

Supplementary files

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Supplementary 1 Search strategy

PubMed

- #1. "Cytomegalovirus"[Mesh] OR "Cytomegalovirus Infections"[Mesh] OR Cytomegalovirus*[tw] OR cytomegalus virus*[tw] OR cytomegalusvirus*[tw] OR "Salivary Gland Virus*[tw] OR "Human Herpesvirus 5"[tw] OR "HHV 5"[tw] OR Cytomegalic[tw] OR CMV[tw] OR HCMV[tw] OR Cytomegaly[tw] OR cytomegalia[tw] OR cytomegalo[tw] OR cytomegalus[tw] OR cytomegalusvirus*[tw] OR "human herpes virus 5"[tw] OR cytomegaloinfection*[tw] OR cytomegaloviral[tw]
- #2. "Stem Cell Transplantation"[Mesh] OR "Bone Marrow Transplantation"[Mesh] OR "Bone Marrow Grafting"[tw] OR "Bone Marrow Cell Transplant*[tw] OR "Bone Marrow Transplant*[tw] OR "stem cell Transplant*[tw] OR "hematopoietic cell Transplant*[tw] OR "stem cell Grafting"[tw] OR "Haploidentical Transplant*[tw] OR "unrelated donor Transplant*[tw] OR "Cord Blood Stem Cell Transplantation"[Mesh] OR "Cord Blood Transplant*[tw] OR "Umbilical cord blood Transplant*[tw] OR "Umbilical blood Transplant*[tw] OR "Semicongruent Transplant*[tw] OR Halfmatched[tw] OR "Half matched"[tw] OR "allo-HSCT"[tw] OR Peripheral blood Transplant*[tw] OR "matched sibling donor"[tw] OR "matched unrelated donor"[tw] OR "haplo transplantation*[tw] OR "haploidentical transplantation*[tw] OR "matched related donor"[tw]
- #3. #1 AND #2
- #4. "China"[Mesh] OR China OR Chinese OR Taiwan OR Taiwanese OR "Hong kong" OR Hongkong OR Macau OR Macao OR Beijing OR Shanghai OR Tianjin OR Chongqing OR "Inner Mongolia" OR Tibet OR Guangxi OR Sinkiang OR Ningxia OR Xinjiang OR Hebei OR Shanxi OR Liaoning OR Jilin OR Heilongjiang OR Jiangsu OR Zhejiang OR Anhui OR Fujian OR Jiangxi OR Shandong OR Henan OR Hubei OR Hunan OR Guangdong OR Hainan OR Sichuan OR Guizhou OR Yunnan OR Shaanxi OR Gansu OR Qinghai
- #5. "Review Literature as Topic"[Mesh] OR "Review" [Publication Type] OR Review[ti] OR "Case Reports as Topic"[Mesh] OR "Case Reports" [Publication Type] OR "case report"[ti] OR "a case"[ti] OR ("Animals"[Mesh] NOT ("Humans"[Mesh] AND "Animals"[Mesh]))
- #6. "Meta-Analysis"[pt] OR "Meta-Analysis as Topic"[Mesh] OR "Systematic Review" [pt] OR "Systematic Reviews as Topic"[Mesh] OR "systematic"[Filter] OR "Systematic Review*[tiab] OR "Meta-Analysis"[tiab] OR Metaanalys*[tiab]
- #7. (#3 AND #4) NOT (#5 NOT #6)

EMBASE

- #1. 'Cytomegalovirus'/exp OR 'cytomegalovirus infection'/exp OR (Cytomegalovirus* OR "cytomegalus virus*" OR cytomegalusvirus* OR "Salivary Gland Virus*" OR "Human Herpesvirus 5" OR "HHV 5" OR Cytomegalic OR CMV OR HCMV OR Cytomegaly OR cytomegalia OR cytomegalo OR cytomegalus OR cytomegalusvirus* OR "human herpes virus 5" OR cytomegaloinfection* OR cytomegaloviral):ab,ti,kw
- #2. 'stem cell transplantation'/exp OR 'bone marrow transplantation'/exp OR (((("Stem Cell*" OR "Bone Marrow" OR "hematopoietic cell*" OR Haploidentical OR "unrelated donor*" OR "Cord Blood" OR "Umbilical blood" OR Semicongruent OR Halfmatched OR "Half matched" OR "allo-HSCT" OR "Peripheral blood" OR "matched sibling donor*" OR haplo OR haploidentical OR "related donor*") NEAR/3 (Grafting* OR Transplant*)):ab,ti,kw
- #3. #1 AND #2

- #4. 'China'/exp OR (China OR Chinese OR Taiwan OR "Hong kong" OR Hongkong OR Macau OR Macao OR Beijing OR Shanghai OR Tianjin OR Chongqing OR "Inner Mongolia" OR Tibet OR Guangxi OR Sinkiang OR Ningxia OR Xinjiang OR Hebei OR Shanxi OR Liaoning OR Jilin OR Heilongjiang OR Jiangsu OR Zhejiang OR Anhui OR Fujian OR Jiangxi OR Shandong OR Henan OR Hubei OR Hunan OR Guangdong OR Hainan OR Sichuan OR Guizhou OR Yunnan OR Shaanxi OR Gansu OR Qinghai):ti,ab,ad,ff
- #5. 'review'/exp OR 'Case Report'/exp OR 'conference abstract'/it OR 'editorial'/it OR 'letter'/it OR 'review'/it OR (('nonhuman'/exp OR 'animal'/exp) NOT 'human'/exp) OR (Review OR "case report" OR "a case"):ti
- #6. 'meta analysis'/exp OR 'meta analysis (topic)'/exp OR 'systematic review'/exp OR 'systematic review (topic)'/exp OR (Systemat* NEAR/3 Review* OR 'Meta Analysis*' OR Metaanalys*):ab,ti,kw
- #7. (#3 AND #4) NOT (#5 NOT #6)

Web of Science

- #1. TS=(Cytomegalovirus* OR "cytomegalus virus*" OR cytomegalusvirus* OR "Salivary Gland Virus*" OR "Human Herpesvirus 5" OR "HHV 5" OR Cytomegalic OR CMV OR HCMV OR Cytomegaly OR cytomegalia OR cytomegalo OR cytomegalus OR cytomegalusvirus* OR "human herpes virus 5" OR cytomegaloinfection* OR cytomegaloviral)
- #2. TS=((("Stem Cell*" OR "Bone Marrow" OR "hematopoietic cell*" OR Haploidentical OR "unrelated donor*" OR "Cord Blood" OR "Umbilical blood" OR Semicongruent OR Halfmatched OR "Half matched" OR "allo-HSCT" OR "Peripheral blood" OR "matched sibling donor*" OR haplo OR haploidentical OR "related donor*") NEAR/3 (Grafting* OR Transplant*)))
- #3. #1 AND #2 6708
- #4. CU=China OR TS=(China OR Chinese OR Taiwan OR "Hong kong" OR Hongkong OR Macau OR Macao OR Beijing OR Shanghai OR Tianjin OR Chongqing OR "Inner Mongolia" OR Tibet OR Guangxi OR Sinkiang OR Ningxia OR Xinjiang OR Hebei OR Shanxi OR Liaoning OR Jilin OR Heilongjiang OR Jiangsu OR Zhejiang OR Anhui OR Fujian OR Jiangxi OR Shandong OR Henan OR Hubei OR Hunan OR Guangdong OR Hainan OR Sichuan OR Guizhou OR Yunnan OR Shaanxi OR Gansu OR Qinghai) OR AD=(China OR Chinese OR Taiwan OR "Hong kong" OR Hongkong OR Macau OR Macao OR Beijing OR Shanghai OR Tianjin OR Chongqing OR "Inner Mongolia" OR Tibet OR Guangxi OR Sinkiang OR Ningxia OR Xinjiang OR Hebei OR Shanxi OR Liaoning OR Jilin OR Heilongjiang OR Jiangsu OR Zhejiang OR Anhui OR Fujian OR Jiangxi OR Shandong OR Henan OR Hubei OR Hunan OR Guangdong OR Hainan OR Sichuan OR Guizhou OR Yunnan OR Shaanxi OR Gansu OR Qinghai)
- #5. TI=(Review OR "case report" OR "a case" OR animal* OR rat OR rats OR mouse OR mice OR rabbit* OR dog* OR cat* OR pig* OR swine* OR monkey* OR sheep* OR goat*)
- #6. TS=("Meta-Analysis" OR "Meta Analysis" OR "Systematic Review" OR "Systematic Review*" OR "Meta-Analysis" OR "Meta-Analy*" OR "Metaanaly*" OR ("systematic*" NEAR/4 "Review*"))
- #7. (#3 AND #4) NOT (#5 NOT #6)

