East China	Chines h	180
2015	Li JH	Shi Yong Gan Zang Bing Za Zhi	Hebei	PLC	North China	Englis e	573
2015	Li XH	Int J Clin Exp Pathol	Multiple region	HCC	Multiple region	Englis h	266
2015	Lu XX	Shangdong Yi Yao	Guangxi	PLC	South Central China	Chines e	6,201

2015	Xiao L	Chin J Cancer Res	Xinjiang	HCC	Northwest China	English	301
2015	Zhang JQ	Modern Oncology	Shaanxi	HCC	Northwest China	Chinese	59
2015	Zhang X	Int J Mol Sci	Henan	HCC	China	English	127
2016	Cai Q	Shuo Shi Lun Wen	Guangdong	HCC	China	Chinese	145
2016	Feng XB	Med Sci Monit	Chongqing	HCC	Southwest China	English	329
2016	Guan RR	Lin Chuang Gan Dan Bing Za Zhi	Gansu	PLC	Northwest China	Chinese	236
2016	Li H	Shuo Shi Lun Wen	Jilin	PLC	Northeast China	Chinese	876
2016	Sun H	Zhonghua Pu Tong Wai Ke Xue Wen Xian	Guangdong	HCC	China	Chinese	139
2016	Wang PP	Shuo Shi Lun Wen	Henan	HCC	China	Chinese	96
2016	Wang ZJ	Biao Ji Mian Yi Fen Xi Yu Lin Chuang	Yunnan	PLC	Southwest China	Chinese	214

2016	Wu WB	Zhonghua Yi Yuan Gan Ran Xue Za Zhi	Anhui	HCC	East China	Chinese	90
2017	Fan WX	Shuo Shi Lun Wen	Guangxi	PLC	China	Chinese	287
2017	Guan CT	Chin J Oncol	Beijing	HCC	North China	English	800
2017	Liu CJ	Int J Mol Epidemiol Genet	Inner Mongolia	HCC	North China	English	164
2017	Liu XY	Neoplasma	Shandong	HCC	East China	Chinese	240
2017	Su LH	Shuo Shi Lun Wen	Shanxi	PLC	North China	English	277
2017	Wang K	Asian J Surg	Jiangxi	HCC	East China	English	238
2017	Wang MJ	Int J Infect Dis	Multiple region	HCC	Multiple region	Chinese	1,823
2017	Wang YC	Shuo Shi Lun Wen	Jilin	ICC	Northeast China	Chinese	38
2017	Wang YC	Shuo Shi Lun Wen	Jilin	PLC	Northeast China	Chinese	118

2017	Wang YC	Shuo Shi Lun Wen	Jilin	HCC	Northeast China	Chinese	80
2017	Ye JX	Xian Dai Zhen Duan He Zhi Liao	Guangdong	PLC	South Central China	Chinese	100
2018	Wang Mu	Xizang Ke Ji	Tibet	PLC	Southwest China	Chinese	182
2018	Huang XW	Dig Dis	Guangdong	HCC	China	English	311
2018	Jin Z	Shuo Shi Lun Wen	Shaanxi	PLC	Northwest China	English	505
2018	Jin Z	Shuo Shi Lun Wen	Shaanxi	ICC	Northwest China	English	47
2018	Jin Z	Shuo Shi Lun Wen	Shaanxi	HCC	Northwest China	English	444
2018	Li RD	Pathol Res Pract	Shandong	HCC	East China	Chinese	236
2018	Lin S	Shuo Shi Lun Wen	Hainan	HCC	China	Chinese	554
2018	Sui HT	Shuo Shi Lun Wen	Jilin	PLC	Northeast China	Chinese	3,537

2018	Zou H	Bo Shi Lun Wen	Shandong	HCC	East China	Chinese	223
2019	He YJ	Lin Chuang Gan Dan Bing Za Zhi	Guangdong	HCC	South Central China	Chinese	1,302
2019	Hua SX	Mol Ther Nucleic Acids	Henan	HCC	China	English	381
2019	Pu PG	Shi Jie Zui Xin Yi Xue Xin Xi Wen Zhai	Jilin	PLC	Northeast China	Chinese	876
2020	Chen L	Shuo Shi Lun Wen	Guangdong	HCC	China	Chinese	1,605
2020	Gao C	Dis Markers	Beijing	HCC	North China	English	100
2020	Kong J	Transl Cancer Res	Guangdong	HCC	China	English	92
2020	Li JJ	Shuo Shi Lun Wen	Guangxi	PLC	China	Chinese	518
2020	Yang QQ	Shuo Shi Lun Wen	Jilin	HCC	Northeast China	Chinese	1,490
2021	Diao YK	Am J Surg	Multiple region	HCC	Multiple region	English	1,952

2021	Huang YM	Jian Kang Bi Du	Guizhou	PLC	Southwest China	Chinese	300
2021	Wang R	Shuo Shi Lun Wen	Shanxi	HCC	North China	Chinese	522
2022	Lin JS	Front Oncol	Multiple region	HCC	Multiple region	English	10,025
2022	Lin JS	Front Oncol	Multiple region	ICC	Multiple region	English	476
2022	Lin JS	Front Oncol	Multiple region	PLC	Multiple region	English	10,501
2022	Xu W	J Hepatocell Carcinoma	Sichuan	HCC	Southwest China	Chinese	344
2022	Xu W	J Hepatocell Carcinoma	Multiple region	HCC	Multiple region	English	1,244
2022	Xu W	J Hepatocell Carcinoma	Hunan	HCC	South Central China	English	900
2022	Zhan SB	Front Med	Jiangsu	HCC	East China	English	204
2023	Chen YD	Insights Imaging	Sichuan	HCC	Southwest China	Chinese	334

2023	Huang JJ	Shuo Shi Lun Wen	Jilin	HCC	Northeast China	Chinese	247
2023	Li T	Cancer Immunol Immunother	Multiple region	HCC	Multiple region	English	99
2023	Wang LY	Eur Radiol	Beijing	HCC	North China	English	166
2023	Yuan GS	World J Gastrointest Oncol	Shandong	HCC	East China	English	91

HBV: Hepatitis B virus; HCV: hepatitis C virus; PLC: primary liver cancer; HCC: hepatocellular carcinoma.

Supplementary Table 4. The attributable fractions (AFs) of HBV-only, HCV-only, co-infection of HBV and HCV, non-viral etiology among 71,905 primary liver cancer (PLC) cases in mainland China by region and province

Region Province	N studies	PLC cases (N)	Proportion (% , n)			
			HBV-only	HCV- only	HBV and HCV	Non-viral
South Central						
China						
Guangdong	26	5,490	80.2 (4,401)	3.7 (201)	5.1 (280)	11.1 (608)
Henan	18	2,603	73.2 (1,906)	5.0 (131)	5.9 (154)	15.8 (412)
Guangxi	16	10,539	79.1 (8,339)	1.7 (182)	2.3 (243)	16.8 (1,775)
Hunan	5	1,302	80.2 (1,044)	2.5 (33)	5.0 (65)	12.3 (160)
Hubei	4	416	78.6 (327)	3.4 (14)	4.6 (19)	13.5 (56)
Hainan	1	554	88.8 (492)	1.8 (10)	0.4 (2)	9.0 (50)
Subtotal^a	70	20,904	79.0 (16,509)	2.7 (571)	3.7 (763)	14.6 (3,061)
East China						
Jiangsu	24	3,811	63.9 (2,435)	4.0 (154)	5.7 (217)	26.4 (1,005)
Shanghai	13	2,137	68.3 (1,460)	7.8 (167)	5.5 (117)	18.4 (393)
Shandong	12	1,492	77.1 (1,151)	5.8 (86)	7.0 (104)	10.1 (151)
Zhejiang	8	853	71.6 (611)	7.7 (66)	6.7 (57)	14.0 (119)
Anhui	4	389	67.1 (261)	5.9 (23)	9.3 (36)	17.7 (69)
Fujian	4	583	76.0 (443)	4.1 (24)	6.5 (38)	13.4 (78)
Jiangxi	2	385	87.5 (337)	4.9 (19)	0.3 (1)	7.3 (28)
Subtotal^a	67	9,650	69.4 (6,698)	5.6 (539)	5.9 (570)	19.1 (1,843)

North China

Beijing	16	4,552	79.5 (3,619)	8.6 (393)	3.6 (165)	8.2 (375)
Shanxi	9	1,444	65.9 (952)	9.6 (139)	4.0 (58)	20.4 (295)
Hebei	9	1,365	71.8 (980)	7.8 (107)	6.3 (86)	14.1 (192)
Inner Mongolia	3	230	51.7 (119)	7.8 (18)	3.5 (8)	37.0 (85)
Tianjin	2	446	60.1 (268)	18.2 (81)	8.7 (39)	13.0 (58)
Subtotal^a	39	8,037	73.9 (5,938)	9.2 (738)	4.4 (356)	12.5 (1,005)

Northeast**China**

Jilin	15	9,686	59.7 (5,781)	24.0 (2,322)	3.9 (376)	12.5 (1,207)
Liaoning	9	977	63.3 (618)	9.0 (88)	10.8 (106)	16.9 (165)
Heilongjiang	5	315	69.8 (220)	6.3 (20)	3.2 (10)	20.6 (65)
Subtotal^a	29	10,978	60.3 (6,619)	22.1 (2,430)	4.5 (492)	13.1 (1,437)

Northwest**China**

Shaanxi	8	1,424	72.9 (1,038)	9.2 (131)	5.8 (83)	12.1 (172)
Gansu	3	470	63.8 (300)	11.3 (53)	6.8 (32)	18.1 (85)
Xinjiang	3	385	47.8 (184)	10.6 (41)	3.4 (13)	38.2 (147)
Ningxia	2	860	78.6 (676)	1.2 (10)	1.6 (14)	18.6 (160)
Qinghai	1	176	68.2 (120)	11.4 (20)	0.0 (0)	20.5 (36)
Subtotal^a	17	3,315	69.9 (2,318)	7.7 (255)	4.3 (142)	18.1 (600)

Southwest**China**

Sichuan	8	3,801	77.2 (2,933)	2.4 (91)	2.5 (95)	17.9 (682)
Chongqing	2	422	72.5 (306)	4.0 (17)	4.7 (20)	18.7 (79)
Guizhou	2	1,062	57.3 (608)	4.2 (45)	0.0 (0)	38.5 (409)

Yunnan	2	422	68.2 (288)	14.7 (62)	4.3 (18)	12.8 (54)
Tibet	1	182	73.1 (133)	1.1 (2)	0.0 (0)	25.8 (47)
Subtotal^a	15	5,889	72.5 (4,268)	3.7 (217)	2.3 (133)	21.6 (1,271)
Multiple regions						
Subtotal	6	13,132	80.4 (1,0555)	2.0 (267)	1.5 (199)	16.1 (2,111)
Overall^b	239*	71,905	73.6%	7.0%	3.7%	15.8%

*One study (2017, Wang MJ et al.) was not counted in Table 1 due to duplicated data with the study (2022, Lin JS et al.), but contributed to the subsequent analysis by age and sex. ^aThe regional AFs of HBV, HCV, and non-viral etiology were weighted using pooled estimates for each province and the population sizes of the regions (see method). ^bThe overall AFs of HBV, HCV, and non-viral etiology were weighted using pooled estimates in each region and population sizes of regions (see method). HBV: Hepatitis B virus; HCV: Hepatitis C virus; CI: confidence interval.

Supplementary Table 5. The attributable fractions (AFs) of HBV-only, HCV-only, co-infection of HBV and HCV, non-viral etiology among 44,183 hepatocellular carcinoma (HCC) cases in mainland China by region and province

Region Province	N studies	HCC cases (N)	Proportion (% , n)			
			HBV- only	HCV- only	HBV and HCV	Non-viral
South Central China						
Guangdong	20	4,910	81.5 (4,003)	3.3 (160)	4.5 (223)	10.7 (524)
Henan	12	1,572	70.6 (1,110)	6.4 (100)	4.2 (66)	18.8 (296)
Guangxi	7	1,224	73.4 (899)	1.3 (16)	7.8 (95)	17.5 (214)
Hunan	4	1,152	81.8 (942)	2.6 (30)	5.5 (63)	10.2 (117)

Hubei	2	113	61.9 (70)	3.5 (4)	3.5 (4)	31.0 (35)
Hainan	1	554	88.8 (492)	1.8 (10)	0.4 (2)	9.0 (50)
<i>Subtotal</i>	<i>46</i>	<i>9,525</i>	<i>78.9</i> <i>(7,516)</i>	<i>3.4 (320)</i>	<i>4.8 (453)</i>	<i>13.0</i> <i>(1,236)</i>
East China						
Jiangsu	13	2,603	62.3 (1,622)	4.4 (114)	4.7 (123)	28.6 (744)
Shanghai	11	1,931	67.9 (1,312)	8.4 (163)	5.9 (114)	17.7 (342)
Shandong	8	1,180	78.6 (928)	5.6 (66)	4.7 (56)	11.0 (130)
Zhejiang	7	673	71.6 (482)	9.2 (62)	7.3 (49)	11.9 (80)
Anhui	3	212	59.4 (126)	10.8 (23)	16.5 (35)	13.2 (28)
Jiangxi	1	238	93.3 (222)	0.0 (0)	0.4 (1)	6.3 (15)
Fujian	1	153	61.4 (94)	11.8 (18)	13.7 (21)	13.1 (20)
<i>Subtotal</i>	<i>44</i>	<i>6,990</i>	<i>68.5</i> <i>(4,786)</i>	<i>6.4 (446)</i>	<i>5.7 (399)</i>	<i>19.4</i> <i>(1,359)</i>
North China						
Beijing	13	3,936	79.6 (3,132)	8.8 (345)	3.3 (130)	8.4 (329)
Shanxi	4	815	66.0 (538)	11.3 (92)	3.4 (28)	19.3 (157)
Inner Mongolia	3	230	51.7 (119)	7.8 (18)	3.5 (8)	37.0 (85)
Hebei	2	135	63.7 (86)	4.4 (6)	11.9 (16)	20.0 (27)
Tianjin	1	413	60.8 (251)	18.2 (75)	8.0 (33)	13.1 (54)
<i>Subtotal</i>	<i>23</i>	<i>5,529</i>	<i>74.6</i> <i>(4,126)</i>	<i>9.7 (536)</i>	<i>3.9 (215)</i>	<i>11.8 (652)</i>
Northeast China						

