

Supplementary Material

Table S1: Search strategies

Table S2. Critical appraisal of RCTs according to the Cochrane Collaboration's tool for assessing risk of bias in RCTs (Rob2).

Table S3. Critical appraisal of non-RCTs according to the Cochrane Collaboration's tool for assessing risk of bias in non-RCTs (ROBINS-I).

Figure S1: leave-one-out sensitive-analysis of ORR

Figure S2: leave-one-out sensitive-analysis of DCR

Figure S3: leave-one-out sensitive-analysis of PFS 12 in months

Figure S4: leave-one-out sensitive-analysis of OS 12 in months

Figure S5: leave-one-out sensitive-analysis of OS 24 in months

Figure S6: funnel plot of ORR

Figure S7: funnel plot of DCR

Figure S8: funnel plot of PFS

Figure S9: funnel plot of OS 12 months

Figure S10: funnel plot of OS 24 months

Figure S11. Any grade of adverse events. **A.** Vomiting **B.** Rash **C.** Proteinuria **D.** Nausea **E.** Hyponatremia. **F.** Fatigue. **G.** Edema. **H.** Diarrhea. **I.** Diarrhea. **J.** Increased AST. **K.** Anorexia. **L.** Anemia. **M.** Increased ALT.

Figure S12. Grade ≥ 3 adverse events. **A.** Decreased WBC. **B.** Vomiting. **C.** Rash. **D.** Proteinuria. **E.** Decreased neutrophil Count. **F.** Nausea. **G.** Mucositis. **H.** Hyponatremia. **I.** Hypoalbuminemia. **J.** Hypertension. **K.** Fatigue. **L.** Extremity pain. **M.** Edema **N.** Dyspnea. **O.** Diarrhea. **P.** Increased creatinine. **Q.** Increased AST. **R.** Anorexia. **S.** Anemia. **T.** Increased ALT. **U.** Abdominal pain.

Table S1: Search strategies.

Database	Search Strategy
PubMed	<p>((((((((((((((((((((((("Papillary renal cell carcinoma"[MeSH Terms]) OR ("Papillary renal cell carcinoma"[Title/Abstract])) OR ("Papillary renal cell carcinoma, multiple"[Title/Abstract])) OR ("Papillary renal cell carcinoma, familial"[Title/Abstract])) OR ("Papillary renal carcinoma, malignant"[Title/Abstract])) OR ("Papillary renal cell carcinoma, bilateral"[Title/Abstract])) OR ("Carcinoma, Renal Cell"[MeSH Terms]) OR ("Carcinoma, Renal Cell"[Title/Abstract])) OR ("Carcinomas, Renal Cell"[Title/Abstract])) OR ("Renal Cell Carcinomas"[Title/Abstract])) OR ("Renal Carcinomas"[Title/Abstract])) OR ("Kidney Neoplasms"[MeSH Terms]) OR ("Kidney Neoplasms"[Title/Abstract])) OR ("Kidney Neoplasm"[Title/Abstract])) OR ("Neoplasm, Kidney"[Title/Abstract])) OR ("Renal Neoplasms"[Title/Abstract])) OR ("Neoplasm, Renal"[Title/Abstract])) OR ("Neoplasms, Renal"[Title/Abstract])) OR ("Renal Neoplasm"[Title/Abstract])) OR ("Neoplasms, Kidney"[Title/Abstract])) OR ("Cancer of Kidney"[Title/Abstract])) OR ("Kidney Cancers"[Title/Abstract])) OR ("Renal Cancer"[Title/Abstract])) OR ("Cancer, Renal"[Title/Abstract])) OR ("Cancers, Renal"[Title/Abstract])) OR ("Renal Cancers"[Title/Abstract])) OR ("Cancer of the Kidney"[Title/Abstract])) OR ("Kidney Cancer"[Title/Abstract])) OR ("Cancer, Kidney"[Title/Abstract])) OR ("Cancers, Kidney"[Title/Abstract])) AND (((((((((((((((("c-MET inhibitor"[Title/Abstract])) OR ("c-MET inhibitors"[Title/Abstract])) OR ("MET inhibitor"[Title/Abstract])) OR ("MET inhibitors"[Title/Abstract])) OR ("Cabozantinib"[Title/Abstract])) OR ("Crizotinib"[Title/Abstract])) OR ("Crizotinib"[MeSH Terms]) OR ("Cabozantinib"[MeSH Terms])) OR ("Tivantinib"[Title/Abstract])) OR ("Foretinib"[Title/Abstract])) OR ("Savolitinib"[Title/Abstract])) OR ("AMG-208"[MeSH Terms]) OR ("AMG-208"[Title/Abstract])) OR ("PF-04217903"[Title/Abstract])) OR ("BMS777607"[Title/Abstract])) OR ("NVP-BVU972"[Title/Abstract])) OR ("PHA-665752"[Title/Abstract]) OR ("MET-directed agents"[Title/Abstract]))</p>
Scopus	<p>("Papillary renal cell carcinoma") OR TITLE-ABS-KEY("Papillary renal cell carcinoma") OR TITLE-ABS-KEY("Papillary renal cell carcinoma, multiple") OR TITLE-ABS-KEY("Papillary renal cell carcinoma, familial") OR TITLE-ABS-KEY("Papillary renal cell carcinoma, malignant") OR TITLE-ABS-KEY("Papillary renal cell carcinoma, bilateral") OR MESH("Carcinoma, Renal Cell") OR TITLE-ABS-KEY("Carcinoma, Renal Cell") OR TITLE-ABS-KEY("Carcinomas, Renal Cell") OR TITLE-ABS-KEY("Renal Cell Carcinomas") OR TITLE-ABS-KEY("Renal Carcinomas") OR MESH("Kidney Neoplasms") OR TITLE-ABS-KEY("Kidney Neoplasms") OR TITLE-ABS-KEY("Kidney Neoplasm") OR TITLE-ABS-KEY("Neoplasm, Kidney") OR TITLE-ABS-KEY("Renal Neoplasms") OR TITLE-ABS-KEY("Neoplasm, Renal") OR TITLE-ABS-KEY("Neoplasms, Renal") OR TITLE-ABS-KEY("Renal Neoplasm") OR TITLE-ABS-KEY("Neoplasms, Kidney") OR TITLE-ABS-KEY("Cancer of Kidney") OR TITLE-ABS-KEY("Kidney Cancers") OR TITLE-ABS-KEY("Renal Cancer") OR TITLE-ABS-KEY("Cancer, Renal") OR TITLE-ABS-KEY("Cancers, Renal") OR TITLE-ABS-KEY("Renal Cancers") OR TITLE-ABS-KEY("Cancer of the Kidney") OR TITLE-ABS-KEY("Kidney Cancer") OR</p>