Cochrane Library

- #1 MeSH descriptor: [Cytomegalovirus] explode all trees
- #2 MeSH descriptor: [Cytomegalovirus Infections] explode all trees
- #3 (Cytomegalovirus* OR "cytomegalus virus*" OR cytomegalusvirus* OR "Salivary Gland Virus*" OR "Human Herpesvirus 5" OR "HHV 5" OR Cytomegalic OR CMV OR HCMV OR Cytomegaly OR cytomegalia OR cytomegalo OR cytomegalus OR cytomegalusvirus* OR "human herpes virus 5" OR cytomegaloinfection* OR cytomegaloviral):ti,ab,kw
- #4 #1 OR #2 OR #3
- #5 MeSH descriptor: [Stem Cell Transplantation] explode all trees 2872
- #6 MeSH descriptor: [Bone Marrow Transplantation] explode all trees
- #7 (((("Stem Cell*" OR "Bone Marrow" OR "hematopoietic cell*" OR Haploidentical OR "unrelated donor*" OR "Cord Blood" OR "Umbilical blood" OR Semicongruent OR Halfmatched OR "Half matched" OR "allo-HSCT" OR "Peripheral blood" OR "matched sibling donor*" OR haplo OR haploidentical OR "related donor*") NEAR/3 (Grafting* OR Transplant*))) :ti,ab,kw
- #8 #5 OR #6 OR #7
- #9 MeSH descriptor: [China] explode all trees
- #10 China OR Chinese OR Taiwan OR Taiwanese OR "Hong kong" OR Hongkong OR Macau OR Macao OR Beijing OR Shanghai OR Tianjin OR Chongqing OR "Inner Mongolia" OR Tibet OR Guangxi OR Sinkiang OR Ningxia OR Xinjiang OR Hebei OR Shanxi OR Liaoning OR Jilin OR Heilongjiang OR Jiangsu OR Zhejiang OR Anhui OR Fujian OR Jiangxi OR Shandong OR Henan OR Hubei OR Hunan OR Guangdong OR Hainan OR Sichuan OR Guizhou OR Yunnan OR Shaanxi OR Gansu OR Qinghai
- #11 #9 OR #10 124780
- #12 #4 AND #8 AND #11

CNKI (期刊、学位、会议, 中英文扩展: 是, 中文)

((SU%=巨细胞病毒+人巨细胞病毒+巨细胞包涵体病+CMV+HCMV OR TKA=巨细胞病毒+人巨细胞病毒+巨细胞包涵体病+CMV+HCMV) AND (SU%=移植*(干细胞+骨髓+血液+半相合+脐带血+脐血+外周血) OR TKA=移植*(干细胞+骨髓+血液+半相合+脐带血+脐血+外周血))) NOT TKA=鼠+大鼠+小鼠+雌鼠+猴+猪+羊+兔

万方

(主题:("巨细胞病毒" OR "巨细胞包涵体病" OR "CMV" OR "HCMV") and 主题:("移植") and 主题:(干细胞 OR 骨髓 OR 血液 OR 半相合 OR 脐带血 OR 脐血 OR 外周血)) not 题名:(鼠 OR 猴 OR 猪 OR 羊 OR 兔) 717

(主题:("巨细胞病毒" OR "巨细胞包涵体病" OR "CMV" OR "HCMV") and 主题:("移植") and 主题:("干细胞" OR "骨髓" OR "血液" OR "半相合" OR "脐带血" OR "脐血" OR "外周血")) not 题名:(鼠 OR 猴 OR 猪 OR 羊 OR 兔)

CBM

(("巨细胞病毒"[常用字段:智能] OR "人巨细胞病毒"[常用字段:智能] OR "巨细胞包涵体病"[常用字段:智能] OR "CMV"[常用字段:智能] OR "HCMV"[常用字段:智能]) AND "移植"[常用字段:智能] AND ("干细胞"[常用字段:智能] OR "骨髓"[常用字段:智能] OR "血液"[常用字段:智能] OR "半相合"[常用字段:智能] OR "脐带血"[常用字段:智能] OR "脐血"[常用字段:智能] OR "外周血"[常用字段:智能])) NOT ("鼠"[中文标题:智能] OR "大鼠"[中文标题:智能] OR "小鼠"[中文标题:智能] OR "雌鼠"[中文标题:智能] OR "猴"[中文标题:智能] OR "猪"[中文标题:智能] OR "羊"[中文标题:智能] OR "兔"[中文标题:智能])

Supplementary 2 Quality assessment results of included studies

See EXCEL supplementary 2 table S1-table S4

Supplementary 3 Forest plots for meta-analyses results

Incidence of breakthrough CMV infection

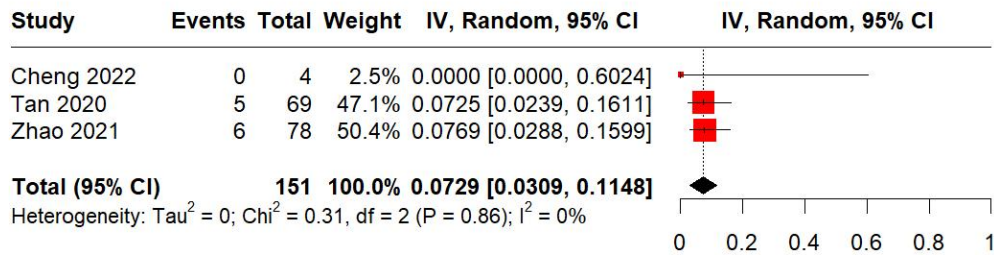


Figure S1 Forest plot of incidence of breakthrough cytomegalovirus (CMV) infection after allogeneic hematopoietic stem cell transplantation

Incidence of CMV infection based on various types of transplantation

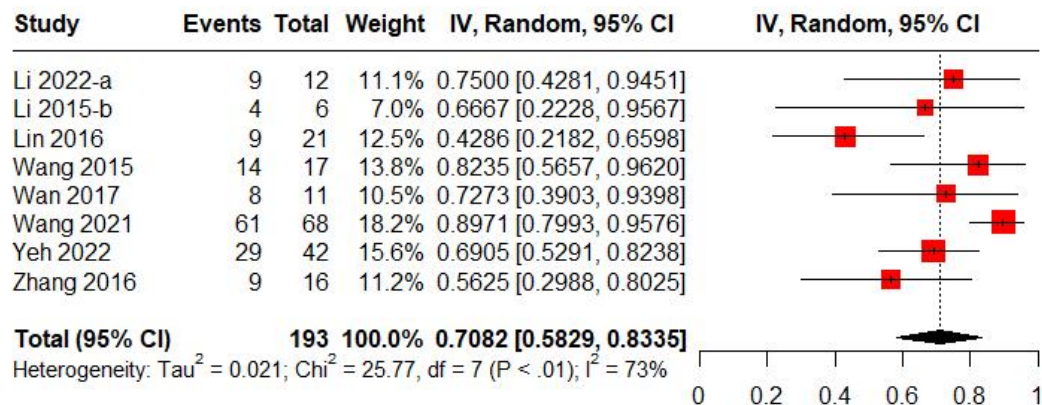


Figure S2 Forest plot of incidence of CMV infection after unrelated matched allogeneic hematopoietic stem cell transplantation

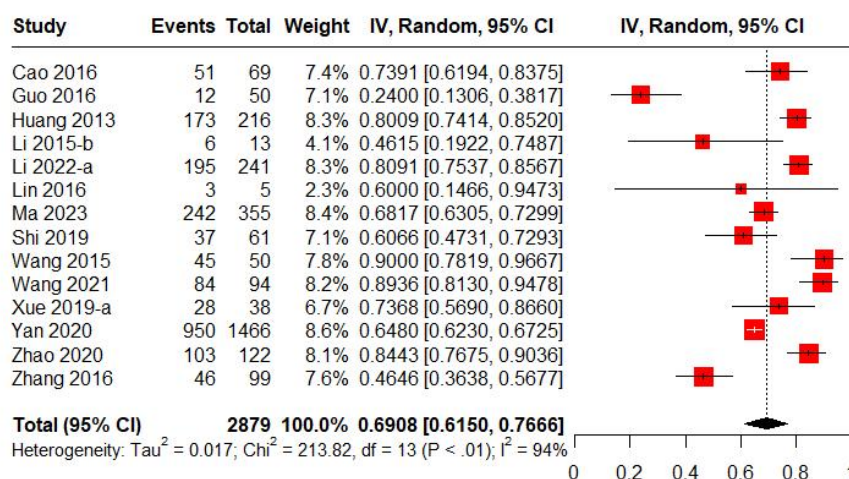


Figure S3 Forest plot of incidence of CMV infection after haploidentical allogeneic hematopoietic stem cell transplantation