Liaoning	6	680	58.1 (395)	9.9 (67)	13.8 (94)	18.2 (124)
Heilongjiang	5	315	69.8 (220)	6.3 (20)	3.2 (10)	20.6 (65)
Jilin	4	1,883	73.6 (1,385)	13.6 (256)	1.1 (21)	11.7 (221)
Subtotal	15	2,878	69.5 (2,000)	11.9 (343)	4.3 (125)	14.2 (410)
Southwest						
China						
Sichuan	8	3,801	77.2 (2,933)	2.4 (91)	2.5 (95)	17.9 (682)
Chongqing	2	422	72.5 (306)	4.0 (17)	4.7 (20)	18.7 (79)
Guizhou	1	762	57.2 (436)	3.1 (24)	0.0 (0)	39.6 (302)
Subtotal	11	4,985	73.7 (3,675)	2.6 (132)	2.3 (115)	21.3 (1,063)
Northwest						
China						
Shaanxi	7	1,167	71.8 (838)	7.8 (91)	6.9 (81)	13.5 (157)
Xinjiang	2	341	42.2 (144)	11.7 (40)	2.9 (10)	43.1 (147)
Gansu	1	112	47.3 (53)	11.6 (13)	17.0 (19)	24.1 (27)
Subtotal	10	1,620	63.9 (1,035)	8.9 (144)	6.8 (110)	20.4 (331)
Multiple regions						
Subtotal	6	12,656	82.0 (10,377)	2.1 (261)	1.6 (197)	14.4 (1,821)
Overall*	154	44,183	75.9%	4.9%	3.7%	15.6%

*The overall AFs of HBV-only, HCV-only, both HBV and HCV, and non-viral etiology were weighted using pooled estimates in each region and population sizes of regions

(see method). HBV: Hepatitis B virus; HCV: Hepatitis C virus.

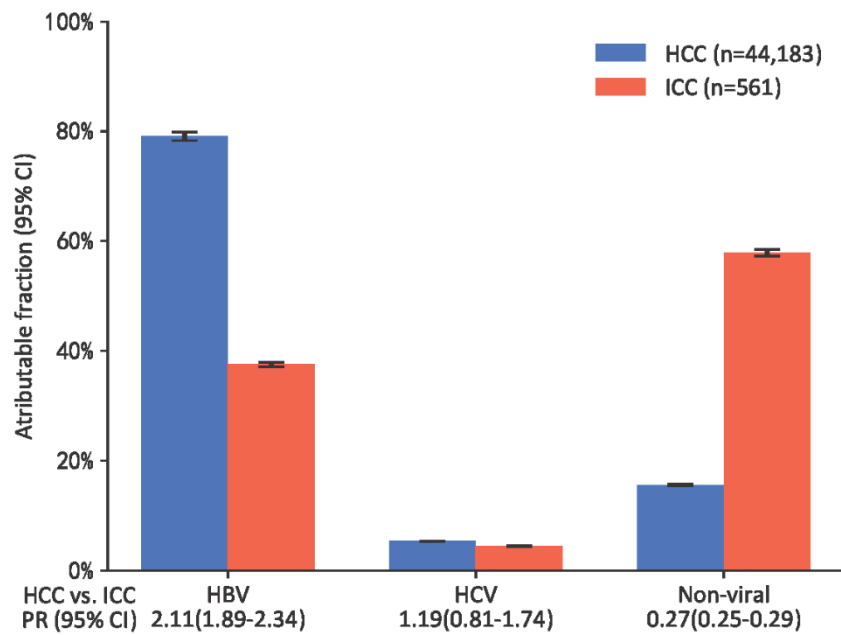
Supplementary Table 6. The attributable fractions (AFs) of HBV, HCV and non-viral etiology among 44,183 hepatocellular carcinoma (HCC) cases in mainland China by region and province

Regions Provinces	N Studies	HCC cases (N)	Proportion (%; 95%CI)		
			HBV	HCV	Non-viral
South Central					
China					
Guangdong	20	4,910	85.9% (85.4-86)	3.4% (3.2-4)	10.7% (10.2-11)
Henan	12	1,572	74.5% (73.4-76)	6.7% (6.1-7)	18.8% (17.8-20)
Guangxi	7	1,224	81.1% (80.0-82)	1.4% (1.1-2)	17.5% (16.4-19)
Hunan	4	1,152	87.1% (86.1-88)	2.8% (2.3-3)	10.2% (9.3-11)
Hubei	2	113	65.3% (60.8-70)	3.7% (1.9-6)	31.0% (26.6-35)
Hainan	1	554	89.2% (87.8-90)	1.8% (1.2-2)	9.0% (7.8-10)
Subtotal	46	9,525	83.5% (83.1-84)	3.6% (3.4-4)	13.0% (12.6-13)
East China					
Jiangsu	13	2,603	66.7% (65.8-68)	4.7% (4.3-5)	28.6% (27.7-29)
Shanghai	11	1,931	73.2% (72.2-74)	9.1% (8.4-10)	17.7% (16.8-19)
Shandong	8	1,180	83.1% (82.0-84)	5.9% (5.2-7)	11.0% (10.1-12)
Zhejiang	7	673	78.1% (76.5-80)	10.0% (8.9-11)	11.9% (10.6-13)

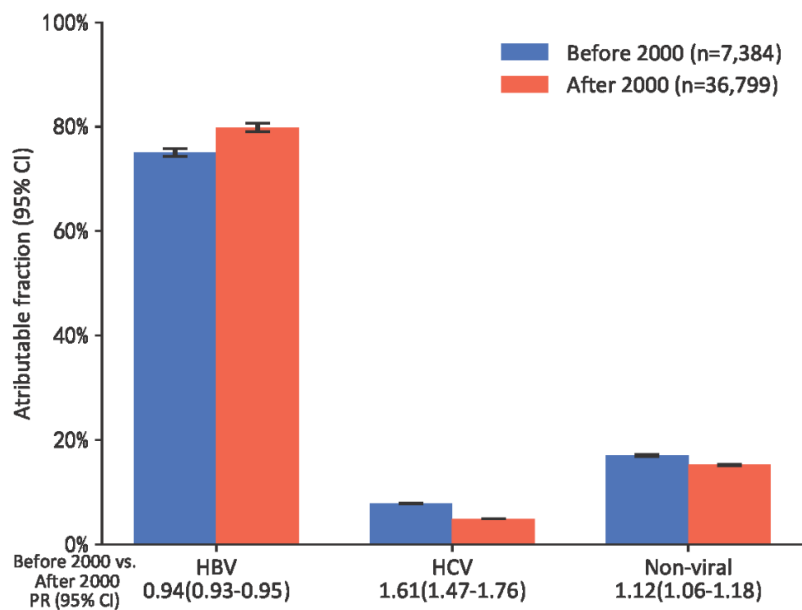
Anhui	3	212	73.4% (70.4-76)	13.4% (11.1-16)	13.2% (10.9-16)
Jiangxi	1	238	93.7% (92.1-95)	0.0% (0.0-0)	6.3% (4.7-8)
Fujian	1	153	73.0% (69.4-77)	14.0% (11.2-17)	13.1% (10.3-16)
Subtotal	44	6,990	73.7% (73.2-74)	6.9% (6.6-7)	19.4% (19.0-20)
North China					
Beijing	13	3,936	82.5% (81.9-83)	9.1% (8.6-10)	8.4% (7.9-9)
Shanxi	4	815	68.9% (67.3-71)	11.8% (10.7-13)	19.3% (17.9-21)
Inner Mongolia	3	230	54.8% (51.5-58)	8.3% (6.5-10)	37.0% (33.8-40)
Hebei	2	135	74.8% (71.0-79)	5.2% (3.3-7)	20.0% (16.6-23)
Tianjin	1	413	66.9% (64.6-69)	20.0% (18.0-22)	13.1% (11.4-15)
Subtotal	23	5,529	78.1% (77.5-79)	10.1% (9.7-11)	11.8% (11.4-12)
Northeast China					
Liaoning	6	680	69.9% (68.1-72)	11.9% (10.6-13)	18.2% (16.8-20)
Heilongjiang	5	315	72.8% (70.2-75)	6.6% (5.2-8)	20.6% (18.4-23)
Jilin	4	1,883	74.5% (73.5-75)	13.8% (13.0-15)	11.7% (11.0-12)
Subtotal	15	2,878	73.2% (72.4-74)	12.6% (11.9-13)	14.2% (13.6-15)
Southwest China					
Sichuan	8	3,801	79.6% (78.9-80)	2.5% (2.2-3)	17.9% (17.3-19)

Chongqing	2	422	77.0% (75.0-79)	4.3% (3.3-5)	18.7% (16.8-21)
Guizhou	1	762	57.2% (55.4-59)	3.1% (2.5-4)	39.6% (37.9-41)
Subtotal	11	4,985	75.9% (75.3-77)	2.7% (2.5-3)	21.3% (20.7-22)
Northwest China					
Shaanxi	7	1,167	78.1% (76.9-79)	8.5% (7.7-9)	13.5% (12.5-14)
Xinjiang	2	341	44.5% (41.8-47)	12.4% (10.6-14)	43.1% (40.4-46)
Gansu	1	112	60.9% (56.3-66)	14.9% (11.6-18)	24.1% (20.1-28)
Subtotal	10	1,620	69.8% (68.7-71)	9.7% (9.0-10)	20.4% (19.4-21)
Multiple regions					
Subtotal	6	12,656	83.5% (83.2-84)	2.1% (2.0-2)	14.4% (14.1-15)
Overall*	154	44,183	76.6% (76.4-77)	6.8% (6.7-7)	16.6% (16.4-17)

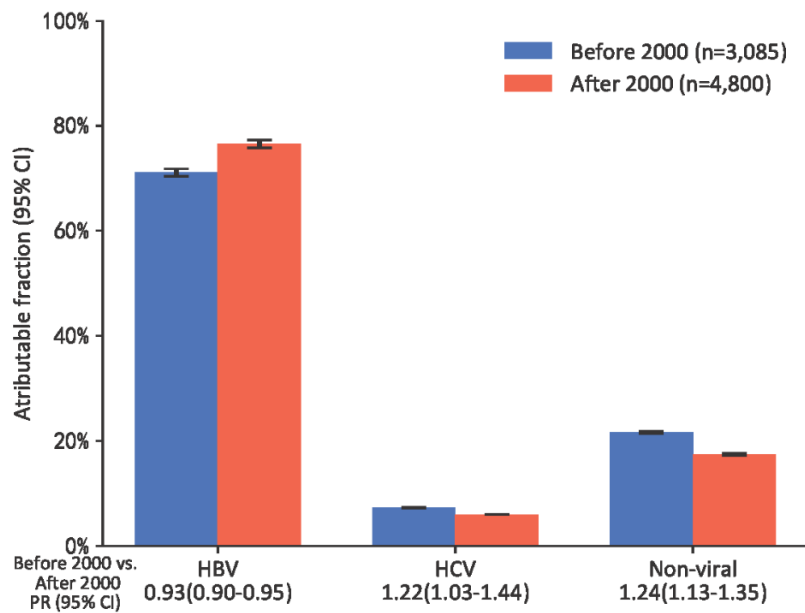
* The overall AFs of HBV, HCV, and non-viral etiology were weighted using pooled estimates in each region and population sizes of regions (see method). HBV: Hepatitis B virus; HCV: Hepatitis C virus; CI: confidence interval.



Supplementary Figure 4. Attributable fractions (AFs) of HBV, HCV and non-viral etiology in HCC and ICC cases. HBV: Hepatitis B virus; HCV: Hepatitis C virus; HCC: hepatocellular carcinoma; ICC: intrahepatic cholangiocarcinoma.



Supplementary Figure 5. Attributable fractions (AFs) of HBV, HCV and non-viral etiology in HCC cases recruited before and after 2000 years. HBV: Hepatitis B virus; HCV: Hepatitis C virus; HCC: hepatocellular carcinoma.



Supplementary Figure 6. Attributable fractions (AFs) of HBV, HCV and non-viral etiology with restriction in PLC cases detected by HBsAg and anti-HCV before and after 2000 years. HBV: Hepatitis B virus; HCV: Hepatitis C virus; PLC: primary liver cancer.