TITLE-ABS-KEY("Cancer, Kidney") OR TITLE-ABS-KEY("Cancers, Kidney")) AND ((TITLE-ABS-KEY("c-MET inhibitor") OR TITLE-ABS-KEY("c-MET inhibitors") OR TITLE-ABS-KEY("MET inhibitor") OR TITLE-ABS-KEY("MET inhibitors") OR TITLE-ABS-KEY("Cabozantinib") OR TITLE-ABS-KEY("Crizotinib") OR TITLE-ABS-KEY("AMG-208") OR TITLE-ABS-KEY("PF-04217903") OR TITLE-ABS-KEY("BMS777607") OR TITLE-ABS-KEY("NVP-BVU972") OR TITLE-ABS-KEY("PHA-665752") OR TITLE-ABS-KEY("MET-directed agents")))

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("Papillary renal cell carcinoma"):ti,ab,kw OR ("Papillary renal cell carcinoma"):ti,ab,kw OR ("Papillary renal cell carcinoma, multiple"):ti,ab,kw OR ("Papillary renal cell carcinoma, familial"):ti,ab,kw OR ("Papillary renal cell carcinoma, malignant"):ti,ab,kw OR ("Papillary renal cell carcinoma, bilateral"):ti,ab,kw OR ("Carcinoma, Renal Cell"):ti,ab,kw OR ("Carcinoma, Renal Cell"):ti,ab,kw OR ("Carcinomas, Renal Cell"):ti,ab,kw OR ("Renal Cell Carcinomas"):ti,ab,kw OR ("Renal Carcinomas"):ti,ab,kw OR ("Kidney Neoplasms"):ti,ab,kw OR ("Kidney Neoplasms"):ti,ab,kw OR ("Kidney Neoplasm"):ti,ab,kw OR ("Neoplasm, Kidney"):ti,ab,kw OR ("Renal Neoplasms"):ti,ab,kw OR ("Neoplasm, Renal"):ti,ab,kw OR ("Neoplasms, Renal"):ti,ab,kw OR ("Renal Neoplasm"):ti,ab,kw OR ("Neoplasms, Kidney"):ti,ab,kw OR ("Cancer of Kidney"):ti,ab,kw OR ("Kidney Cancers"):ti,ab,kw OR ("Renal Cancer"):ti,ab,kw OR ("Cancer, Renal"):ti,ab,kw OR ("Cancers, Renal"):ti,ab,kw OR ("Renal Cancers"):ti,ab,kw OR ("Cancer of the Kidney"):ti,ab,kw OR ("Kidney Cancer"):ti,ab,kw OR ("Cancer, Kidney"):ti,ab,kw OR ("Cancers, Kidney"):ti,ab,kw) AND ("c-MET inhibitor"):ti,ab,kw OR ("c-MET inhibitors"):ti,ab,kw OR ("MET inhibitor"):ti,ab,kw OR ("MET inhibitors"):ti,ab,kw OR ("Cabozantinib"):ti,ab,kw OR ("Crizotinib"):ti,ab,kw OR ("AMG-208"):ti,ab,kw OR ("PF-04217903"):ti,ab,kw OR ("BMS777607"):ti,ab,kw OR ("NVP-BVU972"):ti,ab,kw OR ("PHA-665752"):ti,ab,kw OR ("MET-directed agents"):ti,ab,kw)

Table S2: Critical appraisal of RCTs according to the Cochrane Collaboration’s tool for assessing risk of bias in RCTs (Rob2). Datas were sourced from reference [1–3].

