***Pool-analysis***

**Search strategy**

Eligible literatures updated until September of 2019 were collected using “(PD-1 or programmed cell death-1 or nivolumab or pembrolizumab or PD-L1 or programmed death ligand-1 or atezolizumab) AND (HCC or hepatocellular carcinoma or liver cancer) AND Clinical trial as the keywords. The reference list was also checked for relevant articles.

**Selection criteria**

**Inclusion criteria:**

* Randomized controlled trials;
* Hepatocellular carcinoma was diagnosed by pathological examination;
* The study should contain subgroup of HBV infected patients;
* The rates of objective response or disease control of HBV+ HCC could be obtained from the literature;
* If there were duplicate articles, only the most complete or latest one could be included.

**Exclusion Criteria:**

* Studies without sufficient data for estimating odds ratio (OR) and 95% confidence interval (CI);
* Nonhuman research
* Other tumor types