REFERENCE

1. 陈楚昂, 高秀琴, 彭秀云, 李微: 原发性肝细胞癌中的乙、丙型肝炎病毒感染. *实用医学杂志* 1993(4):28-29.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzAwMDAwMzA1MzcyMRoId29jeG02YXI%3D>
2. 蒋明德, 曾维政, 楚人俊, 赵平, 张大华, 张家碧: 肝细胞癌患者血清丙型肝炎病毒抗体和丙型肝炎病毒 RNA 的研究. *中华医学杂志* 1993, 73(3):131-134.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg16aHI4MTk5MzAzMDAzGgh3b2N4bTZheg%3D%3D>
3. 杨建民, 刘为纹, 晋华源, CHONGQING: RELATIONSHIP OF HEPATITIS C VIRUS INFECTION WITH PRIMARY HEPATIC CARCINOMA: AN INVESTIGATION OF SERUM HCV RNA IN DIFFERENT POPULATION GROUPS. *中国人民解放军军医大学学报 (英文版)* 1993(2):109-113.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzAwMDAwMTg5MzE1NRoId29jeG02YXI%3D>

4. 张振权, 黄天壬, 何振芳, 余家华, 徐庆芬, 黄昭东: 丙肝与乙肝病毒感染在原发性肝癌病因学上的相互关系研究. *广西医学* 1993(3):171-174.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzAwMDAwMDk4NjM2MhoId29jeG02YXI%3D>

5. 查文章, 杜竞辉, 王学浩, 黄祖瑚, 李军, 韩亚萍, 刘婷: 原发性肝癌、肝硬化患者血清中丙肝病毒抗体的检测. *江苏医药* 1994(2):62-64.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTQwMDUzOTgxNxoId29jeG02YXI%3D>

6. 陈士葆, 沈健伟: 消化系统恶性肿瘤患者血清丙型肝炎病毒抗体(抗 HCV)的感染情况. *中国肿瘤临床* 1994(5):17-19.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTQwMDU5Njc2ORoId29jeG02YXI%3D>

7. 邓燕林, 陈乃玲, 于春, 顾芳: 肝硬化及肝癌与乙丙型肝炎重叠感染的关系. *肝脏病杂志* 1994, 02(3):133.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhB6aGd6Ynp6MTk5NDAzMDMzGgh3b2N4bTZhcg%3D%3D>

8. 刘春荣, 刘东屏, 蔡至道, 石田, 董丽君, 庄宝珠: 慢性肝病与乙型、丙型肝炎病毒感染关系的探讨. *临床消化病杂志* 1994(2):55-58.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTQwMDMwMjY0NhoId29jeG02YXI%3D>

9. 刘喜泰, 韩絮琳, 屠振兴, 秦一中, 崔正权: 原发性肝癌与乙型、丙型肝炎病毒感染的关系. *第二军医大学学报* 1994(01):11-14. [DOI: 10.16781/j.0258-879x.1994.01.005]

10. 王金桃, 王俊升, 张欣樵, 张锡炳, 杨兴中: 慢性肝炎、肝硬化和肝癌与 HBV、HCV 感染关系的研究. *现代预防医学* 1994(1):14-17.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTQwMDUwNjM1NhoId29jeG02YXI%3D>

11. 谢小明, 苏先狮, 张铮, 郑宣鹤, 杨旭, 曾晓波, 陈一德, 李良友, 刘国清, 皮执民, 黄江生: 肝癌患者丙型肝炎病毒感染的研究. *中国现代医学杂志* 1994(1):27-28.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTQwMDc5MTE5MxoId29jeG02YXI%3D>

12. 余竹元, 汤钊猷, 杨秉辉: **The Paper Symposium on PLC VIRAL HEPATITIS (HBV AND HCV) BACKGROUND IN CHINESE PATIENTS WITH HEPATOCELLULAR CARCINOMA.** *Chinese Journal of Cancer Research* 1994(02):79-82.
https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXydlfq1A9yuMG5a1iBFV0VsNXILRZJctuf5nhcN--79h-N5wZ6NRQDEXfzeueiKEQJX0OWf4Cgpk_VyQxRL9DXYe0oi4wbmmXoQplcB41XIU8g==&uniplatform=CHKD
13. 袁爱力, 罗元辉: **原发性肝癌 HBV,HCV,HDV 感染状态的研究.** *临床消化病杂志* 1994(1):44.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTQwMDMwMjY0MRoId29jeG02YXI%3D>
14. 张方信, 梁守德, 袁爱力: **HCV、HBV 与肝硬变及原发性肝癌关系的初步探讨.** *癌症* 1994(2):144-146.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTQwMDE0OTE5MhoId29jeG02YXI%3D>
15. Okuno H, Xie ZC, Lu BY, Qin X, Takasu M, Kano H, Shiozaki Y, Inoue K: **A low prevalence of anti-hepatitis C virus antibody in patients with hepatocellular carcinoma in Guangxi Province, southern China.** *Cancer* 1994, 73(1):58-62. [DOI: 10.1002/1097-0142(19940101)73:1<58::aid-cnrcr2820730112>3.0.co;2-e]
16. 曾文铤, 马佩球, 朱科伦, 谭挺任, 胡国龄: **原发性肝癌与 HCV、HBV 感染关系的探讨.** *现代临床医学生物工程学杂志* 1995(01):49-52.
https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyfxjDIHvsteZEq415yaCLx6t50FCRlhx8AvSOD2qLxZqBHq-5REZ76QBHiakbKGQaybirR9md_gE81-i_JsycRgiu-B5c1GjjiF2wEusZ4OEGQ==&uniplatform=CHKD
17. 崔广林, 唐芙爱, 李振峰, 刘益清, 徐志林, 段芳龄: **聚合酶链反应检测肝硬化、肝癌患者血清中 HBVDNA、HCVRNA.** *临床内科杂志* 1995(02):33-34.
https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyfe0J0eICCGpBD6EZKN85Fz3FywYpHQ4Tm9iTa99C_JzfziL5Y_m9nPNHcyM1SFIQXdmXAbyQUnZrosmlR64hUuasiHS6oJofZmoXVd8WBQ==&uniplatform=CHKD
18. 费素娟, 陈玉林, 颜洁明, 杨秀珍: **原发性肝癌与 HBV 及 HCV 感染关系的探**

讨. 医师进修杂志 1995(2):13-15.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTUwMDU4NzQyNRoId29jeG02YXI%3D>

19. 龚健, 杨进业, 李荣成, 王树声, 李艳萍, 陈琨琳: 肝癌高发区隆安且 HCV 与 PLC 关系的流行病学研究. 肿瘤 1995(S1):169.

https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyeCLjCO75w92DUHKd4lfeEqJfMYtbrvPRerCKNds0L4dGh-TTyrPmcXtgDezGKavp4PHg_gI9djLRMTPw-fkZZi6f_xDsz-ufpXtrLa3AchQ==&uniplatform=CHKD

20. 胡相起, 周善良, 杜兆平, 杜绍财, 金德芹: 临沂市肝癌患者 HBV、HCV 双重感染的研究. 临沂医专学报 1995(2):108-110.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTUwMDMyNTI2ORoId29jeG02YXI%3D>

21. 潘文胜, 田辛, 唐时幸: 丙型肝炎病毒感染与原发肝癌关系的病例 - 对照研究. 中国公共卫生 1995(7):291-294.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTUwMDYxMzE2ORoId29jeG02YXI%3D>

22. 邱望龙, 孙菊芬, 李福元, 唐洪彦, 冼超: 109 例肝细胞癌患者 HCV 感染及酶切基因型. 广州医药 1995(4):17-18.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTUwMDE4NjcwMxoId29jeG02YXI%3D>

23. 唐任光, 覃后继, 黄重敏, 覃亚勤, 李军, 何延专: 原发性肝癌与乙型、丙型肝炎病毒感染关系的探讨. 右江民族医学院学报 1995(03):300-301.

https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXydPd5bJ_2TEpcAdqDnPSZH6Q5oyYZSy-_iN_wXUQ6Awh5PCS_nINqH3yzDWUhGl6VJ5D8o5BllYTZaFEwQRhS2WLbMfmJs89u-oldgJZpNAsw==&uniplatform=CHKD

24. 王树林, 张耀铮: HEPATITIS B AND C VIRUSES AND THEIR INTERACTION IN THE PATHOGENESIS OF HEPATOCELLULAR CARCINOMA. 中国癌症研究 (英文版) 1995(4):275-279.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTUwMDYzNjM0NxoId29jeG02YXI%3D>

25. 吴安华, 张铮, 胡国龄, 任培上, 谭德明, DISEASES DDOI, HOSPITOL X, UNIUNIVERSITY HM: 肝细胞癌患者血清与癌组织中抗 HCV 及 HCVRNA 的检测. *湖南医科大学学报* 1995(3):257-259.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTUwMDIyNzc0NxoId29jeG02YXI%3D>
26. 徐艳云: 原发性肝癌 HCV、HBV 感染状况调查. *河南医药信息* 1995(1):29-30.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTUwMDI0MTA5ORoId29jeG02YXI%3D>
27. 赵悦友, 刘桂仙, 刘路, 杨洪业, 李子庆, 何伶俐: 乙丙型肝炎病毒双重感染与原发性肝癌. *癌症* 1995(5):383-384.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTUwMDE1OTk0OBoId29jeG02YXI%3D>
28. 周兰, 林金容, 王晓怀: 丙型肝炎与原发性肝癌的研究. *浙江医学情报* 1995(4):24,45.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTUwMDgyOTE1MhoId29jeG02YXI%3D>
29. Yuan JM, Ross RK, Stanczyk FZ, Govindarajan S, Gao YT, Henderson BE, Yu MC: A cohort study of serum testosterone and hepatocellular carcinoma in Shanghai, China. *Int J Cancer* 1995, 63(4):491-493. [DOI: 10.1002/ijc.2910630405]
30. 曲波, 程志, 钟照华, 李呼伦, 凌虹, 谷鸿喜: HBV 和 HCV 感染与原发性肝细胞癌发生的相关性研究. *哈尔滨医科大学学报* 1996(3):10-13.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTYwMDkxNjI4NRoId29jeG02YXI%3D>
31. 施根林, 何海明, 林国英: 原发性肝癌患者血清乙型肝炎病毒标志和丙型肝炎病毒抗体检测分析. *武警医学院学报* 1996(03):19-20. [DOI: 10.16548/j.2095-3720.1996.03.007]
32. 唐勇, 黎玉秀, 桂郁馥: 肝硬化、肝癌患者乙型及丙型肝炎病毒的检测. *新疆医学院学报* 1996(03):244-246.
https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyeWvI8RS8XaVZXqUfzpt3Gxh9Yn3-Ppf7ZhLoRHp2jaoXj_OQ-ZtR-YqmWzC42Fh88AnCciN_rw6eGWejfmarAD1NwphkAZ7SBxKU5VFdqgw==&uniplatform=CHKD

33. 王爱林, 朱力: 原发性肝癌和乙型、丙型肝炎病毒感染的相关性. *白求恩医科大学学报* 1996(1):79-80.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzlwMjMxMjI2Eg5RSzE5OTYwMDE4NDY3MRoId29jeG02YXI%3D>

34. 王春杰, 王文亮, 王伯: 肝硬变和肝癌组织内 HCV RNA 及 HBV X 基因的存在及意义. *癌症* 1996(02):99-101.

https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyelFCUR26oJSBe51Yk7ORLXYP4zktzmgNaL0RoaEnyGmC19sY0WxlFbmOJpuQXTmAZTdhz0JDVwLZEYynnCQFUSDLagA-pKVco6V_3lRcqhYA==&uniplatform=CHKD

35. 王春香, 封秀红, 袁瑞珍, 李东升, 王红君, 程素琴: HBV、HCV 感染与原发性肝细胞型肝癌关系的研究. *中国卫生检验杂志* 1996(3):184-185.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzlwMjMxMjI2Eg5RSzE5OTYwMDg4MzczNB0lclj16c202OXQ%3D>

36. 王志瑾, 周元平, 程兵, 梁焯南: 广东省顺德市原发性肝癌危险因素流行病学研究. *中华流行病学杂志* 1996, 17(3):141-144.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzlwMjMxMjI2Eg96aGx4YngxOTk2MDMwMTAaCHI5enNtNjI0>

37. 吴朝梅, 李新吉, 陈卫华, 崔秋英, 张曼利: 肝癌与肝硬化患者的 HBV、HCV 血清标志物检测与分析. *现代中西医结合杂志* 1996(1):25.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzlwMjMxMjI2Eg5RSzE5OTYwMDU2NTE1NR0lclj16c202OXQ%3D>

38. 张惠忠, 唐漾波, 陆献瑜: 用聚合酶链反应检测人肝细胞癌乙型肝炎病毒 DNA 和丙型肝炎病毒 RNA. *中华病理学杂志* 1996, 25(2):70-72.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzlwMjMxMjI2Eg56aGJseDE5OTYwMjAyNB0lclj16c202OXQ%3D>

39. 张中福, 李花, 李爱菊, 张涛: 肝病中乙肝和丙肝病毒重叠感染的血清学分析. *河南医药信息* 1996(2):12.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzlwMjMxMjI2Eg5RSzE5OTYwMDI1MjAwNxoIclj16c202OXQ%3D>

40. 沈靖, 徐耀初, 高瞻, 钮菊英, 沈洪兵, 叶本法: HCV 与 HBV 对 HCC 病因协同作用的流行病学研究. *新消化病学杂志* 1997(2):8-10.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDYxNjU5NhoIcjl6c202OXQ%3D>

41. 陈银石: 肝细胞癌与乙、丙型肝炎病毒感染关系的探讨. *临床荟萃* 1997(04):157-158.

https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyfefuqf9Va8laoY_honHv2rhEYLlmWOuUAv7V1w390dMwmA8YAR7Ksc5k2O4Vrel9F5jf9zE0cpiC9cgL-7PJjNd3OI85ovNa6Q2XI6tTROA==&uniplatform=CHKD