		Risk of bias domains					
		D1	D2	D3	D4	D5	Overall
Study	SWOG S1107, 2017						
	Sumanta, 2021						
	SAVOIR, 2020						
		Domains: D1: Bias arising from the randomization process. D2: Bias due to deviations from intended intervention. D3: Bias due to missing outcome data. D4: Bias in measurement of the outcome. D5: Bias in selection of the reported result.					Judgement Low

Table S3: Critical appraisal of non-RCTs according to the Cochrane Collaboration’s tool for assessing risk of bias in non-RCTs (ROBINS-I). Datas were sourced from reference [4–9]

		Risk of bias domains							
		D1	D2	D3	D4	D5	D6	D7	Overall
Study	Schoffski, 2017	−	+	+	+	+	+	+	−
	Choueiri, 2017a	+	+	+	+	+	+	+	+
	Choueiri, 2017b	+	+	+	+	+	+	+	+
	Chanzá, 2019	+	−	+	+	+	+	+	−
	Tachibana, 2022	+	−	+	+	+	−	+	−
	CALYPSO, 2023	+	+	+	+	+	+	+	+
		Domains:							Judgement
		D1: Bias due to confounding.							− Moderate
		D2: Bias due to selection of participants.							+
		D3: Bias in classification of interventions.							Low
		D4: Bias due to deviations from intended interventions.							
		D5: Bias due to missing data.							
		D6: Bias in measurement of outcomes.							
		D7: Bias in selection of the reported result.							

Figure S1: leave-one-out sensitive-analysis of ORR. Datas were sourced from reference [1,2,4–10]

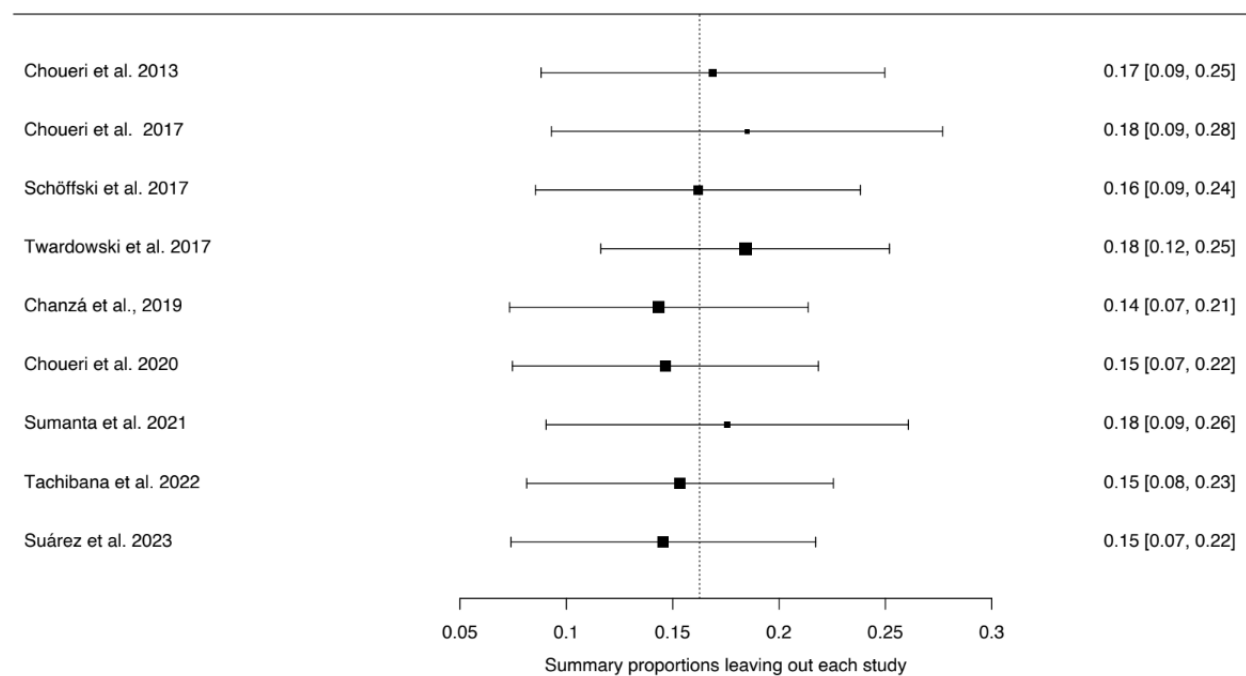


Figure S2: leave-one-out sensitive-analysis of DCR. Datas were sourced from reference [2,4–9]

