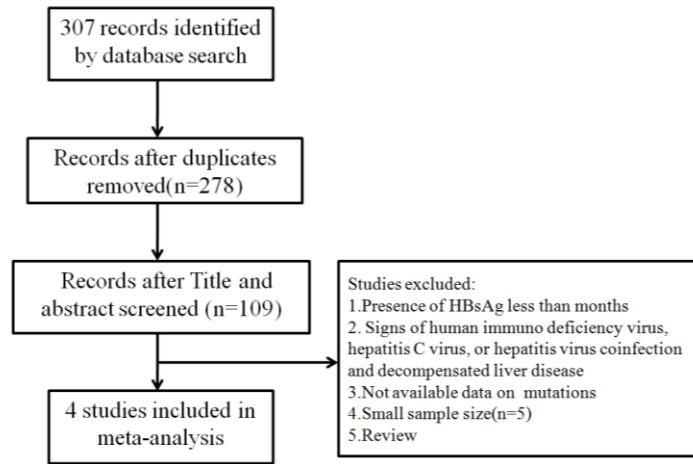


Appendix 1: Flowchart of literature search and study selection



Appendix 2: Characteristics and quality assessment of the included studies

Number	Author	Year	Country	Detection Method	Sample size Cases/controls	Sample size(clone)	Male gender, n (%)		Mean age		Control type	preS Deletion	
							Cases	Controls	Cases	Controls		Cases	Controls
1	Jang JS	2009	Korea		26/93		HBsAg only(CHB+HCC)	11	19
2	Wang YM	1999	Singapore		10/5	122/106	7(70%)	4(80%)	49(22-72)	36(24-50)	HBsAg only(CHB)	17(clone)	1(clone)
3	Chen Y	2011	Chinese	Sequencing	35/70		21(60%)	42(60%)	42 ± 15	42 ± 15	HBsAg only(CHB)	4	6
4	Huang XY	2010	Chinese	Sequencing	28/28	10/6	23(82.14%)	23(82.14%)	45.6±13.3	42.2±14.9	HBsAg only(CHB)	7	1

appendix 3: Funnel plots analysis to detect publication bias of pre-S deletion mutation. Each point represents an independent study for the indicated association