42. 杜耀民, 陈晓明: 丙型肝炎病毒与肝细胞癌的流行病学研究. *新医学* 1997(S1):82-83.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDYyMjE4MxoIcjl6c202OXQ%3D>

43. 郭秀兰, 闫茂星: 肝细胞癌患者的 HCV 与 HBV 标志物研究. *内蒙古医学院学报* 1997(4):61.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDQxMjM3NRoIcjl6c202OXQ%3D>

44. 李冬田, 贾彦征, 李秋香, 佟惠春, 曹传海, 任中原: 天津地区 209 例慢性肝病患者病原学分析及其临床意义. *天津医药* 1997(3):131-135.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDg1MTM0NxoIcjl6c202OXQ%3D>

45. 林金容, 郑琼珍, 王晓怀, COMMAND GHOG, GUANGZHOU, 510010 G, P.R.CHINA: 应用巢式 PCR 检测原发性肝癌患者血清中 HCV-RNA. *中国现代医学杂志* 1997(5):6-7,80.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDc0NTk3OBoIcjl6c202OXQ%3D>

46. 龙敏, 邬质彬, 杜绍财, 徐国城, 谢志春: 广西 85 例肝癌患者庚型肝炎病毒感染的血清学研究. *广西预防医学* 1997(01):5-8.

https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyfEXhYM22e6UnV2PLR6zYYy-xCBdn7CJB95hLkrxNn2RVabSmN39CCItAY6fV_bToPqeW1QcSo4NMEX7LyI5xxGRoDvd_PjgO_d6PLIVZ1kjg==&uniplatform=CHKD

47. 鲁朝晖, 侯书菊: HBV 和 HCV 感染与肝硬化和原发性肝癌患者的关系. *胃肠*

病学和肝病学杂志 1997(3):94,96.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDg1NjgwNRoIcjl6c202OXQ%3D>

48. 陆一平: 原发性肝癌患者 HBV、HCV 感染情况分析. 广西医学 1997(1):150-151.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDE2MDEzNhoIcjl6c202OXQ%3D>

49. 马志敏, 冯懿正, 陈智: 肝细胞癌患者 HBV、HCV 感染状态的研究. 中国肿瘤临床 1997(2):108-111.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDY5OTg0MRoIcjl6c202OXQ%3D>

50. 王珊珊, 姜普林, 庞红霞, 彭桂福: 广州市原发性肝癌的病因流行病学调查. 中华流行病学杂志 1997(1):33-36.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDcwOTE4NRoIcjl6c202OXQ%3D>

51. 王文奇: 乙型、丙型肝炎病毒与肝细胞癌的关系. 山东医药 1997(4):17.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDQ3MDI2NBoIcjl6c202OXQ%3D>

52. 魏金荣, 刘金兰, 张玉魁, 张岐山: 乙型和丙型肝炎病毒感染与肝细胞癌. 中华传染病杂志 1997, 15(3):151-153.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhB6aGNyYnp6MTk5NzAzMDA2GghyOXpzbTY5dA%3D%3D>

53. 吴健, 郑树森, 范俊, 马伟杭: 丙型肝炎病毒和乙型肝炎病毒重叠感染对肝细胞癌的影响. 中国现代医学杂志 1997(12):19-20,23-91.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDkyNzQ2NBoIcjl6c202OXQ%3D>

54. 邢益平, 贾辅忠, 黄祖瑚: GOR 抗体、HCV 感染与原发性肝癌关系的初步探讨. 南京医科大学学报 1997(01):4-7.

https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyeUiN1AtMUBEOTLWxWgkyvCvU19vkiGkjiJWt4o9Jx0KJ5L_7oom3HZt0FDWuCFWot8MqHXoJaDfjneAJ22gc3ADBXiH854RIwi9Otaqaa5YA==&uniplatform=CHKD

55. 姚登福, 清水一郎: 不同地区慢性肝病患者 HCV 感染株间的比较评价. *胃肠病学和肝病学杂志* 1997, **006**(1):34-41.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMTA5OTAxMRoIcjl6c202OXQ%3D>

56. 叶青, 佟俊杰, 史明坤, 包国生: 秦皇岛市各型肝炎病毒感染的血清流行病学研究. *中华实验和临床病毒学杂志* 1997, **11**(1):37-40.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhN6aHN5aGxjYmR4MTk5NzAxMDE1GghyOXpzbTY5dA%3D%3D>

57. 俞顺章, 资晓林, 陈刚, 李迥: 我国四个地区肝炎病毒感染与肝癌的病例对照研究. *中华流行病学杂志* 1997(4):23-25.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDcwOTMzNhoIcjl6c202OXQ%3D>

58. 赵彩彦, 王麟士, 曹治宸, 胡云龙, UNIVERSITY HM, SHIJIAZHANG: 原发性肝癌与嗜肝病毒感染关系探讨. *实用肝脏病杂志* 1997(1):3-5.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDA5NzQyORoIcjl6c202OXQ%3D>

59. 周国雄, 张弘: 慢性肝病中 HBV、HCV 单独感染与双重感染的临床特点. *南通医学院学报* 1997(4):70,72.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDQxNjU0MhoIcjl6c202OXQ%3D>

60. 周士新, 徐道寅, 孙金兰, 傅友恒, 李源泉: 丙型肝炎病毒在原发性肝癌发生中的作用. *疾病控制杂志* 1997(1):35-37.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDI2Mzc0NRoIcjl6c202OXQ%3D>

61. 左群, 刘拥军, 梁文同: HBV 和 HCV 在原发性肝细胞癌发病中协同作用的病例对照研究. *中国公共卫生学报* 1997(5):19-21.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTcwMDc0NDExNB0Icjl6c202OXQ%3D>

62. 崔晓红, 潘卫, 宋艳斌, 赵平, 陈景山, 朱诗应, 戚中田: 原发性肝癌患者血清中庚型肝炎病毒基因的检测. *中国肿瘤临床* 1998(2):34-35.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMx>

[MjI2Eg5RSzE5OTgwMDc0MjM2MRoIcjl6c202OXQ%3D](https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTgwMDc0MjM2MRoIcjl6c202OXQ%3D)

63. 代敏, 石宇, 张建营, 周元方, 张梅喜, 何钟: **HBV、HCV 在原发性肝癌发生中的相互作用研究**. *河南肿瘤学杂志* 1998(2):81-83.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTgwMDI0OTkxMhoIcjl6c202OXQ%3D>

64. 翟坤光, 刘阳, 李漫松, 李浩, 全善今: **原发性肝癌 66 例临床资料分析**. *吉林医学* 1998(2):21-22.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTgwMDMwOTQ3OBoIcjl6c202OXQ%3D>

65. 高晓虹, 张翠莉, 李晓枫, 梅华, 齐芳, 朱晓艳: **原发性肝细胞癌患者血清乙型与丙型肝炎病毒感染状况分析**. *大连医科大学学报* 1998(1):19-21.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTgwMDA0ODM2NRoIcjl6c202OXQ%3D>

66. 顾伟玲, 甘世新: **原发性肝癌与乙型和丙型肝炎病毒感染的关系**. *山西预防医学* 1998, 007(1):33.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTgwMTE3MDUzMxoIcjl6c202OXQ%3D>

67. 廖绵初, 干侣仙, 吴艳环, UNIVERSITY X, XIAMEN, HOSPITAL Z: **肝癌、肝硬化患者的戊型肝炎病毒感染**. *中国癌症杂志* 1998(2):17-19.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTgwMDk2ODE0MhoIcjl6c202OXQ%3D>

68. 吴秉仁, 南丽娟, 韩晓芳: **HBV、HCV 单独和双重感染与肝硬化和肝癌发病关系的分析**. *疾病控制杂志* 1998(3):199-201.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTgwMDI3OTU0NhoIcjl6c202OXQ%3D>

69. 颜学兵, 吴文漪: **肝细胞癌与丙型肝炎病毒感染临床观察**. *医学理论与实践* 1998(1):3-4.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTgwMDY5MTE2MRoIcjl6c202OXQ%3D>

70. 余珊, 蔡宇, 葛宁灵: **原发性肝癌与肝炎病毒感染状态的相关性分析**. *云南医药* 1998(5):20-21.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTgwMDY4MTU4NRoIcjl6c202OXQ%3D>

71. 袁锦丽: 原发性肝癌患者 HBsAg、抗-HCV 调查. *华夏医学* 1998(03):95.

https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXye-nVS6z99_QlxU22DM1e-eOpqC_n877lkzzTEcQYt0x9m-RY3BN4cwJy0va9T-seMdqyatGh-U4WC0xjF0xUI6-zPi_SFnT_R4iU1LTHfDBw==&uniplatform=CHKD

72. Zhang JY, Dai M, Wang X, Lu WQ, Li DS, Zhang MX, Wang KJ, Dai LP, Han SG, Zhou YF, Zhuang H: A case-control study of hepatitis B and C virus infection as risk factors for hepatocellular carcinoma in Henan, China. *Int J Epidemiol* 1998, 27(4):574-578. [DOI: 10.1093/ije/27.4.574]

73. 崔莲花, 方今女, 金辉哲: 肝炎病毒在朝鲜族原发性肝癌发生中相互作用的分析. *中国慢性病预防与控制* 1999, 7(1):28.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhN6Z214YnlmeWt6MTk5OTAxMDExGghyOXpzbTY5dA%3D%3D>

74. 范凝芳, 郭爱芝, 屈文兰: 乙丙肝病毒感染与原发性肝癌关系的流行病学调查. *长治医学院学报* 1999(2):5-6.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTkwMDAyOTM5ORoIcjl6c202OXQ%3D>

75. 郭荣平, 李国辉, 李锦清, 周元平, 彭晓谋: 肝细胞癌血清、肝组织中 HCV 和 HBV 感染状况的研究. *癌症* 1999, 18(Z1):20-23.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EgtlejE5OTlaMTAwNxoIcjl6c202OXQ%3D>

76. 李丹, 崔莲花, 金东洙, 朴熙绪: 原发性肝癌患者乙型肝炎病毒与丙型肝炎病毒感染标志物的分析. *延边大学医学学报* 1999(3):185-188.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTkwMTEwMzI2NRoIcjl6c202OXQ%3D>

77. 廖慧钰, 郎振为, 朱仁平: 肝细胞癌组织中庚型肝炎病毒感染的研究. *中华实验和临床病毒学杂志* 1999(2):183.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhN6aHN5aGxjYmR4MTk5OTAyMDIxGghyOXpzbTY5dA%3D%3D>

78. 钱世萍, 沈宇飞, 洪亚南: 71 例肝细胞癌患者肝炎病毒感染状况. *河北医学*

1999(8):23-25.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzE5OTkwMDI1Njg3NxoIcjl6c202OXQ%3D>

79. 王金桃, 赵宏光, 赵淑芳, 李佩珍: 山西省原发性肝癌丙型肝炎病毒、乙型肝炎病毒感染状况分析. *中华流行病学杂志* 1999, 20(4):215-217.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg96aGx4YngxOTk5MDQwMDcaCHI5enNtNjl0>

80. 王可深, 丛书英: 原发性肝癌与肝炎病毒感染的关系. *齐鲁医学杂志* 1999, 14(2):95-96.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg9xbHl4enoxOTk5MDIwMDcaCHI5enNtNjl0>

81. 程爱华, 朱秀芝: 某地区慢性肝病与乙型和丙型肝炎病毒感染关系分析. *菏泽医专学报* 2000(2):75-76.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg5RSzIwMDAwMDc0Mjg2MBoIcjl6c202OXQ%3D>

82. 郭辛, 潘剑英: 乙、丙型肝炎病毒感染与原发性肝癌关系的研究. *山西医科大学学报* 2000, 31(6):518-519.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhFzeHlrZHh4YjIwMDAwNjAyMxoIcjl6c202OXQ%3D>

83. 张云涛, 张萍, 王兴泰, 杨宗模, 王蕾: 肿瘤患者中肝炎病毒感染状况分析. *临床军医杂志* 2000, 28(4):64-66.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhFsaW5janl6ejIwMDAwNDZMhoIcjl6c202OXQ%3D>

84. 赵久法, 杨沛, 苏文, 崔琢, 王淑民: 丙型肝炎病毒感染与肝细胞癌. *蚌埠医学院学报* 2000, 25(3):169-170.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhBiYnl4eXhiMjAwMDAzMDA3GghyOXpzbTY5dA%3D%3D>

85. Lei XZ, Naitoh S, Deng XW, Zhao LS, Akahane Y: **GB virus C/hepatitis G virus infection in Chinese patients with hepatocellular carcinoma.** *Hepatol Res* 2000, 16(2):91-97. [DOI: 10.1016/S1386-6346(99)00007-8]

86. 黄飞, 倪正平, 张启南, 陆建华: 肝癌患者肝炎病毒感染背景分析. *肝脏* 2001,

6(4):253-254. [DOI: 10.3969/j.issn.1008-1704.2001.04.018]

87. 黄艳文,刁琳琪: **HCC 与 HBV、HCV 感染关系的研究**. *河南预防医学杂志* 2001, **12**(3):133-134. [DOI: 10.3969/j.issn.1006-8414.2001.03.003]

88. 蒋明德,曾维政,褚桂珍,徐辉,陈晓斌,佟安娟,张立: **肝癌组织 HBV 和 HCV 基因意义**. *西南国防医药* 2001, **11**(2):79-82. [DOI: 10.3969/j.issn.1004-0188.2001.02.002]

89. 李朝霞,梁敏坚,张晓红,陈忠诚: **原发性肝癌的早期辅助诊断**. *广东医学* 2001, **22**(2):139-140. [DOI: 10.3969/j.issn.1001-9448.2001.02.021]

90. 石春俊,朱人敏,李晓华: **丙型肝炎病毒与肝细胞癌关系的临床研究**. *中国基层医药* 2001, **8**(4):329. [DOI: 10.3760/cma.j.issn.1008-6706.2001.04.028]

91. 王文亮,王春杰,师建国,王冰枫: **肝癌中 HBV 和 HCV 基因和抗原的分布及意义**. *中国病毒学* 2001(04):37-41+109.