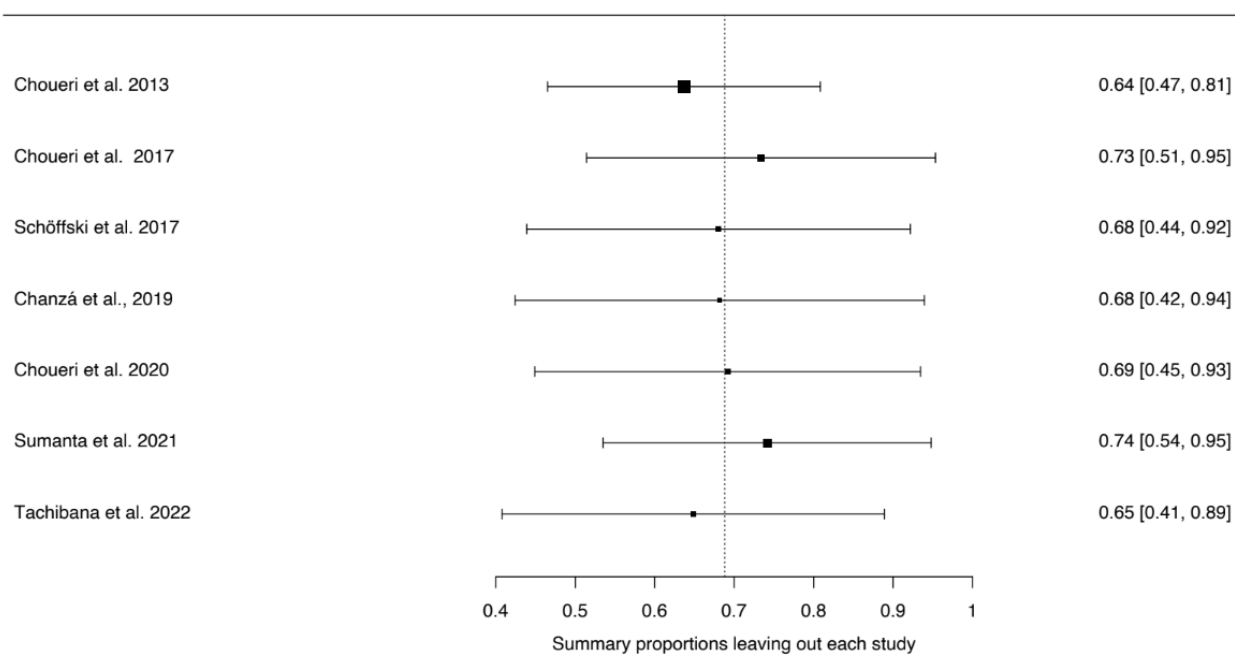


Figure S3: leave-one-out sensitive-analysis of PFS. Datas were sourced from reference [2,4–9].

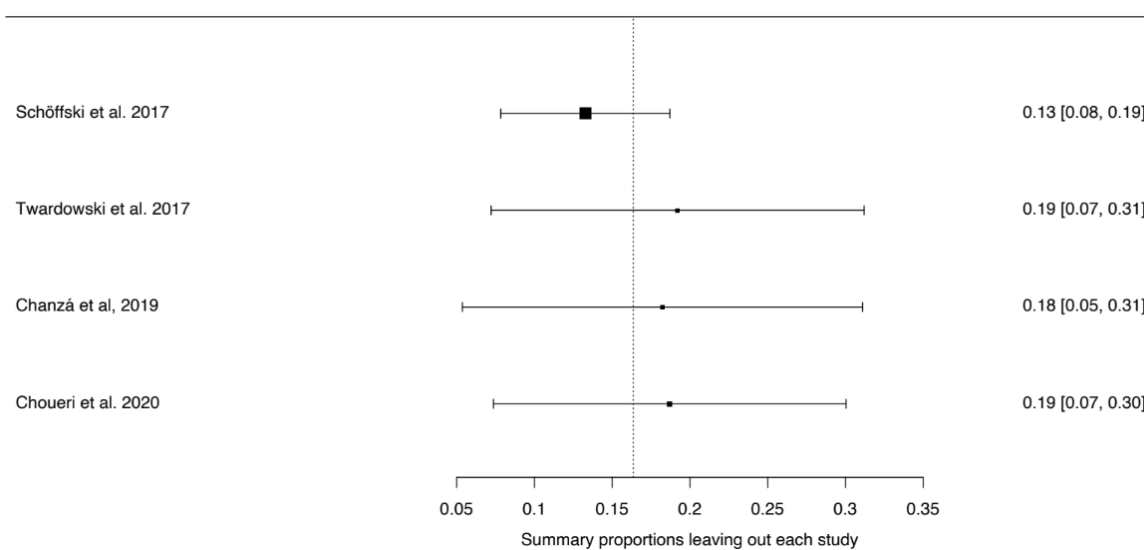


Figure S4: leave-one-out sensitive-analysis of OS 12 months. Datas were sourced from reference [1,4,7,9].