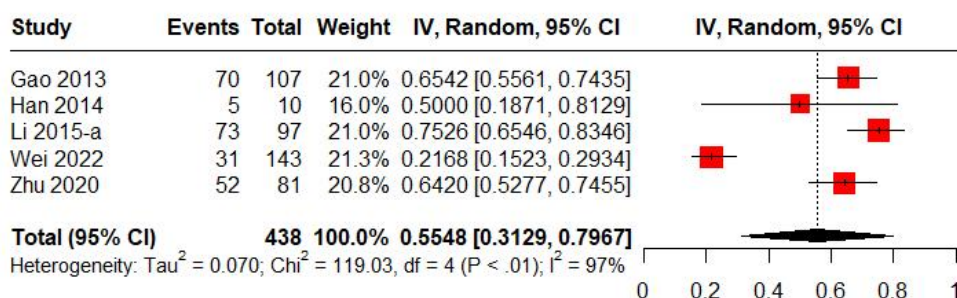


Figure S4 Forest plot of incidence of CMV infection after cord blood allogeneic hematopoietic stem cell transplantation

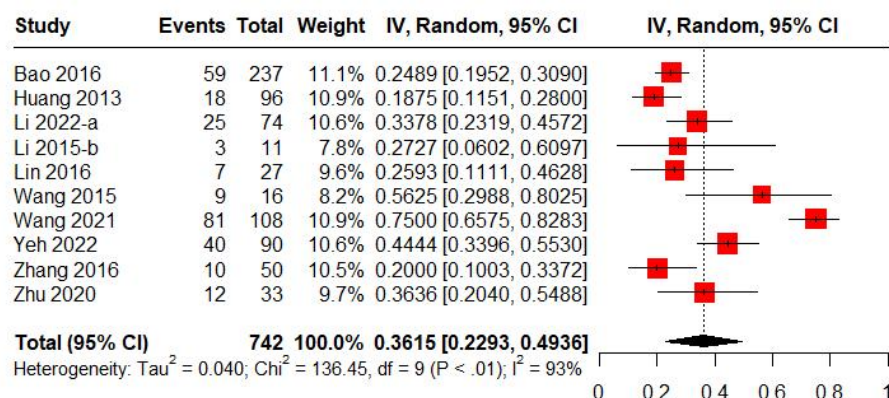


Figure S5 Forest plot of incidence of CMV infection after human leukocyte antigen-matched allogeneic hematopoietic stem cell transplantation

Incidence of CMV infection based on prior-transplantation CMV serologic status of donor and recipients

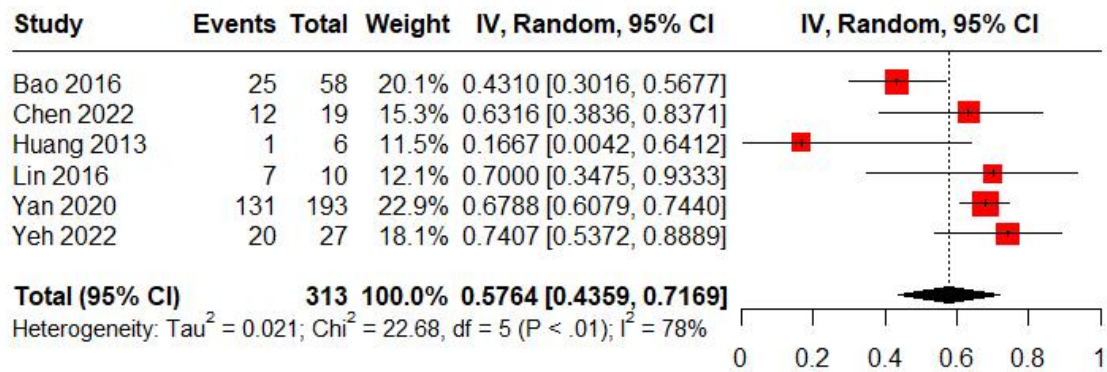


Figure S6 Forest plot of incidence of CMV infection after allogeneic hematopoietic stem cell transplantation based on the prior-transplantation serologic status of donor (negative) and recipient (positive)

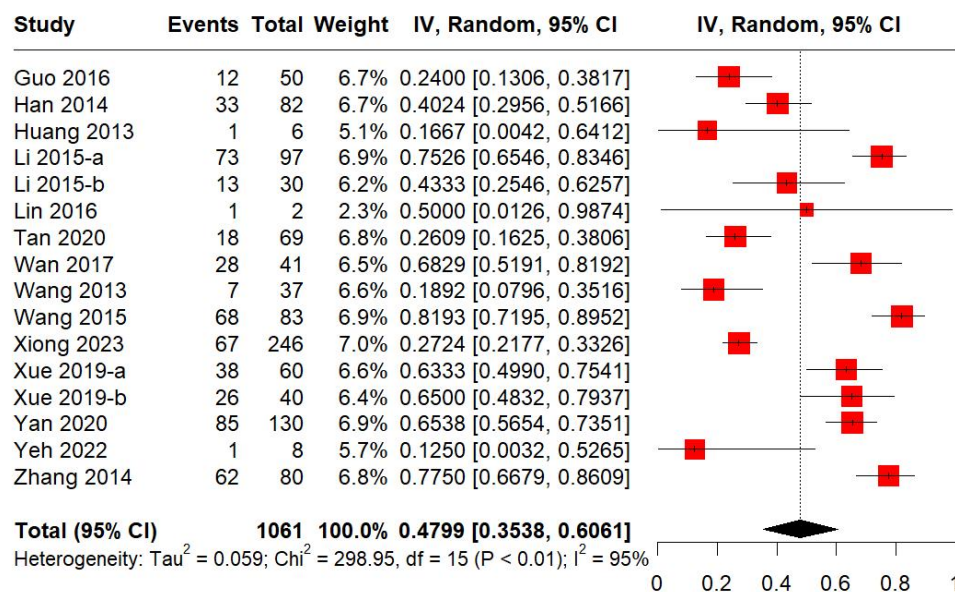


Figure S7 Forest plot of incidence of CMV infection after allogeneic hematopoietic stem cell transplantation based on the prior-transplantation serologic status of donor (negative) and recipient (negative)

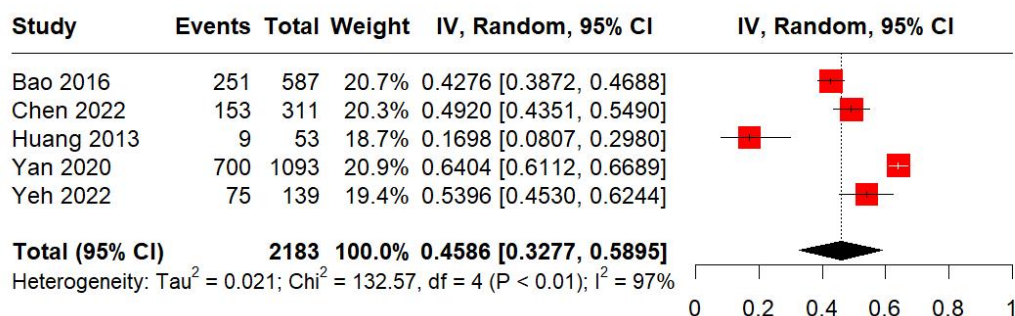


Figure S8 Forest plot of incidence of CMV infection after allogeneic hematopoietic stem cell transplantation based on the prior-transplantation serologic status of donor (positive) and recipient (positive)