[https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyel4oC-](https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyel4oC-xI8WiHHHl3AISDXaXpUhAXqpYe0mJi-P-bkFEht6rxblK9gyYuYQZLOxkjagrGLjGMsM9SaEKDNOahhzdOIKwLpsGucXALCGcUtXwg==&uniplatform=CHKD)

[xI8WiHHHl3AISDXaXpUhAXqpYe0mJi-P-](https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyel4oC-xI8WiHHHl3AISDXaXpUhAXqpYe0mJi-P-bkFEht6rxblK9gyYuYQZLOxkjagrGLjGMsM9SaEKDNOahhzdOIKwLpsGucXALCGcUtXwg==&uniplatform=CHKD)

[bkFEht6rxblK9gyYuYQZLOxkjagrGLjGMsM9SaEKDNOahhzdOIKwLpsGucXALC](https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyel4oC-xI8WiHHHl3AISDXaXpUhAXqpYe0mJi-P-bkFEht6rxblK9gyYuYQZLOxkjagrGLjGMsM9SaEKDNOahhzdOIKwLpsGucXALCGcUtXwg==&uniplatform=CHKD)

[GcUtXwg==&uniplatform=CHKD](https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyel4oC-xI8WiHHHl3AISDXaXpUhAXqpYe0mJi-P-bkFEht6rxblK9gyYuYQZLOxkjagrGLjGMsM9SaEKDNOahhzdOIKwLpsGucXALCGcUtXwg==&uniplatform=CHKD)

92. 朱峰,钱家鸣,杨晓鸥,孙钢,鲁重美: **TT 病毒与原发性肝细胞癌发病的关系**. *中国医学科学院学报* 2001, **23**(6):627-630.

[https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMx](https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhJ6Z3I4a3h5eGIyMDAxMDYwMjEaCHI5enNtNjI0)

[MjI2EhJ6Z3I4a3h5eGIyMDAxMDYwMjEaCHI5enNtNjI0](https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhJ6Z3I4a3h5eGIyMDAxMDYwMjEaCHI5enNtNjI0)

93. 王乃昌,刘玉萍,吴立平: **原发性肝细胞癌 HBV、HCV 感染状况的分析**. *疾病监测* 2002, **17**(5):165-167. [DOI: 10.3784/j.issn.1003-9961.2002.05.005]

94. 杨少奇,郭新宁,王丽明,胡建国,杨力: **430 例原发性肝癌患者病因及临床特点的分析**. *宁夏医学杂志* 2002, **24**(7):407-408. [DOI: 10.3969/j.issn.1001-5949.2002.07.009]

95. 张留寿,吴淑华,朱桂芳,徐华,黄灵: **原发性肝癌乙型肝炎病毒和丙型肝炎病毒血清学标志的研究**. *中国预防医学杂志* 2002, **3**(4):299-300. [DOI: 10.3969/j.issn.1009-6639.2002.04.016]

96. 邹长林,陈哲京,金文扬,倪士昌,陈邦飞,胡云良: **温州地区原发性肝癌流行病学研究**. *中国肿瘤* 2002, **11**(8):453-455. [DOI: 10.3969/j.issn.1004-0242.2002.08.011]

97. Fang F, Wang HL, Ye P, Deng HL, Dong GL, Ma LL, Wang J: **Detection of autoantibodies in the serum of primary hepatocarcinoma patients.** *Hepatobiliary Pancreat Dis Int* 2002, **1**(1):94-95. [PMID: 14607633]
<https://www.ncbi.nlm.nih.gov/pubmed/14607633>
98. Jin Y, Abe K, Sato Y, Aita K, Irie H, Shiga J: **Hepatitis B and C virus infection and p53 mutations in human hepatocellular carcinoma in Harbin, Heilongjian Province, China.** *Hepatol Res* 2002, **24**(4):379-384. [DOI: 10.1016/S1386-6346(02)00135-3]
99. Wang BE, Ma WM, Sulaiman A, Noer S, Sumoharjo S, Sumarsidi D, Tandon BN, Nakao K, Mishiro S, Miyakawa Y, Akahane Y, Suzuki H: **Demographic, clinical, and virological characteristics of hepatocellular carcinoma in Asia: survey of 414 patients from four countries.** *J Med Virol* 2002, **67**(3):394-400. [DOI: 10.1002/jmv.10087]
100. 曾金华, 戴云山, 曹民权, 胡小奎: **乙型和丙型肝炎病毒血清学标志与原发性肝癌关系的研究.** *现代预防医学* 2003, **30**(3):324-325. [DOI: 10.3969/j.issn.1003-8507.2003.03.008]
101. 韩亚萍, 张永祥, 刘婷, 屠聿修, 黄祖瑚: **50例原发性肝癌 HBV、HCV 核酸的检测.** *实用临床医药杂志* 2003, **7**(6):593-593. [DOI: 10.3969/j.issn.1672-2353.2003.06.052]
102. 胡建国, 杨少奇, 郭新宁: **原发性肝癌患者肝炎病毒指标的研究.** *陕西医学杂志* 2003, **32**(12):1089-1090. [DOI: 10.3969/j.issn.1000-7377.2003.12.014]
103. 李岩, 高歌, 王江滨, 王丽英, 王秀英, 刘德东: **饮酒与原发性肝癌关系的调查--附吉林省 1057 例原发性肝癌病因学分析.** *临床肝胆病杂志* 2003, **19**(3):140-142. [DOI: 10.3969/j.issn.1001-5256.2003.03.005]
104. 王晶波, 皋群, 许百全: **原发性肝癌 75 例临床分析.** *山东医药* 2003, **43**(7):43. [DOI: 10.3969/j.issn.1002-266X.2003.07.023]
105. 王征帆: **原发性肝癌与乙、丙、TTV 型肝炎病毒感染关系探讨.** *河南医学研究* 2003, **12**(1):43-44. [DOI: 10.3969/j.issn.1004-437X.2003.01.014]
106. 徐玉琴, 唐立明, 李宏文, 林晓东, 金晓明, 张磊: **HCC 病理学和超微结构与 HBV、HCV 感染关系的研究.** *世界肿瘤杂志* 2003, **2**(1):38-40.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMx>

107. 丁保国, 樊冬梅, 穆丽娜, 俞顺章: 乙型肝炎、丙型肝炎病毒感染与肝癌的病例对照研究. *中华流行病学杂志* 2004, **25**(1):22. [DOI: 10.3760/j.issn:0254-6450.2004.01.024]
108. 高纪东, 邵永孚, 许杨, 明利华, 吴志远, 刘国亭, 王小红, 王文红, 冯晓丽, 孙宗棠: 中国北方肝细胞癌与乙肝病毒感染的紧密关联性. *中华肝胆外科杂志* 2004, **10**(6):363-365. [DOI: 10.3760/cma.j.issn.1007-8118.2004.06.002]
109. 王敏, 陈建, 李文捷, 赵卫东, 孙建, 刘言训: 肝炎病毒感染、饮酒与肝细胞癌病例对照研究. *中国公共卫生* 2004, **20**(12):1438-1439. [DOI: 10.3321/j.issn:1001-0580.2004.12.013]
110. 王启敏, 张竹梅, 边建超, 汤伯明, 王其军, 朱鑫, 樊巍巍, 曹燕燕: 洛阳市肝炎病毒感染与肝癌的血清流行病学研究. *河南预防医学杂志* 2004, **15**(4):197-199. [DOI: 10.3969/j.issn.1006-8414.2004.04.002]
111. 黄文成, 黄玲莎, 赵惠柳, 朱波, 王英, 刘志民, 黄昭东, 李佩章: 11376例肿瘤患者 HBsAg、抗-HCV 检测结果分析. *广西预防医学* 2005, **11**(2):85-86. [DOI: 10.3969/j.issn.1673-758X.2005.02.007]
112. 黄元夕, 贺岩, 金晓明, 张磊: 肝细胞癌的石蜡包埋组织中 HBV、HCV 和 HGV 的核酸分析. *哈尔滨医科大学学报* 2005, **39**(4):358-360. [DOI: 10.3969/j.issn.1000-1905.2005.04.019]
113. 李穗芬, 谭奕洲, 唐漾波, 张惠忠, 陈志浩: 三种肝炎病毒在肝细胞癌组织及慢性肝炎肝组织中的表达. *实用医技杂志* 2005, **12**(12):1567-1569. [DOI: 10.3969/j.issn.1671-5098.2005.12.022]
114. 罗春英, 魏一英, 于智军: 原发性肝癌患者的肝炎病毒感染情况分析. *中国热带医学* 2005, **5**(5):1011,1021. [DOI: 10.3969/j.issn.1009-9727.2005.05.035]
115. 米敬轩: 原发性肝癌 44 例诊疗分析. *实用医技杂志* 2005, **12**(19):2761-2761. [DOI: 10.3969/j.issn.1671-5098.2005.19.098]
116. 汪凯波, 韦忠亮, 梁任祥, 陈志刚: 原发性肝癌与乙丙型肝炎病毒感染的血清学分析及意义. *广西医学* 2005, **27**(9):1435-1436. [DOI: 10.3969/j.issn.0253-4304.2005.09.080]
117. 袁萍, 唐伟, 文进, 黎前明, 罗华, 梁伯衡, 郑庆鸣, 魏莉: 中国四川和日本东京两

- 地原发性肝癌手术患者肝炎病毒感染状况. *中华预防医学杂志* 2005, **39**(5):332-334. [DOI: 10.3760/j.issn:0253-9624.2005.05.010]
118. Feng JT, Liu YK, Song HY, Dai Z, Qin LX, Almofti MR, Fang CY, Lu HJ, Yang PY, Tang ZY: **Heat-shock protein 27: a potential biomarker for hepatocellular carcinoma identified by serum proteome analysis.** *Proteomics* 2005, **5**(17):4581-4588. [PMID: 16240287 DOI: 10.1002/pmic.200401309]
119. 陈务卿, 吴健林, 陈茂伟, 梁任祥, 韦忠亮: **HBV、HCV、HBV 和 HCV 重叠感染与 HCC 发生关系的研究.** *广西医科大学学报* 2006, **23**(4):530-532. [DOI: 10.3969/j.issn.1005-930X.2006.04.005]
120. 卢霞凤, 郑玲, 王艳丽: **251 例原发性肝癌肝炎病毒感染情况分析.** In: *第十五次全国中西医结合肝病学术会议论文汇编*. 天津; 2006: 136-138.
<https://d.wanfangdata.com.cn/conference/ChZDb25mZXJlbnNlTmV3UzIwMjQwMTA5Egc2MjczNzA1GghkeXd1cGhicQ%3D%3D>
121. 张吉才, 余宗涛, 吕军, 李海平, 冯景, 吴健民, 胡丽华: **HBV 感染与肝癌组织 CDKN2A 基因甲基化关系的研究.** *中华肿瘤防治杂志* 2006, **13**(12):892-895. [DOI: 10.3969/j.issn.1673-5269.2006.12.004]
122. 张俊勇, 宿长军, 张福奎, 王宝恩: **211 例原发性肝癌的临床特点与预后的关系.** *临床肝胆病杂志* 2006, **22**(4):288-289. [DOI: 10.3969/j.issn.1001-5256.2006.04.022]
123. 郑定容, 黄龙, 杨庆珣: **HBV、HCV 感染与 HCC 发生的关系.** *中国热带医学* 2006, **6**(1):73,80. [DOI: 10.3969/j.issn.1009-9727.2006.01.032]
124. 董金玲, 丁惠国, 赵龙, 李霞, 刘斌臣, 王颖: **北京地区 396 例肝癌死亡原因分析.** *首都医科大学学报* 2007, **28**(4):532-535. [DOI: 10.3969/j.issn.1006-7795.2007.04.028]
125. 罗湘蓉, 柯玉华, 朱传武: **原发性肝癌患者血清 HBV 基因型分析.** *实用肝脏病杂志* 2007, **10**(1):47-48. [DOI: 10.3969/j.issn.1672-5069.2007.01.018]
126. 吴素霞: **原发性肝癌与乙型肝炎病毒以及甲胎蛋白的关系.** *黑龙江医药科学* 2007, **30**(5):41,42. [DOI: 10.3969/j.issn.1008-0104.2007.05.044]
127. 肖琳, 赵力, 赵友云: **原发性肝癌患者血清 HBV-DNA 和 HCV-RNA 的含量分析.** *微循环学杂志* 2007, **17**(3):72,74. [DOI: 10.3969/j.issn.1005-1740.2007.03.032]