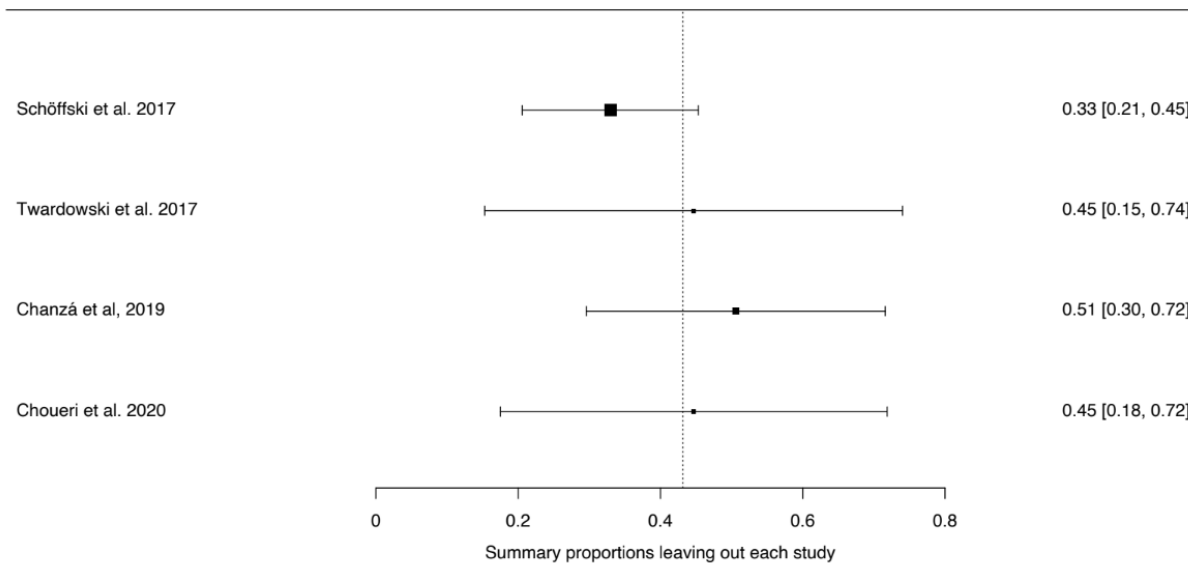


Figure S5: leave-one-out sensitive-analysis of OS 24 months. Datas were sourced from reference [4,7,9].

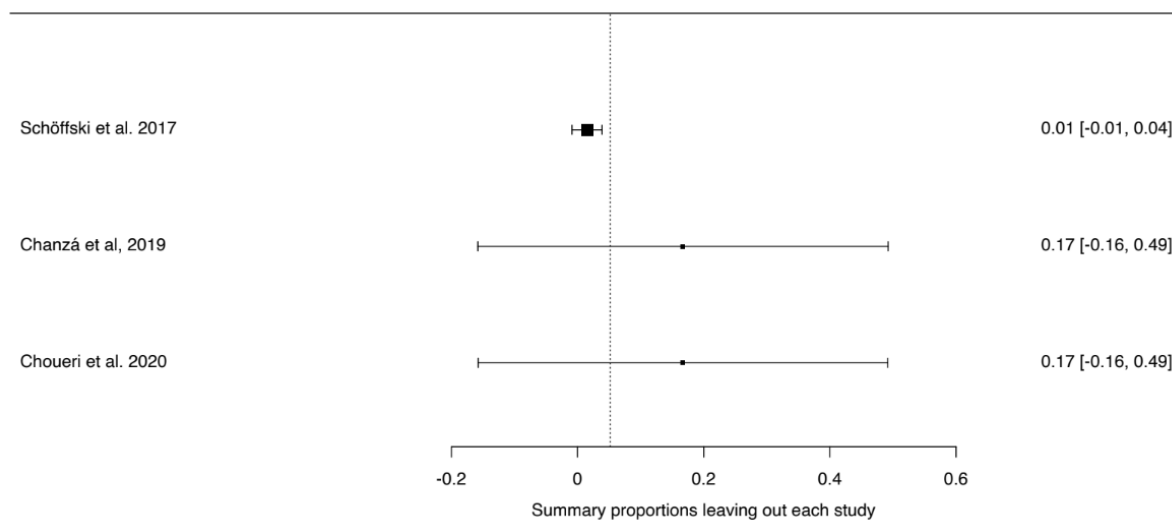


Figure S6: funnel plot of ORR. Datas were sourced from reference [1,6,7].