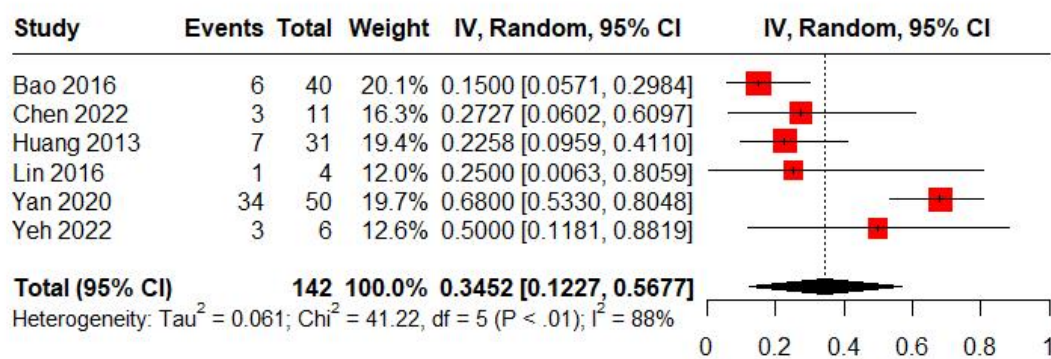


Figure S9 Forest plot of incidence of CMV infection after allogeneic hematopoietic stem cell transplantation based on the prior-transplantation serologic status of donor (positive) and recipient (negative)

Incidence of cumulative CMV infection within various follow-up periods

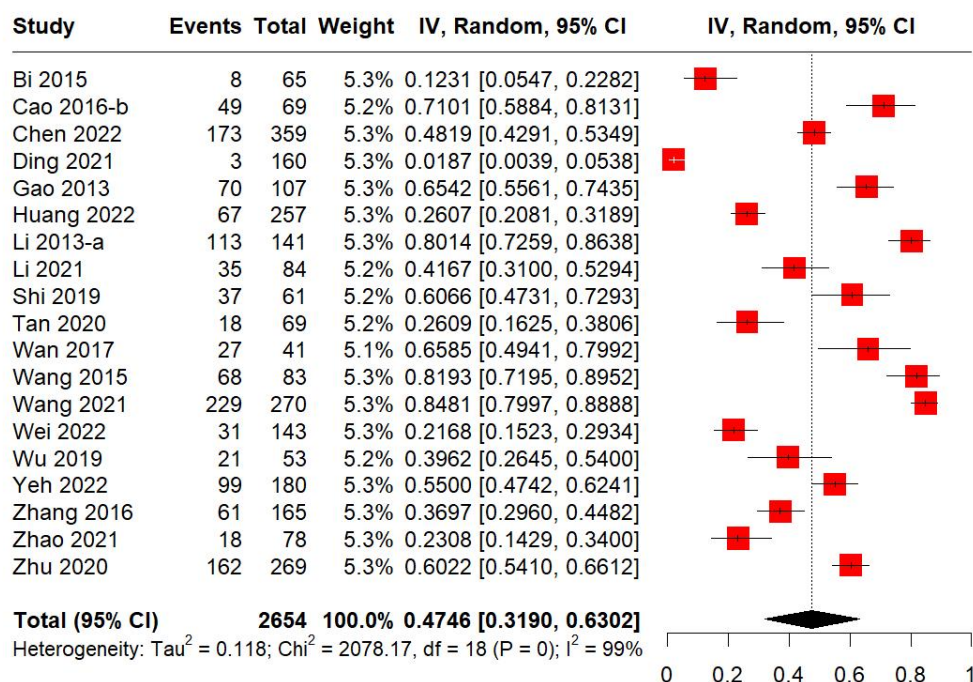


Figure S10 Forest plot of incidence of cumulative CMV infection within 100 days after allogeneic hematopoietic stem cell transplantation

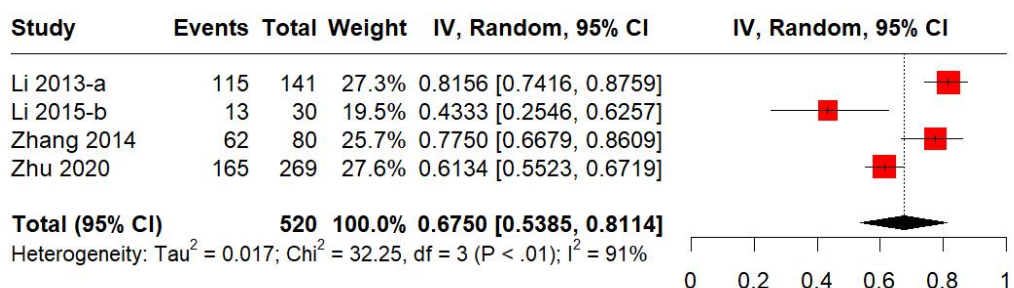


Figure S11 Forest plot of incidence of cumulative CMV infection within 200 days after allogeneic hematopoietic stem cell transplantation

Incidence of CMV infection based on patient's age

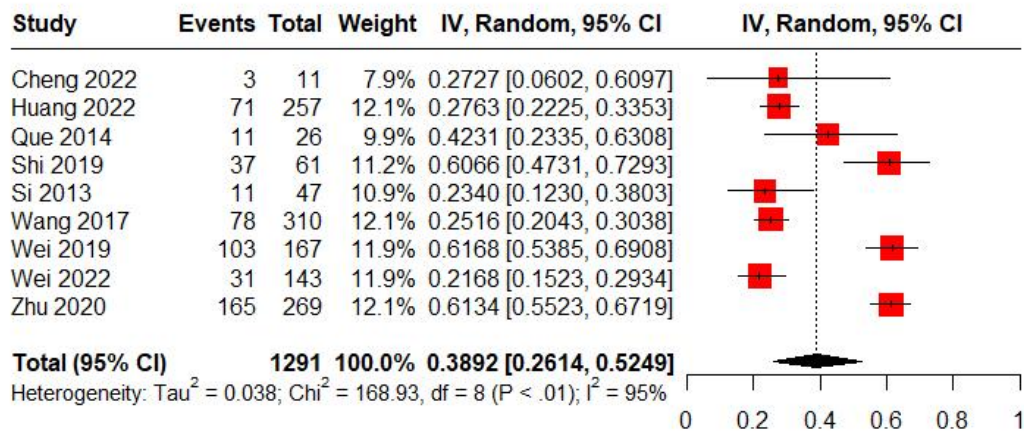


Figure S12 Forest plot of incidence of CMV infection in child recipients after allogeneic hematopoietic stem cell transplantation

Incidence of refractory and recurrent CMV infection

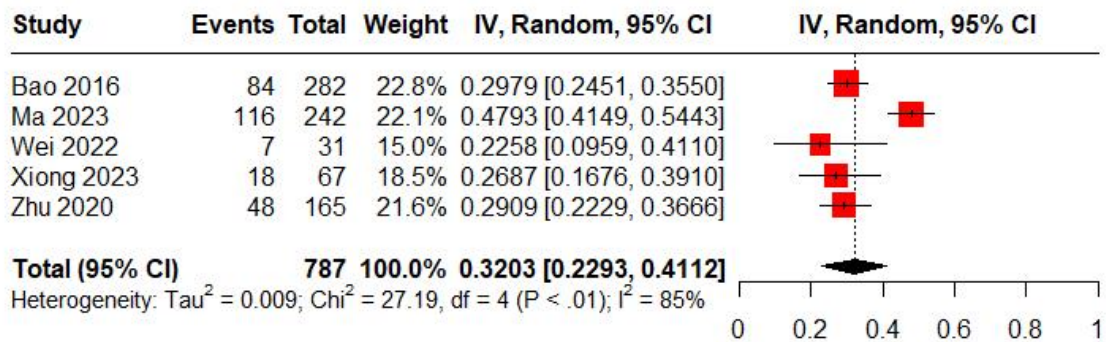


Figure S13 Forest plot of incidence of refractory CMV infection after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

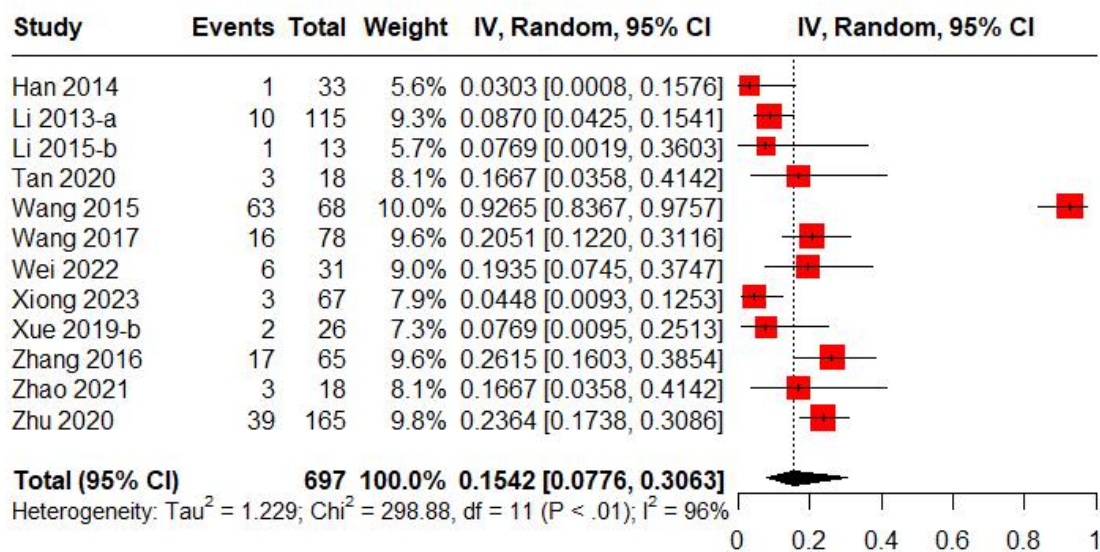


Figure S14 Forest plot of incidence of recurrent CMV infection after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