128. 张学峰, 魏倪, 靳慧斌, 王颖, 高维姝: **63例原发性肝癌临床分析**. *海南医学* 2007, **18**(11):46-48. [DOI: 10.3969/j.issn.1003-6350.2007.11.026]
129. Li Q, Li H, Qin Y, Wang PP, Hao X: **Comparison of surgical outcomes for small hepatocellular carcinoma in patients with hepatitis B versus hepatitis C: a Chinese experience**. *J Gastroenterol Hepatol* 2007, **22**(11):1936-1941. [PMID: 17914973 DOI: 10.1111/j.1440-1746.2006.04619.x]
130. Xuan SY, Xin YN, Chen H, Shi GJ, Guan HS, Li Y: **Significance of hepatitis B virus surface antigen, hepatitis C virus expression in hepatocellular carcinoma and pericarcinomatous tissues**. *World J Gastroenterol* 2007, **13**(12):1870-1874. [PMID: 17465484 DOI: 10.3748/wjg.v13.i12.1870]
131. 高蕾, 牛俊奇: **原发性肝癌 483例临床分析**. *临床荟萃* 2008, **23**(3):195-196. [DOI: 10.3969/j.issn.1004-583X.2008.03.019]
132. 杨世明, 张勇萍, 田榆, 潘晓莉: **肝癌患者肝炎病毒感染血清学标志检测的分析**. *临床血液学杂志 (输血与检验版)* 2008, **21**(5):521-523. [DOI: 10.3969/j.issn.1004-2806-B.2008.05.003]
133. 俞顺章, 穆丽娜, 蔡琳, 陈传炜, 卫国荣, 周学富, 丁保国, 常军, 曹巍, Hurwitz E, Sinsheimer J, Visscher B, 姜庆五, 张作风: **饮水等三大环境危险因素与肝癌——泰兴市肝癌病例对照研究**. *复旦学报 (医学版)* 2008, **35**(1):31-38. [DOI: 10.3969/j.issn.1672-8467.2008.01.007]
134. 成胜权, 王文亮, 晏伟, 李擒龙, 张志培: **肝细胞肝癌组织中 survivin 基因的表达及与 p53、Bcl-2 表达的关系**. *山西医科大学学报* 2009, **40**(06):498-503+573-574.
<https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXydHCwnFRnoOinM8HWvhE5YMUdFzA5XYja1VBmprUFRUFJVFE65B-mxo-LHWVbFAg136xWDqjA8shCBJuAnLUSYEToFXA6QF2vpEp1YxZN8qQw==&uniplatform=CHKD>
135. 宋希兰: **丙肝、乙肝病毒感染与肝癌的相关性研究**. *中国实用医药* 2009, **4**(26):85-86. [DOI: 10.3969/j.issn.1673-7555.2009.26.055]
136. 王宇, 崔巍, 刘沛: **174例原发性肝癌患者肝炎病毒感染情况及与 AFP 关系的研究**. *中国医师杂志* 2009, **11**(7):969-970. [DOI: 10.3760/cma.j.issn.1008-1372.2009.07.043]

137. 吴义娟: **HBV 与 HCV 相关原发性肝癌临床病理学特征及生存期比较**. 硕士. 河北医科大学; 2009. [DOI: 10.7666/d.y1636843]
138. 肖培: **应用 RT-PCR 法检测肝细胞癌的 HCV 表达**. *中国现代医生* 2009, **47(5)**:17-18. [DOI: 10.3969/j.issn.1673-9701.2009.05.009]
139. 许海生, 李琳: **丙型、乙型肝炎病毒感染与肝癌的相关性研究**. *中国实用医药* 2009, **4(7)**:71-72. [DOI: 10.3969/j.issn.1673-7555.2009.07.049]
140. Jia ZF, Su M, He M, Yin ZH, Wu W, Li XL, Guan P, Zhou BS: **Risk Analysis of Hepatocellular Carcinoma in Northeast China**. *Chinese Journal of Cancer Research* 2009, **21(04)**:304-309. [DOI: 10.1007/s11670-009-0304-4]
141. 邝家熙, 甘红文, 李榕娇, 胡记妹, 黄绰妤: **原发性肝癌与 HBV、HCV 感染关系**. *中国医药导报* 2010, **7(33)**:42-43. [DOI: 10.3969/j.issn.1673-7210.2010.33.022]
142. 李文伟, 马骢, 王珍光, 靳冰, 张海超, 冯洁: **肝癌与肝炎标志物及相关肿瘤标志物的相关性分析**. *实用癌症杂志* 2010, **25(5)**:495-496. [DOI: 10.3969/j.issn.1001-5930.2010.05.018]
143. 瞿丽, 王伟林, 尉建锋, 周武华, 郑树森: **线粒体融合基因 2 在肝细胞癌中的杂合性缺失及意义**. *浙江大学学报 (医学版)* 2010, **39(5)**:506-510. [DOI: 10.3785/j.issn.1008-9292.2010.05.011]
144. 苏相: **120 例原发性肝癌病因及临床特点分析**. 硕士. 河北医科大学; 2010. [DOI: 10.7666/d.y1779413]
145. 孙芳: **100 例原发性肝癌与 HBV、HCV 感染关系分析**. *中国医学创新* 2010, **7(34)**:132-133. [DOI: 10.3969/j.issn.1674-4985.2010.34.085]
146. 殷欣, 张博恒, 陈晓泓, 任正刚, 叶胜龙: **乙型肝炎及丙型肝炎病毒对肝细胞癌临床病理特征及预后的影响**. *中国临床医学* 2010, **17(2)**:195-198. [DOI: 10.3969/j.issn.1008-6358.2010.02.017]
147. 于晶, 孙跃先, 赵金满: **乙型肝炎病毒 DNA 复制状态与原发性肝癌的关系研究**. *中国全科医学* 2010, **13(36)**:4072-4074. [DOI: 10.3969/j.issn.1007-9572.2010.36.007]
148. 赵海琳, 闫惠平, 张海萍: **83 例原发性肝癌患者自身抗体检测结果分析**. *中国免疫学杂志* 2010, **26(12)**:1127-1129,1132. [DOI: 10.3969/j.issn.1000-484X.2010.12.016]

149. Hu L, Liu J, Chen X, Zhang Y, Liu L, Zhu J, Chen J, Shen H, Qiang F, Hu Z: **CTLA-4 gene polymorphism +49 A/G contributes to genetic susceptibility to two infection-related cancers-hepatocellular carcinoma and cervical cancer.** *Hum Immunol* 2010, **71**(9):888-891. [PMID: 20538028 DOI: 10.1016/j.humimm.2010.05.023]
150. 李琳琳, 李威, 谢风, 宋伶俐: 我院 294 例原发性肝癌患者与乙型病毒性肝炎、丙型病毒性肝炎的相关性分析. *中国实验诊断学* 2011, **15**(5):915-916. [DOI: 10.3969/j.issn.1007-4287.2011.05.059]
151. 刘利波, 冯军, 张娟, 李晓军: 乙型及丙型肝炎病毒感染与原发性肝癌的临床研究. *胃肠病学和肝病学杂志* 2011, **20**(4):338-340. [DOI: 10.3969/j.issn.1006-5709.2011.04.014]
152. 史跃杰: 579 例原发性肝癌患者乙肝病毒与丙肝病毒血清学标志物分析. *中国老年学杂志* 2011, **31**(15):2820-2821. [DOI: 10.3969/j.issn.1005-9202.2011.15.005]
153. Wang Q, Tan YX, Ren YB, Dong LW, Xie ZF, Tang L, Cao D, Zhang WP, Hu HP, Wang HY: **Zinc finger protein ZBTB20 expression is increased in hepatocellular carcinoma and associated with poor prognosis.** *BMC Cancer* 2011, **11**:271. [PMID: 21702992 DOI: 10.1186/1471-2407-11-271]
154. 崔连鸷, 于秀艳, 王博: 300 例原发性肝癌乙肝两对半及抗-HCV 检测结果分析. *中国实验诊断学* 2012, **16**(2):315-316. [DOI: 10.3969/j.issn.1007-4287.2012.02.044]
155. 付秀梅: 147 例原发性肝癌临床特征分析. *按摩与康复医学 (下旬刊)* 2012, **3**(12):491-492.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhJhbXlrZnl4LXgyMDEyMTI1NTUaCHI5enNtNjl0>
156. 胡莉华, 龙湘珍: 150 例原发性肝癌患者相关病因回顾性分析. *实用肝脏病杂志* 2012, **15**(06):582-583.
https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyenCB0GBemy1vJUXuXN Uhk7jh3477beh2g3jU4pqC79EGVwesJRydh7_s7mpUwMQS0o3tUVMLeotjZqjHbPV dgQVifhx0BFGAT8Yk6YvcnKxA==&uniplatform=CHKD
157. 李晓阳, 王金英, 李致远, 郑燕蓉: 肿瘤患者肝炎病毒感染分析. *中华医院感*

染学杂志 2012, 22(11):2342-2344.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2EhJ6aHI5Z3J4enoyMDEyMTEwNDcaCHI5enNtNjI0>

158. Liu H, Zhang J, Wang S, Pang Z, Wang Z, Zhou W, Wu M: **Screening of autoantibodies as potential biomarkers for hepatocellular carcinoma by using T7 phase display system.** *Cancer Epidemiol* 2012, **36**(1):82-88. [PMID: 22018955 DOI: 10.1016/j.canep.2011.04.001]

159. Liu L, Miao R, Yang H, Lu X, Zhao Y, Mao Y, Zhong S, Huang J, Sang X, Zhao H: **Prognostic factors after liver resection for hepatocellular carcinoma: a single-center experience from China.** *Am J Surg* 2012, **203**(6):741-750. [PMID: 22177551 DOI: 10.1016/j.amjsurg.2011.05.010]

160. Mao YM, Luo ZY, Li B, Hu TY: **Prospective study on the survival of HCC patients treated with transcatheter arterial lipiodol chemoembolization.** *Asian Pac J Cancer Prev* 2012, **13**(3):1039-1042. [PMID: 22631634 DOI: 10.7314/apjcp.2012.13.3.1039]

161. Qiao CX, Zhai XF, Ling CQ, Lang QB, Dong HJ, Liu Q, Li MD: **Health-related quality of life evaluated by tumor node metastasis staging system in patients with hepatocellular carcinoma.** *World J Gastroenterol* 2012, **18**(21):2689-2694. [PMID: 22690079 DOI: 10.3748/wjg.v18.i21.2689]

162. Wang CP, Wang H, Qu JH, Lu YY, Bai WL, Dong Z, Gao XD, Rong GH, Zeng Z, Yang YP: **Tumour seeding after percutaneous cryoablation for hepatocellular carcinoma.** *World J Gastroenterol* 2012, **18**(45):6587-6596. [PMID: 23236233 DOI: 10.3748/wjg.v18.i45.6587]

163. Yao L, Li FJ, Tang ZQ, Gao S, Wu QQ: **Smad4 expression in hepatocellular carcinoma differs by hepatitis status.** *Asian Pac J Cancer Prev* 2012, **13**(4):1297-1303. [PMID: 22799322 DOI: 10.7314/apjcp.2012.13.4.1297]

164. 陈利明, 王伟红: **186例原发性肝癌患者乙肝两对半及抗-HCV检测结果分析.** *海南医学* 2013, **24**(1):51-53. [DOI: 10.3969/j.issn.1003-6350.2013.01.0021]

165. 付广双, 袁静, 王立红, 崔健丽: **HCV、HBV感染与原发性肝癌的临床关系探讨.** *中国临床研究* 2013, **26**(11):1175-1176.

https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyc8I2L4fVWZW_T7Vtwfk_n4StimPuv98oXM8cuPMRiJCM5S4Jc8mDD9MBdwWDmeN2aHwMW-

[nfta1GFfjift2BwYmxpYvVScuXwH9RfxoVZF6yw==&uniplatform=CHKD](#)

166. 贺剑: **HBV、HCV 感染与肝细胞性肝癌术后早期复发转移的研究**. 硕士. 福建医科大学; 2013. [DOI: 10.7666/d.D438291]
167. 徐静, 刘传苗: **原发性肝癌 177 例临床分析**. *蚌埠医学院学报* 2013, **38**(3):275-277 [DOI: 10.3969/j.issn.1000-2200.2013.03.009]
168. 张留寿, 任新红, 肖美, 朱桂芳, 吴淑华, 韩志静, 钱霞: **乙型肝炎病毒和丙型肝炎与原发性肝癌的研究**. *中国农村卫生* 2013(z1):106,108.
<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg96Z25jd3MyMDEzejEwODgaCHI5enNtNjI0>
169. Chen Y, Zhang H, Liao W, Zhou J, He G, Xie X, Fei R, Qin L, Wei L, Chen H: **FOXP3 gene polymorphism is associated with hepatitis B-related hepatocellular carcinoma in China**. *J Exp Clin Cancer Res* 2013, **32**(1):39. [PMID: 23759077 DOI: 10.1186/1756-9966-32-39]
170. Liu C, Xiao GQ, Yan LN, Li B, Jiang L, Wen TF, Wang WT, Xu MQ, Yang JY: **Value of alpha-fetoprotein in association with clinicopathological features of hepatocellular carcinoma**. *World J Gastroenterol* 2013, **19**(11):1811-1819. [PMID: 23555170 DOI: 10.3748/wjg.v19.i11.1811]
171. Long J, Wang Y, Li M, Tong WM, Jia JD, Huang J: **Correlation of TP53 mutations with HCV positivity in hepatocarcinogenesis: identification of a novel TP53 microindel in hepatocellular carcinoma with HCV infection**. *Oncol Rep* 2013, **30**(1):119-124. [PMID: 23624687 DOI: 10.3892/or.2013.2430]
172. Yuan JM, Fan Y, Ognjanovic S, Wang R, Van Den Berg D, Govindarajan S, Yu MC: **Genetic polymorphisms of epidermal growth factor in relation to risk of hepatocellular carcinoma: two case-control studies**. *BMC Gastroenterol* 2013, **13**:32. [PMID: 23419149 DOI: 10.1186/1471-230X-13-32]
173. Zhang D, Cao L, Li Y, Lu H, Yang X, Xue P: **Expression of glioma-associated oncogene 2 (Gli 2) is correlated with poor prognosis in patients with hepatocellular carcinoma undergoing hepatectomy**. *World J Surg Oncol* 2013, **11**:25. [PMID: 23356443 DOI: 10.1186/1477-7819-11-25]
174. Zhao Y, Wang WJ, Guan S, Li HL, Xu RC, Wu JB, Liu JS, Li HP, Bai W, Yin ZX, Fan DM, Zhang ZL, Han GH: **Sorafenib combined with transarterial chemoembolization for the treatment of advanced hepatocellular carcinoma: a**

large-scale multicenter study of 222 patients. *Ann Oncol* 2013, **24**(7):1786-1792.