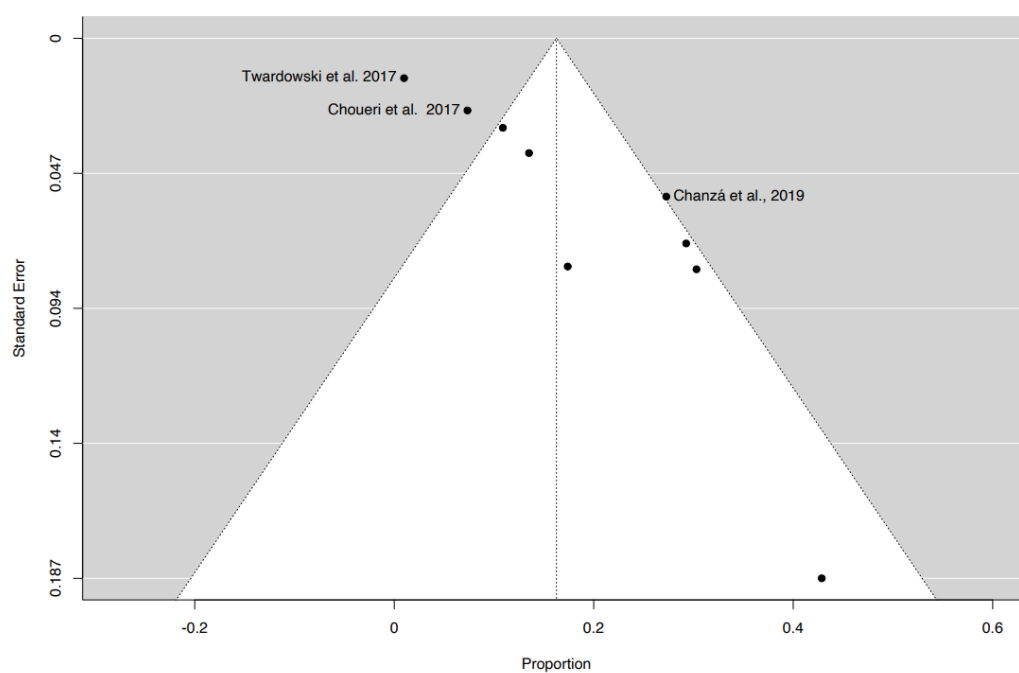


Figure S7: funnel plot of DCR. Datas were sourced from reference [2,6,8,9].