Incidence of CMV diseases

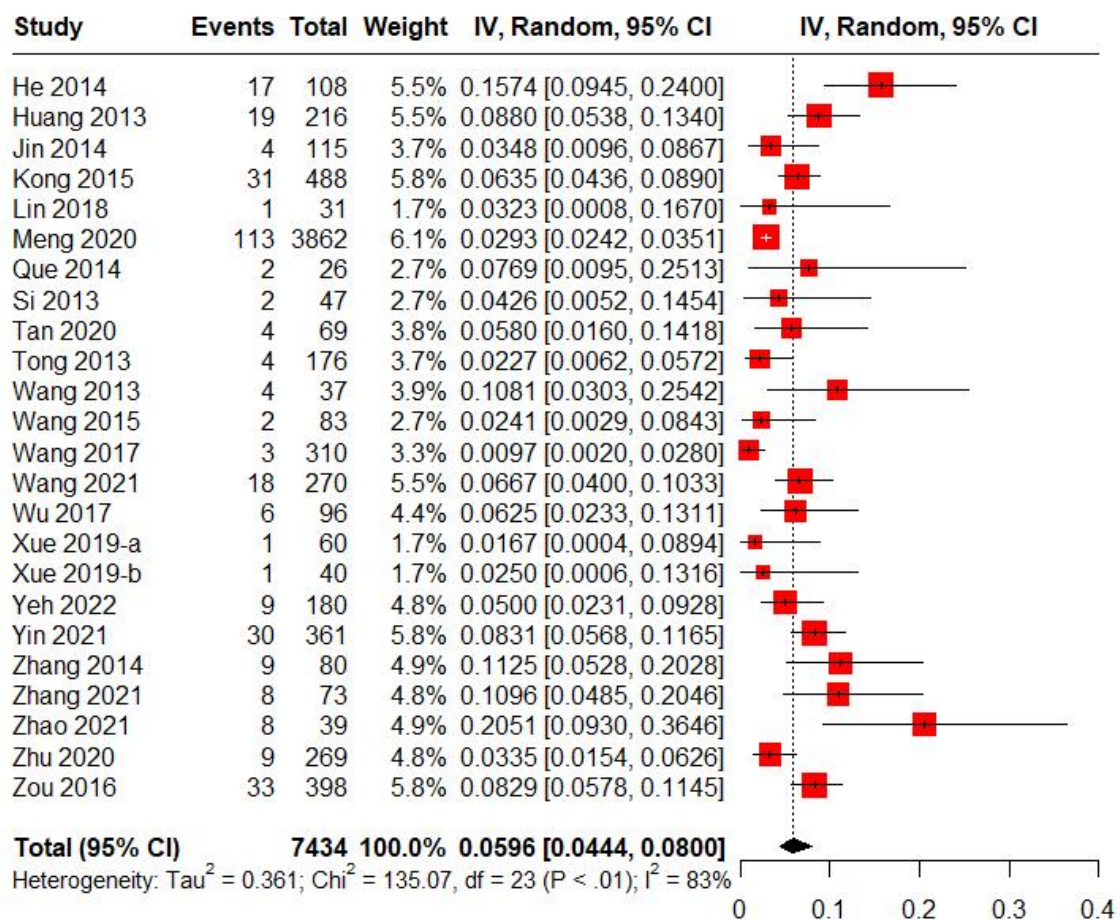


Figure S15 Forest plot of incidence of CMV pneumonitis after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

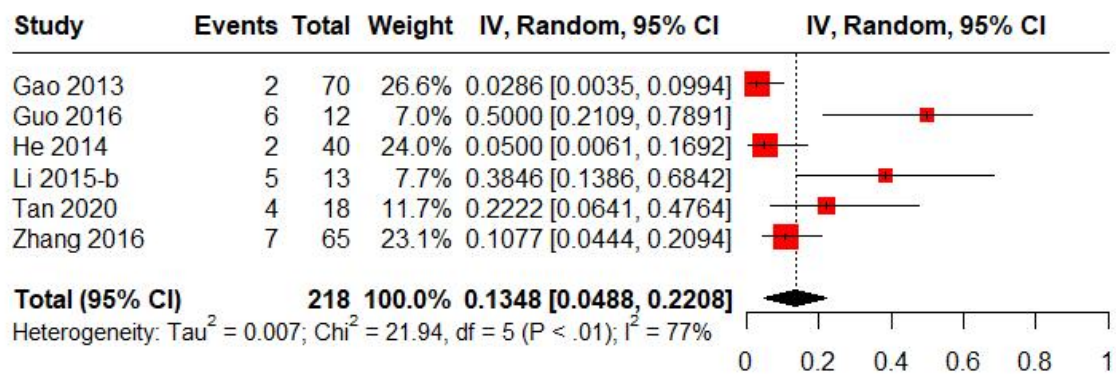


Figure S16 Forest plot of incidence of CMV cystitis after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

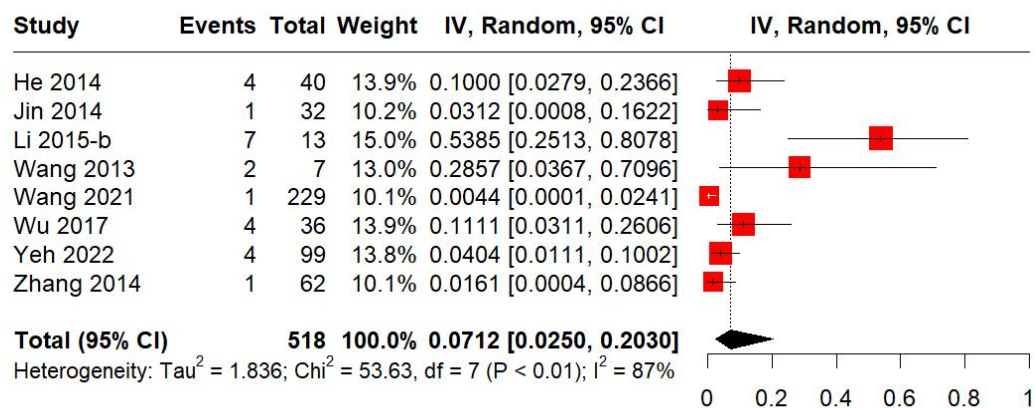


Figure S17 Forest plot of incidence of CMV enteritis after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

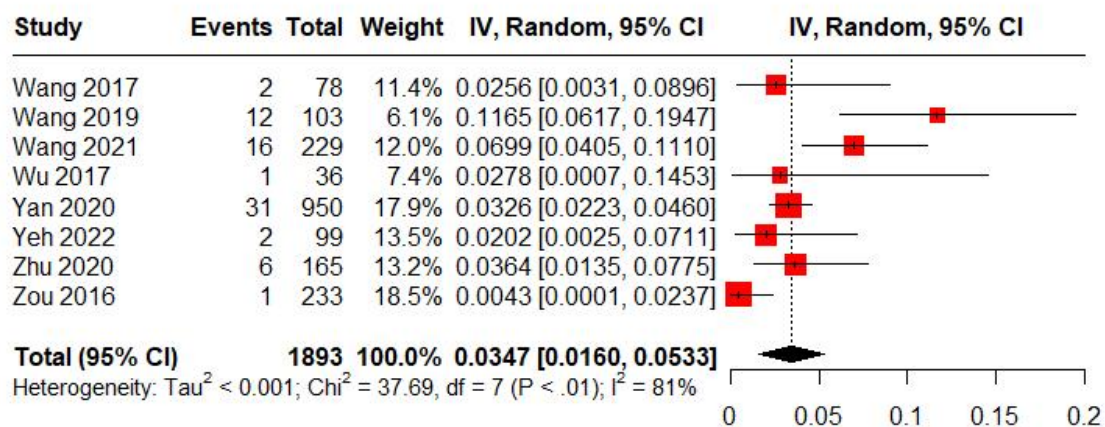


Figure S18 Forest plot of incidence of CMV retinitis after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