[PMID: 23508822 DOI: 10.1093/annonc/mdt072]

175. 储磊, 张霞军, 王国忠, 周文俊, 杜忠祥, 刘安定, 赵宏: **抗 Ku86 抗体在肝细胞癌早期诊断中的价值.** *中华肿瘤杂志* 2014, **36**(2):123-127. [DOI:

10.3760/cma.j.issn.0253-3766.2014.02.011]

176. 凌宇: **206 例原发性肝癌乙肝标志物及抗-HCV 检测结果临床分析.** *中国医师进修杂志* 2014, **37**(z1):73-75.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg95c2p4enoyMDE0ejEwMjcaCHI5enNtNjI0>

177. 刘洪涛: **176 例原发性肝癌患者的危险因素分析.** 硕士. 青海大学; 2014.

<https://d.wanfangdata.com.cn/thesis/ChhUaGVzaXNOZXdTmJAyNDA5MjAxNTE3MjUSB0Q1ODc1ODgaCGR5d3VwaGJx>

178. 赵雪珂, 程明亮, 张权, 陈莎莎, 谭家武, 王文志, 罗新华, 刘三都, 林世德: **贵州地区 762 例肝癌患者的危险因素分析.** *中华肝脏病杂志* 2014, **22**(1):33-37. [DOI:

10.3760/cma.j.issn.1007-3418.2014.01.008]

179. 周菊, 张艳梅, 兰青: **肿瘤患者中肝炎病毒感染情况分析.** *中外医学研究* 2014(35):73-74,75.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjMxMjI2Eg96d3I4eWoyMDE0MzUwMzcaCHI5enNtNjI0>

180. Cong N, Chen H, Bu WZ, Li JP, Liu N, Song JL: **miR-146a G>C polymorphisms and risk of hepatocellular carcinoma in a Chinese population.**

Tumour Biol 2014, **35**(6):5669-5673. [PMID: 24615520 DOI: 10.1007/s13277-014-1750-2]

181. Hao YX, Wang JP, Zhao LF: **Associations between three common MicroRNA polymorphisms and hepatocellular carcinoma risk in Chinese.** *Asian Pac J Cancer Prev* 2014, **14**(11):6601-6604. [PMID: 24377574 DOI:

10.7314/apjcp.2013.14.11.6601]

182. Kou JT, Fan H, Han D, Li L, Li P, Zhu J, Ma J, Zhang ZH, He Q: **Association between four common microRNA polymorphisms and the risk of hepatocellular carcinoma and HBV infection.** *Oncol Lett* 2014, **8**(3):1255-1260. [PMID: 25120701 DOI: 10.3892/ol.2014.2257]

183. Liu MF, Chen WQ, He YZ, Gu YL: **Role of miR-149C>T polymorphisms on**

- the risk of hepatocellular carcinoma in a Chinese population.** *Genet Mol Res* 2014, **13**(3):7184-7189. [PMID: 25222224 DOI: 10.4238/2014.September.5.4]
184. Shen P, Wang A, He M, Wang Q, Zheng S: **Increased circulating Lin(-/low) CD33(+) HLA-DR(-) myeloid-derived suppressor cells in hepatocellular carcinoma patients.** *Hepatol Res* 2014, **44**(6):639-650. [PMID: 23701406 DOI: 10.1111/hepr.12167]
185. Ying X, Zhao Y, Wang JL, Zhou X, Zhao J, He CC, Guo XJ, Jin GH, Wang LJ, Zhu Q, Han SX: **Serum anti-osteopontin autoantibody as a novel diagnostic and prognostic biomarker in patients with hepatocellular carcinoma.** *Oncol Rep* 2014, **32**(4):1550-1556. [PMID: 25109745 DOI: 10.3892/or.2014.3367]
186. Zhou B, Dong LP, Jing XY, Li JS, Yang SJ, Wang JP, Zhao LF: **Association between miR-146aG>C and miR-196a2C>T polymorphisms and the risk of hepatocellular carcinoma in a Chinese population.** *Tumour Biol* 2014, **35**(8):7775-7780. [PMID: 24816919 DOI: 10.1007/s13277-014-2020-z]
187. Zuo CH, Qiu XX, Ouyang YZ, Zhang D, Xiao H, Mo SC, Tan CQ, Tang M, Zhu HZ: **Mesohepatectomy for the treatment of patients with centrally located hepatocellular carcinoma.** *Mol Clin Oncol* 2014, **2**(5):833-838. [PMID: 25054054 DOI: 10.3892/mco.2014.309]
188. 李佳红, 付娜, 牛学敏, 焦冠楠, 南月敏: **573 例原发性肝癌病因及临床特点分析.** *实用肝脏病杂志* 2015, **18**(4):399-402. [DOI: 10.3969/j.issn.1672-5069.2015.04.017]
189. 鲁笑欣, 张春燕, 黄天壬, 邓伟, 利基林: **2004 ~ 2013 年广西 6201 例原发性肝癌患者乙肝和丙肝病毒感染情况分析.** *山东医药* 2015(14):35-37. [DOI: 10.3969/j.issn.1002-266X.2015.14.012]
190. 张景琦, 马锋, 张谓丰: **长非编码 RNA H19 的表达水平与原发性肝癌侵袭转移的关系.** *现代肿瘤医学* 2015, **23**(6):769-771. [DOI: 10.3969/j.issn.1672-4992.2015.06.12]
191. Chen M, Zheng T, Han S, Zhang L, Bai Y, Fang X, Ding SZ, Yang Y: **A preliminary study of plasma cyclase-associated protein 2 as a novel biomarker for early stage and alpha-fetoprotein negative hepatocellular carcinoma patients.** *Clin Res Hepatol Gastroenterol* 2015, **39**(2):215-221. [PMID: 25312778 DOI: 10.1016/j.clinre.2014.08.006]

192. Han XJ, Su HY, Shao HB, Xu K: **Prognostic factors of spontaneously ruptured hepatocellular carcinoma.** *World J Gastroenterol* 2015, **21**(24):7488-7494. [PMID: 26139994 DOI: 10.3748/wjg.v21.i24.7488]
193. Li D, Peng JJ, Tan Y, Chen T, Wei D, Du M, Zhang T: **Genetic variations in microRNA genes and susceptibility to hepatocellular carcinoma.** *Genet Mol Res* 2015, **14**(1):1926-1931. [PMID: 25867338 DOI: 10.4238/2015.March.20.2]
194. Li J, Cheng ZJ, Liu Y, Yan ZL, Wang K, Wu D, Wan XY, Xia Y, Lau WY, Wu MC, Shen F: **Serum thioredoxin is a diagnostic marker for hepatocellular carcinoma.** *Oncotarget* 2015, **6**(11):9551-9563. [PMID: 25871387 DOI: 10.18632/oncotarget.3314]
195. Li X, Li K, Wu Z: **Association of four common SNPs in microRNA polymorphisms with the risk of hepatocellular carcinoma.** *Int J Clin Exp Pathol* 2015, **8**(8):9560-9566. [PMID: 26464719 PMCID: PMC4583951]
196. Xiao L, Zhang RL, Zhang H, Tulahong A, Zhang YF, Wen H, Bao YX: **Comparison of the clinical characteristics and survival between Uyghur patients with hepatitis virus-related and non-B, non-C hepatocellular carcinoma in Xinjiang, China.** *Chin J Cancer Res* 2015, **27**(3):279-287. [PMID: 26157324 DOI: 10.3978/j.issn.1000-9604.2015.01.04]
197. Zhang X, You Q, Zhang X, Chen X: **SOCS3 Methylation Predicts a Poor Prognosis in HBV Infection-Related Hepatocellular Carcinoma.** *Int J Mol Sci* 2015, **16**(9):22662-22675. [PMID: 26393582 DOI: 10.3390/ijms160922662]
198. 蔡庆: **145 例肝细胞癌根治性切除术后复发相关因素的临床分析.** 硕士. 南方医科大学; 2016. [DOI: 10.7666/d.Y3116494]
199. 李昊: **876 例原发性肝癌临床特征回顾性分析.** 硕士. 吉林大学; 2016. https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyf6E2lLt1FR_0CSulXa6jul0DW7qQ_soDUuQHLY_znQdD89FkxV2YGz1rQj3zdCTkoGu6NwNzezmdE88FQ2lK9UDpDZdAFqjilcw_elyy-SQ=&uniplatform=CHKD
200. 孙浩, 季明芳, 张常华, 胡泽民, 冯谦谨, 余元龙: **多指标联合检测在肝癌筛查中的可行性研究.** *中华普通外科学文献(电子版)* 2016, **10**(04):294-297. [DOI: 10.3877/cma.j.issn.1674-0793.2016.04.01]
201. 王盼攀: **潜在转化生长因子结合蛋白 2 在肝细胞癌中的表达及其临床意义.** 硕士. 郑州大学; 2016.

<https://d.wanfangdata.com.cn/thesis/ChhUaGVzaXNOZXdTmJAyNDA5MjAxNTE3MjUSB0Q4Mzc4MjUaCGR5d3VwaGJx>

202. 王振佳: 原发性肝癌患者 214 例乙肝两对半及抗-HCV 检测结果探析. *标记免疫分析与临床* 2016, **23**(02):180-182. [DOI: 10.11748/bjmy.issn.1006-1703.2016.02.020]
203. 吴卫兵, 尹华发, 黄文琪, 闵峰, 张丽: 肝炎病毒感染与肝细胞性肝癌患者术后复发转移的相关性研究. *中华医院感染学杂志* 2016, **26**(04):744-746. [DOI: 10.11816/cn.ni.2016-152660]
204. 赵荣荣, 邓永东, 袁宏: 236 例原发性肝癌患者流行病学及临床特点分析. *临床肝胆病杂志* 2016, **32**(8):1538-1542. [DOI: 10.3969/j.issn.1001-5256.2016.08.021]
205. Feng X, Song P, Bie P, Jiang P, Ma K, Li X, Wang S, Wang Z, Tang W, Zheng S: **Des-gamma-Carboxyprothrombin Plasma Level in Diagnosis of Hepatocellular Carcinoma in a Chinese Population Undergoing Surgery.** *Med Sci Monit* 2016, **22**:1663-1672. [PMID: 27187589 DOI: 10.12659/msm.895483]
206. 范文轩: 柳州市中医院近 10 年原发性肝癌的回顾性分析. 硕士. 广西中医药大学; 2017.
<https://d.wanfangdata.com.cn/thesis/ChJUaGVzaXNOZXdTmJAyNDAXMDkSCUQwMTM3Mzc2MhoIcjl6c202OXQ%3D>
207. 管晨滔, 赵宏, 李新庆, 曲宸绪, 蔡建强, 魏文强, 乔友林: 肝细胞癌患者的基本特征及其生存分析. *中华肿瘤杂志* 2017, **39**(3):231-235. [DOI: 10.3760/cma.j.issn.0253-3766.2017.03.015]
208. 栗立红: 近年肝癌患者临床特征及预后影响因素研究. 硕士. 山西医科大学; 2017.
<https://d.wanfangdata.com.cn/thesis/ChJUaGVzaXNOZXdTmJAyNDAXMDkSCUQwMTIyNzY2NxoIcjl6c202OXQ%3D>
209. 叶健翔, 温宝欣, 胡雅, 刘勇波: 原发性肝癌乙肝两对半及抗-HCV 检测结果探析. *现代诊断与治疗* 2017, **28**(11):2126-2128. [DOI: 10.3969/j.issn.1001-8174.2017.11.105]
210. 王悦超: 肝内胆管细胞癌与肝细胞癌临床特征的对比分析. 硕士. 2017.
<https://kns.cnki.net/kcms2/article/abstract?v=acR2UJ02YhSDHxHZFmi1yQLOhrOkg>

mV91kBpWS5WUHxOfpG6cbCDsUhVOahs_gqElswYSTvZswShJQ5S9tj9ICAoLA9
H3lXT14lkv2jsjSzyq6czKbrNoVTcWpe-

JC8NjPOz3nofC3rZXS8VqZdqHefklGeN0WTgthaZn35innUDxOYYY0KTT75_UybF
O-728H0szbGRetfc=&uniplatform=NZKPT&language=CHS

211. Liu CJ, Ma XW, Zhang XJ, Shen SQ: **pri-miR-34b/c rs4938723 polymorphism is associated with hepatocellular carcinoma risk: a case-control study in a Chinese population.** *Int J Mol Epidemiol Genet* 2017, **8**(1):1-7. [PMID: 28337312]

<https://www.ncbi.nlm.nih.gov/pubmed/28337312>

212. Liu XY, Fan YC, Gao S, Zhao J, Chen LY, Li F, Wang K: **Methylation of SOX1 and VIM promoters in serum as potential biomarkers for hepatocellular carcinoma.** *Neoplasma* 2017, **64**(5):745-753. [PMID: 28592127 DOI:

10.4149/neo_2017_513]

213. Wang K, Eguchi S, Hidaka M, Jin T, Soyama A, Kuroki T, Huang M, Wu L, Zou S, Shao J: **Comparison of the outcomes of hepatocellular carcinoma after hepatectomy between two regional medical centers in China and Japan.** *Asian J Surg* 2017, **40**(5):380-388. [PMID: 27236717 DOI: 10.1016/j.asjsur.2016.03.002]

214. Wang M, Wang Y, Feng X, Wang R, Wang Y, Zeng H, Qi J, Zhao H, Li N, Cai J, Qu C: **Contribution of hepatitis B virus and hepatitis C virus to liver cancer in China north areas: Experience of the Chinese National Cancer Center.** *Int J Infect Dis* 2017, **65**:15-21. [PMID: 28935244 DOI: 10.1016/j.ijid.2017.09.003]

215. 德庆旺姆, 王正, 泽永革, 赵玉兰, 熊伟: **西藏地区肝癌的发病情况及分析.** *西藏科技* 2018(10):39-43.