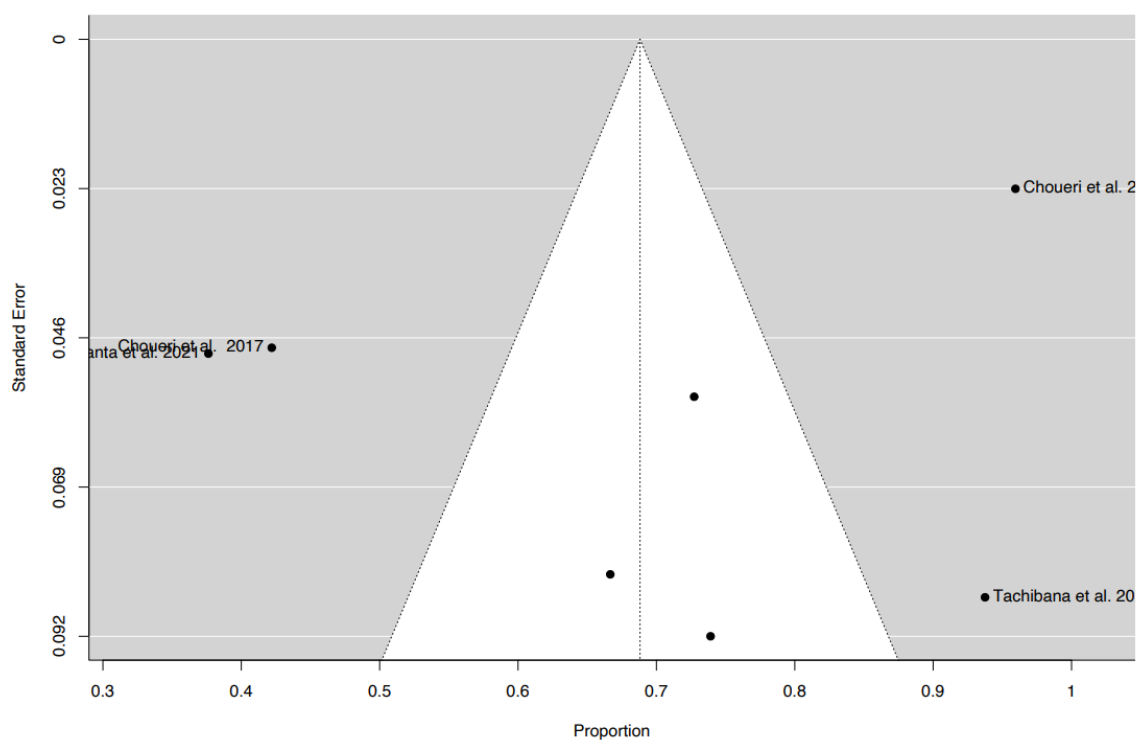


Figure S8: Funnel plot of PFS. Datas were sourced from reference [4].

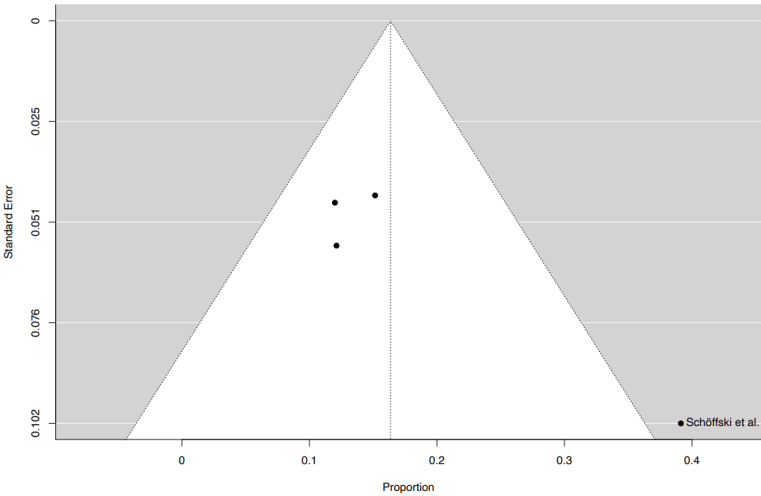


Figure S9: Funnel plot of OS 12 months. Datas were sourced from reference [4,7].

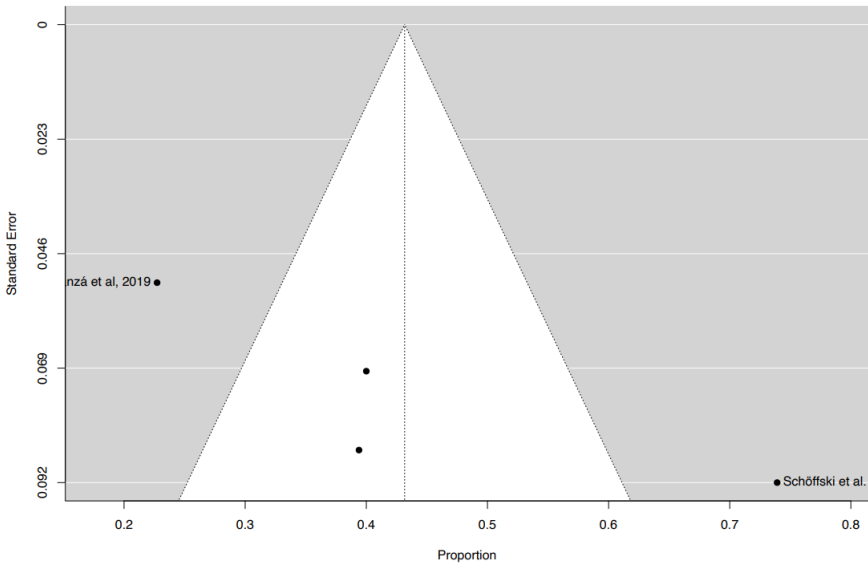


Figure S10: Funnel plot of OS 24 months. Datas were sourced from reference [4,7].