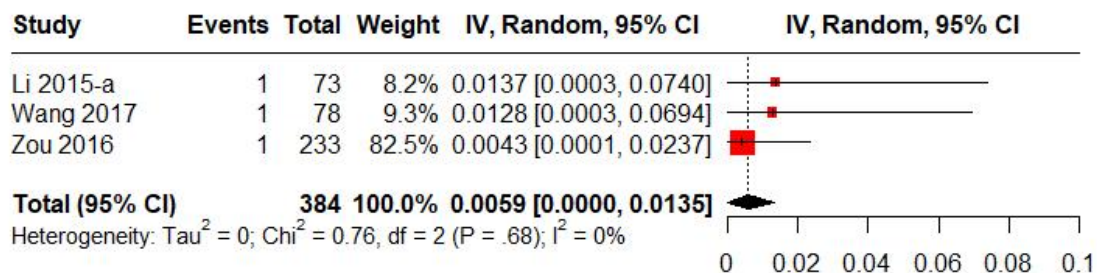


Figure S19 Forest plot of incidence of CMV encephalitis after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

Mortality rate

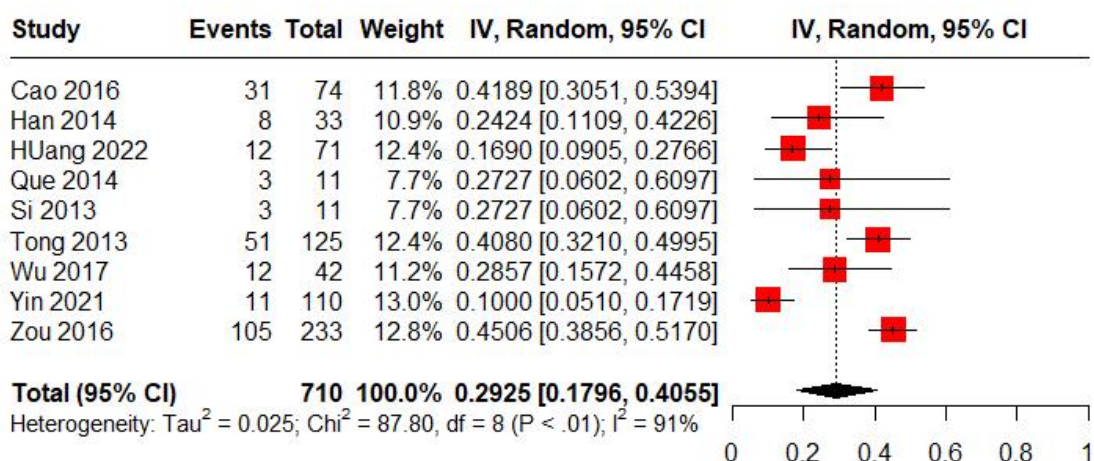


Figure S20 Forest plot of all-cause mortality after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

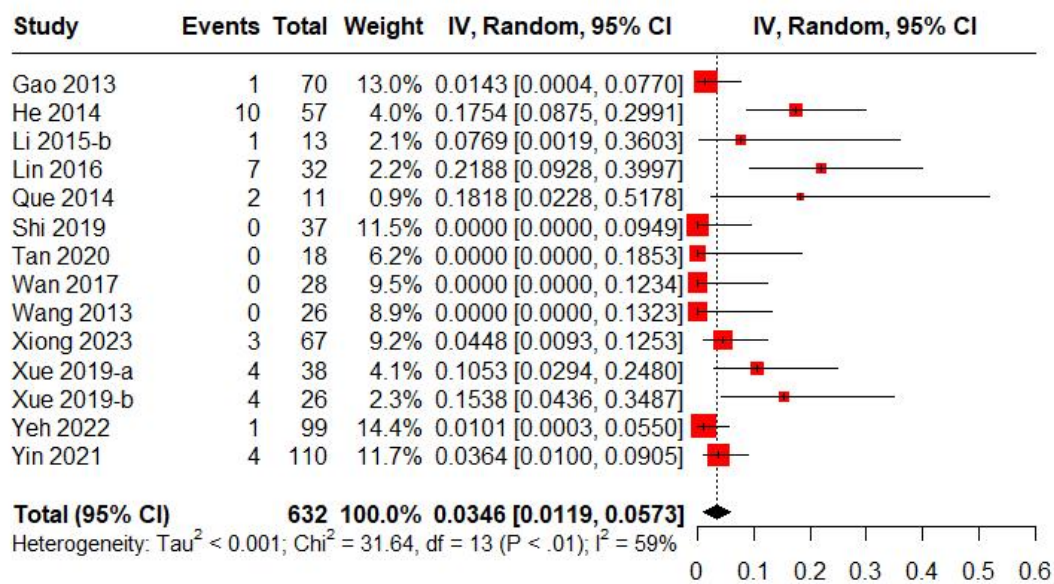


Figure S21 Forest plot of CMV-related mortality after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

Incidence of comorbidities

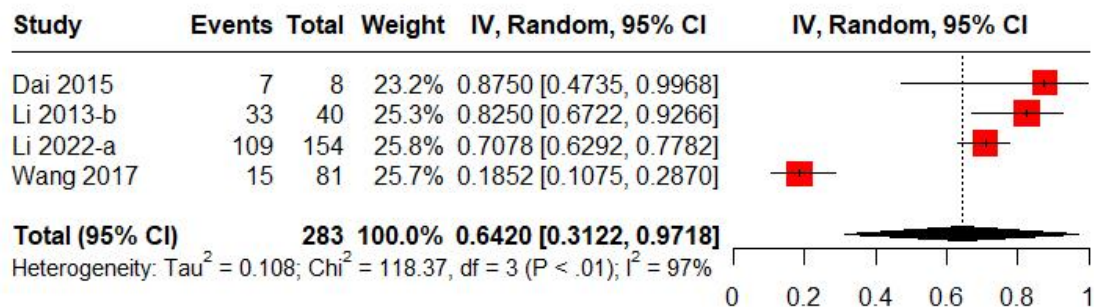


Figure S22 Forest plot of incidence of graft versus host disease after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

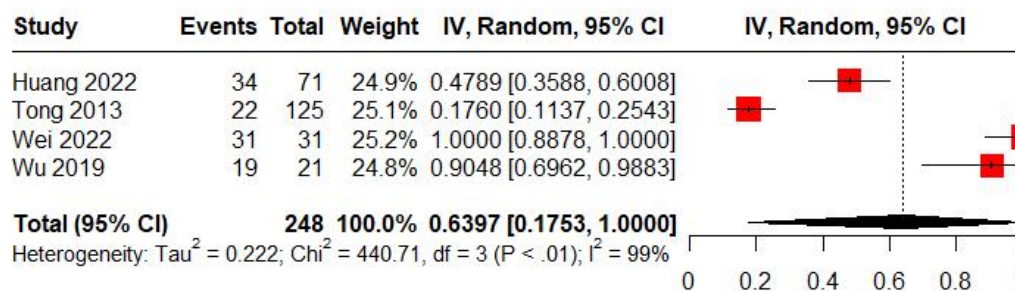


Figure S23 Forest plot of incidence of acute graft versus host disease after allogeneic hematopoietic stem cell transplantation among recipients with CMV infection

Supplementary 4 Funnel plots assessing publication bias on the results with 10 or more included studies