[https://kns.cnki.net/kcms2/article/abstract?v=acR2UJ02YhQNIefIM6zqU5o0DSS1fidN2YP_Zujgi43ghu4uORTou800yaeHm2atd3WuMOrZ23-EAf3iPdW2yMWZ-](https://kns.cnki.net/kcms2/article/abstract?v=acR2UJ02YhQNIefIM6zqU5o0DSS1fidN2YP_Zujgi43ghu4uORTou800yaeHm2atd3WuMOrZ23-EAf3iPdW2yMWZ-Cte2DxsWmCljGypK8vzyQP-)

[i6JJzjnzd7tfqjmbrMHhRRSWyZF5J6IhZ7j6S5xzqwXrLPK1mYv-5IKjiiieIN-](https://kns.cnki.net/kcms2/article/abstract?v=acR2UJ02YhQNIefIM6zqU5o0DSS1fidN2YP_Zujgi43ghu4uORTou800yaeHm2atd3WuMOrZ23-EAf3iPdW2yMWZ-Cte2DxsWmCljGypK8vzyQP-i6JJzjnzd7tfqjmbrMHhRRSWyZF5J6IhZ7j6S5xzqwXrLPK1mYv-5IKjiiieIN-Zj_vc7NZVzWuRxCt75Gp2-8C1WkaA=&uniplatform=NZKPT&language=CHS)

[Zj_vc7NZVzWuRxCt75Gp2-8C1WkaA=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=acR2UJ02YhQNIefIM6zqU5o0DSS1fidN2YP_Zujgi43ghu4uORTou800yaeHm2atd3WuMOrZ23-EAf3iPdW2yMWZ-Cte2DxsWmCljGypK8vzyQP-i6JJzjnzd7tfqjmbrMHhRRSWyZF5J6IhZ7j6S5xzqwXrLPK1mYv-5IKjiiieIN-Zj_vc7NZVzWuRxCt75Gp2-8C1WkaA=&uniplatform=NZKPT&language=CHS)

216. 晋墨: **原发性肝癌病理类型分布和预后影响因素分析.** 硕士. 西安医学院; 2018. [DOI: 10.7666/d.D01443113]

217. 隋洪婷: **延边地区原发性肝癌的临床特征及分子机制研究.** 硕士. 延边大学; 2018. [DOI: 10.7666/d.Y3422428]

218. 邹浩: **射频消融治疗肝细胞癌的预后暨与肝切除术的倾向性评分匹配研**

究. 博士. 青岛大学; 2018.

<https://d.wanfangdata.com.cn/thesis/ChhUaGVzaXNOZXdTmJAyNDA5MjAxNTE3MjUjUSCUQwMTU5Mjg0NRoIZHI3dXB0YnE%3D>

219. Huang XW, Liao B, Huang Y, Liang JY, Shan QY, Shen SL, Xie XY, Lu MD, Chen LD, Wang W: **Non-Invasive Diagnostic Criteria for Hepatocellular Carcinoma in Hepatitis B Virus-Endemic Areas: Is Cirrhosis Indispensable?** *Dig Dis* 2018, **36**(3):228-235. [PMID: 29353268 DOI: 10.1159/000486196]

220. Li RD, Tang YH, Wang HL, Yang D, Sun LJ, Li W: **The SMYD3 VNTR 3/3 polymorphism confers an increased risk and poor prognosis of hepatocellular carcinoma in a Chinese population.** *Pathol Res Pract* 2018, **214**(5):625-630. [PMID: 29691085 DOI: 10.1016/j.prp.2018.04.005]

221. 何雅婧, 张植明, 何伟猛, 侯金林: **1302例单中心观察性肝细胞癌真实世界队列的流行病学特征与预后.** *临床肝胆病杂志* 2019, **35**(5):1002-1007. [DOI: 10.3969/j.issn.1001-5256.2019.05.014]

222. 林舒: **554例原发性肝细胞癌规范诊疗现状分析及生存期比较.** 硕士. 海南医学院; 2019.

<https://kns.cnki.net/kcms2/article/abstract?v=m22VhQxdXyckTwjEs2t7CUinUnjHRHlTC9zTU6raqe2OtWSM04um9bIeBK9HVWh9ZFiHuwTu5H2LZnDpR2hbHnHjXkCtoCfLAXdgz3St3X9fl6QSwOCSPQ==&uniplatform=CHKD>

223. 浦沛广, 邹喜明: **原发性肝癌 876例综合归纳分析.** *世界最新医学信息文摘 (连续型电子期刊)* 2019, **19**(15):77,79. [DOI: 10.19613/j.cnki.1671-3141.2019.15.047]

224. Hua S, Li M, Zhao Q, Wang J, Zhou Y, Liu J, Fang H, Jiang M, Shen L: **Mitochondrial DNA Haplogroup N9a Negatively Correlates with Incidence of Hepatocellular Carcinoma in Northern China.** *Mol Ther Nucleic Acids* 2019, **18**:332-340. [PMID: 31629170 DOI: 10.1016/j.omtn.2019.09.001]

225. 李建基: **376例桂西地区壮族原发性肝癌临床特征及生存预后分析.** 硕士. 2020.

https://kns.cnki.net/kcms2/article/abstract?v=acR2UJ02YhQpaRUs4OxoWtsDS0-wBjt1oeKR0VVzPtVxat0Va4SuulN3117vbPEJMS3fJIqw5DaWFe6ekNjRxfnTsW4n_fvoyYBAIx-Q5uZHFxpQjI4O54sVAOoOWdJG17c_xuzzHCoBxNoNbAaY3a2Wjx_jMAAi0Pfv3

[EQvhpGs3a16aC01HzYSAkoAh8qj&uniplatform=NZKPT&language=CHS](https://d.wanfangdata.com.cn/thesis/ChJUaGVzaXNOZXdTmJAyNDxMDkSCFkzNzQ1Mzk3GghyOXpzbTY5dA%3D%3D)

226. 陈丽: 非酒精性脂肪性肝病与乙型肝炎病毒既往感染者肝癌发生关系的研究. 硕士. 南方医科大学; 2020.

<https://d.wanfangdata.com.cn/thesis/ChJUaGVzaXNOZXdTmJAyNDxMDkSCFkzNzQ1Mzk3GghyOXpzbTY5dA%3D%3D>

227. 杨倩倩: 不同原因的肝细胞癌患者临床特征分析. 硕士. 吉林大学; 2020.

<https://d.wanfangdata.com.cn/thesis/ChJUaGVzaXNOZXdTmJAyNDxMDkSCUQwMTk5OTQ3MRoIcjl6c202OXQ%3D>

228. 黄玉敏, 钱小斌, 赵柳红, 焦莉: 习水县原发性肝癌发病危险因素的调查研究. 健康必读 2021(28):12.

<https://d.wanfangdata.com.cn/periodical/ChlQZXJpb2RpY2FsQ0hJTmV3UzIwMjQwNzA0EhpRS0JKQkQyMDIxMjAyMjAyMjUwMDAyMzc2NhoIZHl3dXB0YnE%3D>

229. 王蓉: 522 例肝细胞癌临床分析. 硕士. 山西医科大学; 2021.

<https://d.wanfangdata.com.cn/thesis/ChhUaGVzaXNOZXdTmJAyNDA5MjAxNTE3MjUwMDAyMzc2NhoIZHl3dXB0YnE%3D>

230. Gao C, Zhang H, Zhang WS, Fang L: **Expression and Significance of Insulin Receptor Substrate 1 in Human Hepatocellular Carcinoma**. *Dis Markers* 2020, **2020**:7174062. [PMID: 32695243 DOI: 10.1155/2020/7174062]

231. Kong J, Jiang X, Zhang Y, Wang W, Li Y, Shen X, Guo J, Sun H, Chen D, Chen Y, Xu L: **Clinical management of vascular lake during transarterial chemoembolization with CalliSpheres drug-eluting beads (DEBs) for the treatment of hepatocellular carcinoma**. *Transl Cancer Res* 2020, **9**(4):2895-2903. [PMID: 35117646 DOI: 10.21037/tcr.2020.03.65]

232. Diao YK, Liu JW, Wu H, Wang MD, Fan XP, Chen TH, Wang JY, Zhou YH, Gu WM, Wang H, Li J, Liang YJ, Chen ZY, Lau WY, Liang L, Li C, Zhang CW, Shen F, Huang DS, Yang T: **Long-term oncologic outcomes of liver resection for hepatocellular carcinoma in adolescents and young adults: A multicenter study from a hepatitis B virus-endemic area**. *Am J Surg* 2021, **222**(4):751-758. [PMID: 33741185 DOI: 10.1016/j.amjsurg.2021.03.009]

233. Lin J, Zhang H, Yu H, Bi X, Zhang W, Yin J, Zhao P, Liang X, Qu C, Wang M, Hu M, Liu K, Wang Y, Zhou Z, Wang J, Tan X, Liu W, Shao Z, Cai J, Tang W, Cao G: **Epidemiological Characteristics of Primary Liver Cancer in Mainland China**

- From 2003 to 2020: A Representative Multicenter Study.** *Front Oncol* 2022, **12**:906778. [PMID: 35800051 PMCID: PMC9253580 DOI: 10.3389/fonc.2022.906778]
234. Xu W, Li B, Yang Z, Li J, Liu F, Liu Y: **Rethinking Liver Fibrosis Staging in Patients with Hepatocellular Carcinoma: New Insights from a Large Two-Center Cohort Study.** *J Hepatocell Carcinoma* 2022, **9**:751-781. [PMID: 35800051 DOI: 10.3389/fonc.2022.906778]
235. Zhan S, Yang P, Zhou S, Xu Y, Xu R, Liang G, Zhang C, Chen X, Yang L, Jin F, Wang Y: **Serum mitochondrial tsRNA serves as a novel biomarker for hepatocarcinoma diagnosis.** *Front Med* 2022, **16**(2):216-226. [PMID: 35416630 DOI: 10.1007/s11684-022-0920-7]
236. 黄剑洁: 原发性肝癌合并门静脉癌栓的临床特征分析. 硕士. 吉林大学; 2023.
<https://d.wanfangdata.com.cn/thesis/ChhUaGVzaXNOZXdTmJAYnDA5MjAxNTE3MjUjUSCUQwMzA3ODcyNBolZHI3dXBoYnE%3D>
237. Chen Y, Chen J, Yang C, Wu Y, Wei H, Duan T, Zhang Z, Long L, Jiang H, Song B: **Preoperative prediction of cholangiocyte phenotype hepatocellular carcinoma on contrast-enhanced MRI and the prognostic implication after hepatectomy.** *Insights Imaging* 2023, **14**(1):190. [PMID: 37962669 DOI: 10.1186/s13244-023-01539-x]
238. Li T, Guo J, Liu Y, Du Z, Guo Z, Fan Y, Cheng L, Zhang Y, Gao X, Zhao Y, He X, Wu W, Gao N, Wu Y, Li J, Zhang Y, Kang W, Cai Z, Wang W, Li X, Zan Y, Nguyen MH, Ji F: **Effectiveness and tolerability of camrelizumab combined with molecular targeted therapy for patients with unresectable or advanced HCC.** *Cancer Immunol Immunother* 2023, **72**(7):2137-2149. [PMID: 36840762 DOI: 10.1007/s00262-023-03404-8]
239. Wang L, Feng B, Li D, Liang M, Wang S, Wang S, Ma X, Zhao X: **Risk stratification of solitary hepatocellular carcinoma \leq 5 cm without microvascular invasion: prognostic values of MR imaging features based on LI-RADS and clinical parameters.** *Eur Radiol* 2023, **33**(5):3592-3603. [PMID: 36884087 DOI: 10.1007/s00330-023-09484-5]
240. Yuan GS, Zhang LL, Chen ZT, Zhang CJ, Tian SH, Gong MX, Wang P, Guo L, Shao N, Liu B: **Comparison of ethanol-soaked gelatin sponge and microspheres for**

hepatic arterioportal fistulas embolization in hepatic cellular carcinoma. *World J*

Gastrointest Oncol 2023, **15**(9):1595-1604. [PMID: 37746643 DOI:

10.4251/wjgo.v15.i9.1595]