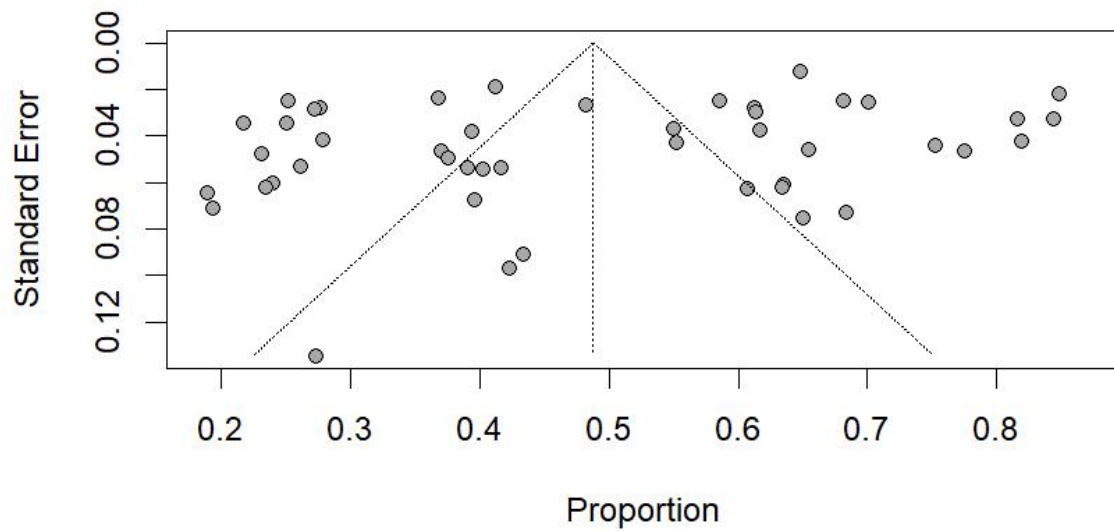


Figure S24 Funnel plot for meta-analysis of CMV infection incidence in recipients after allogeneic hematopoietic stem cell transplantation

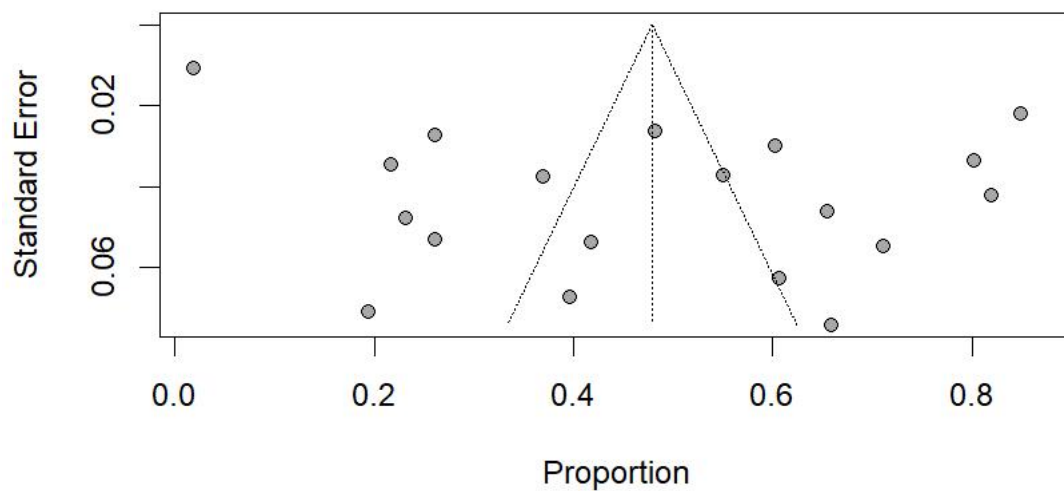


Figure S25 Funnel plot for meta-analysis of CMV infection incidence in recipients within 100 days after allogeneic hematopoietic stem cell transplantation

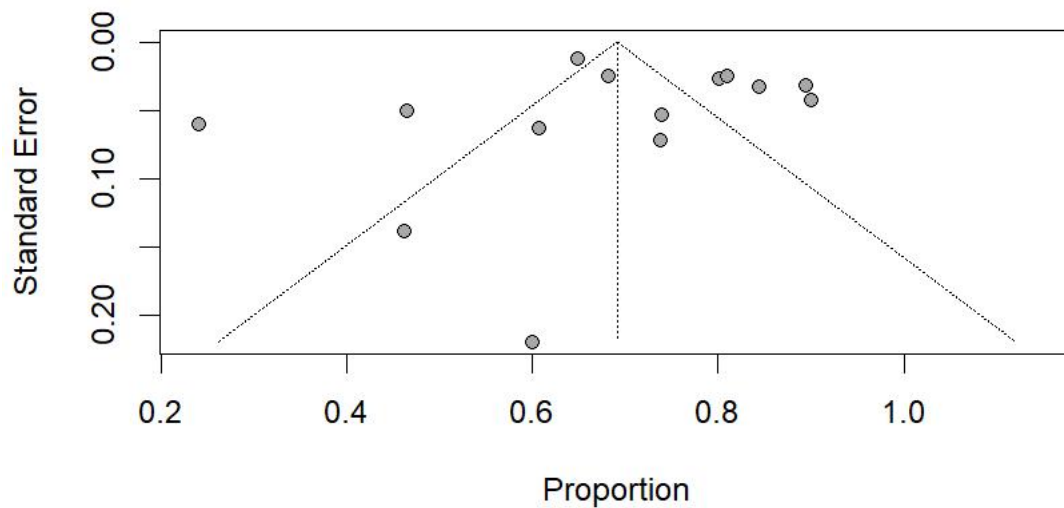


Figure S26 Funnel plot for meta-analysis of CMV infection incidence in recipients after haploidentical allogeneic hematopoietic stem cell transplantation

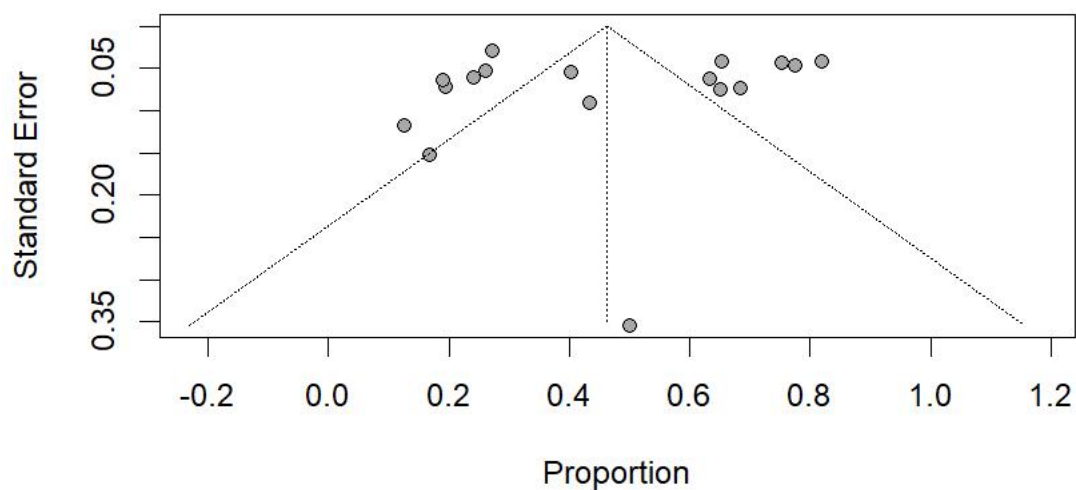


Figure S27 Funnel plot for meta-analysis of CMV infection incidence in recipients after haploidentical allogeneic hematopoietic stem cell transplantation when the CMV serostatus was negative in donor and recipients

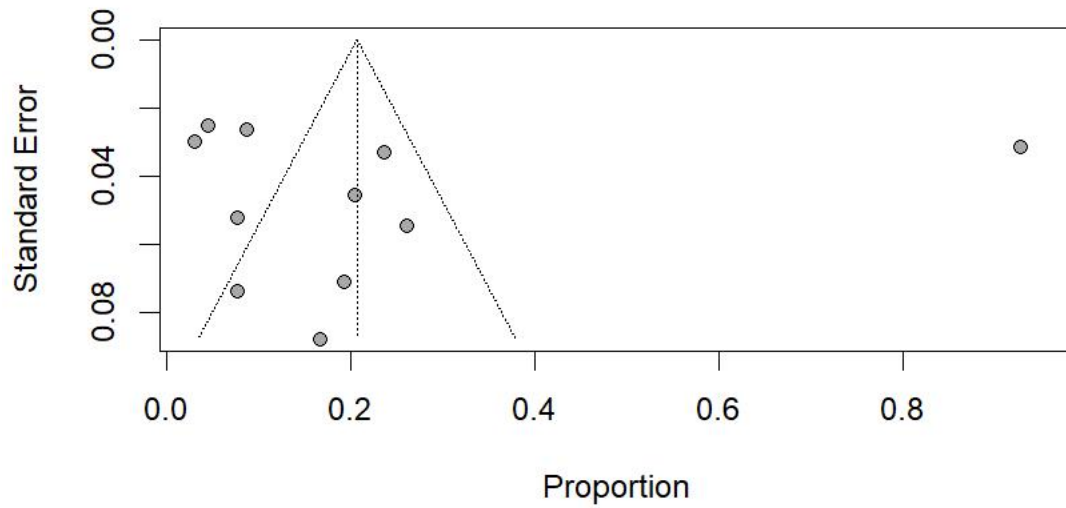


Figure S28 Funnel plot for meta-analysis of recurrent CMV infection incidence in recipients after allogeneic hematopoietic stem cell transplantation

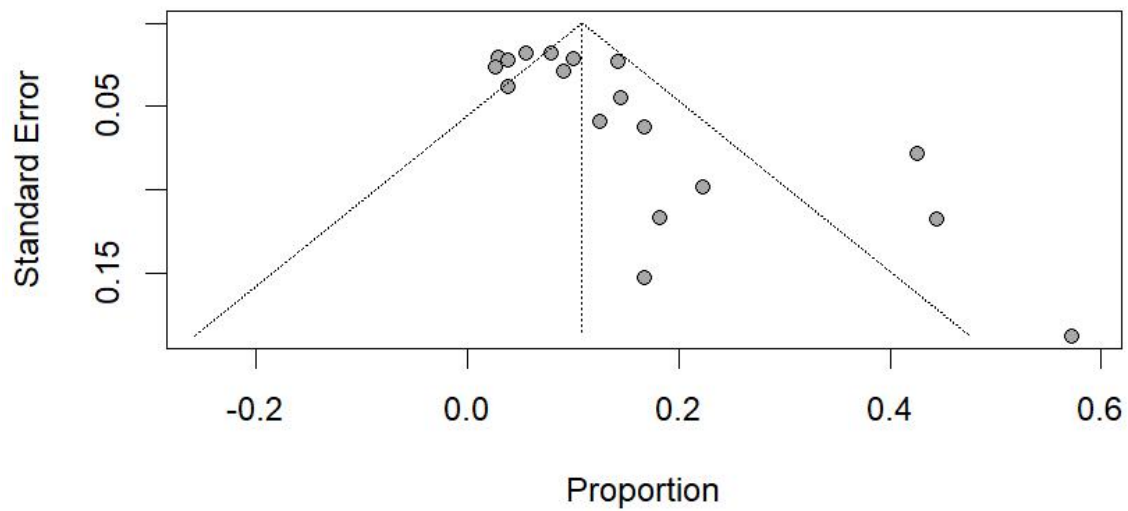


Figure S29 Funnel plot for meta-analysis of CMV disease incidence in recipients with CMV infection after allogeneic hematopoietic stem cell transplantation

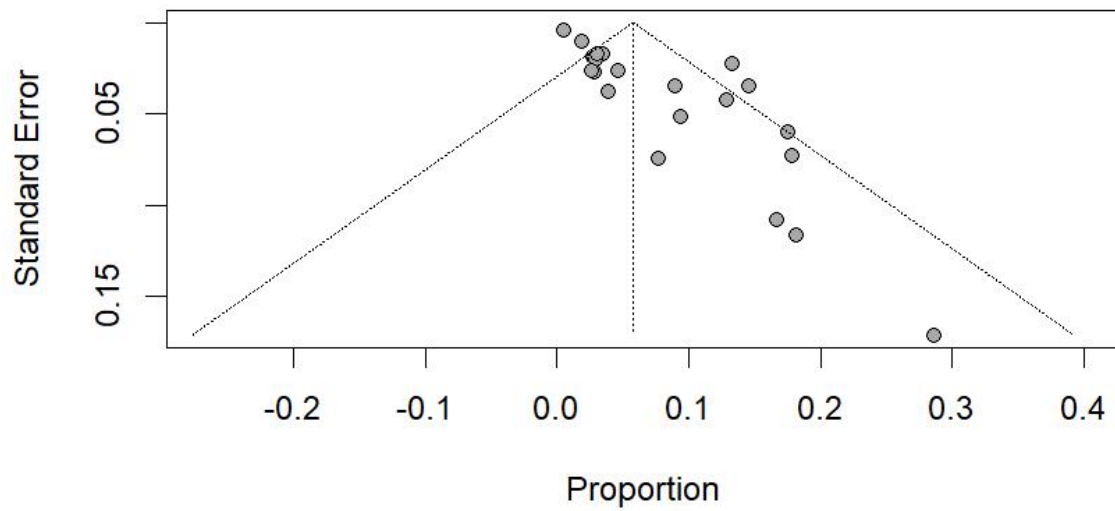


Figure S30 Funnel plot for meta-analysis of CMV pneumonitis incidence in recipients with CMV infection after allogeneic hematopoietic stem cell transplantation

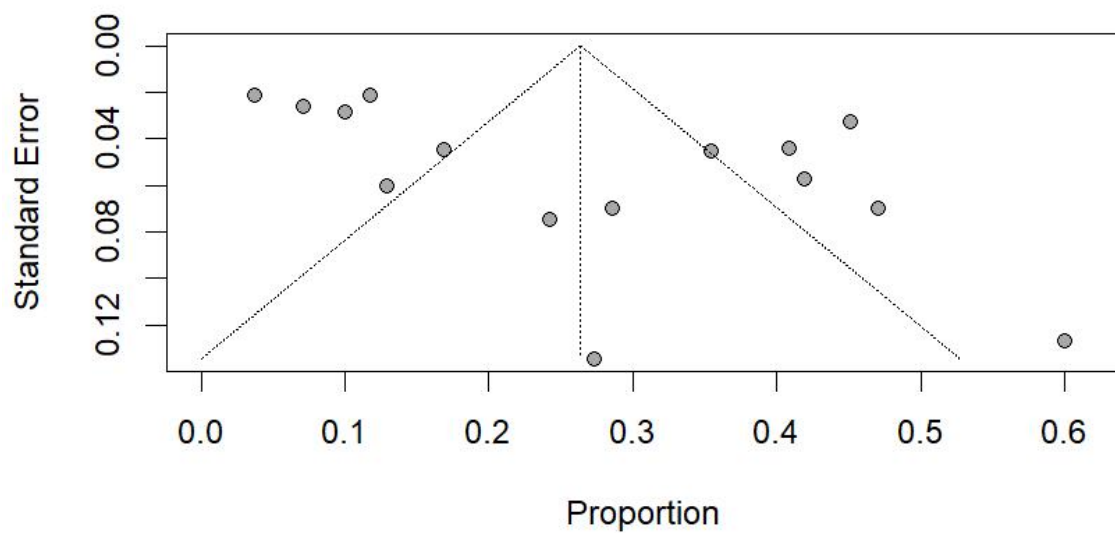


Figure S31 Funnel plot for meta-analysis of all-cause mortality rate in recipients with CMV infection after allogeneic hematopoietic stem cell transplantation

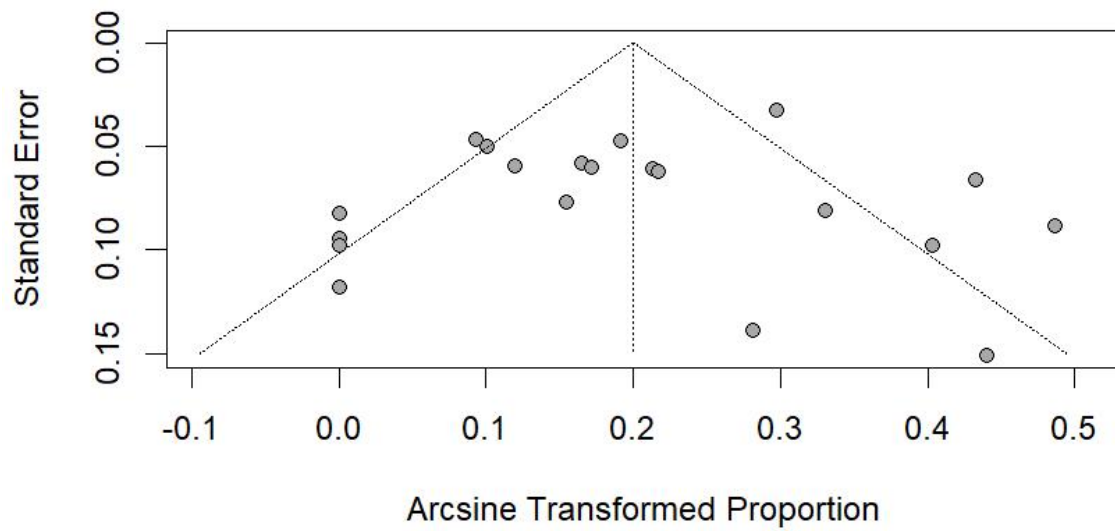


Figure S32 Funnel plot for meta-analysis of CMV-related mortality rate in recipients with CMV infection after allogeneic hematopoietic stem cell transplantation