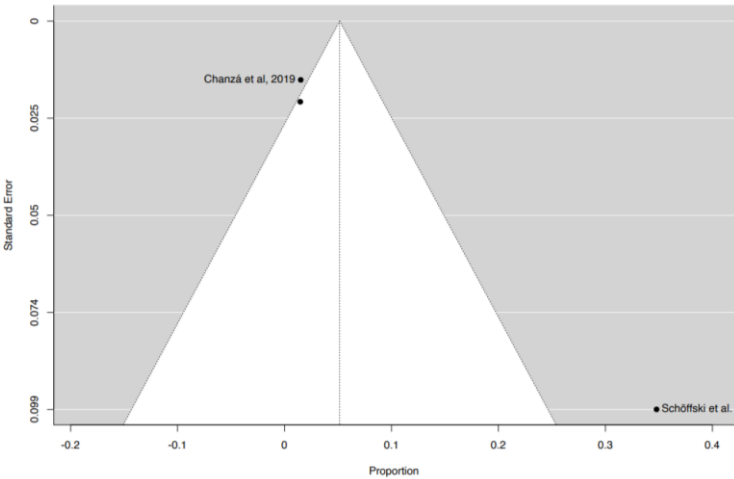
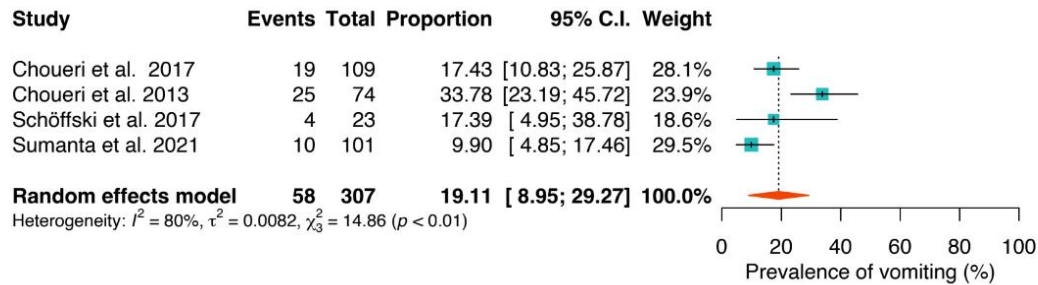
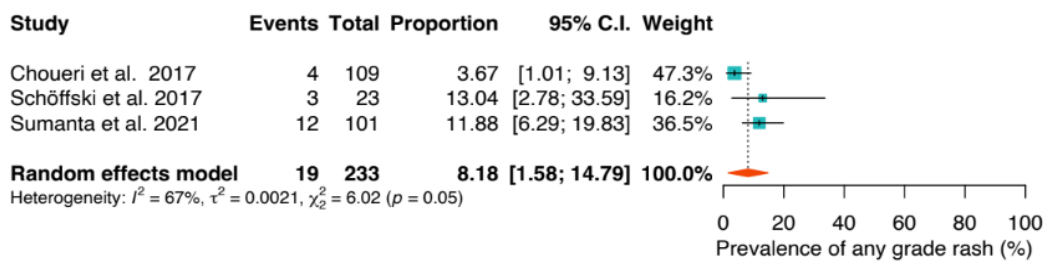


Figure S11. Any grade of adverse events. **A.** Vomiting **B.** Rash **C.** Proteinuria **D.** Nausea **E.** Hyponatremia. **F.** Fatigue. **G.** Edema. **H.** Diarrhea. **I.** Diarrhea. **J.** Increased AST. **K.** Anorexia. **L.** Anemia. **M.** Increased ALT. Datas were sourced from reference [2,4–6].

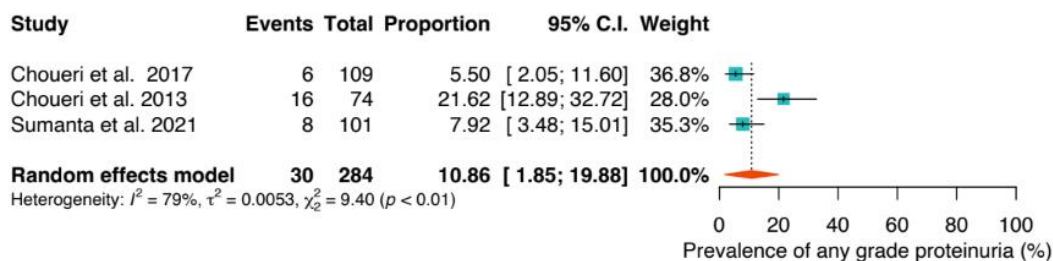
A. Vomiting



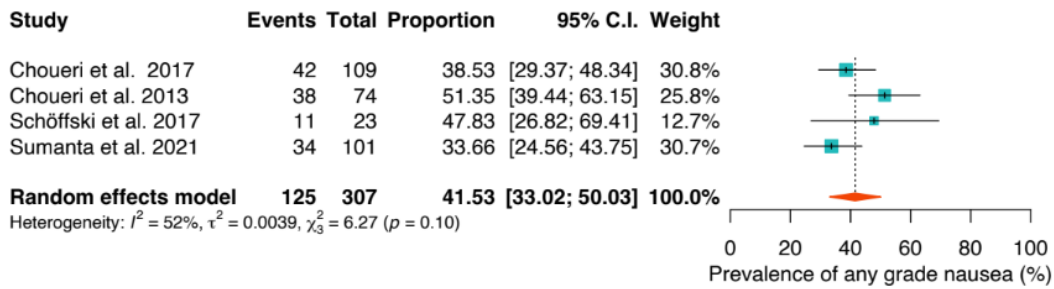
B. Rash



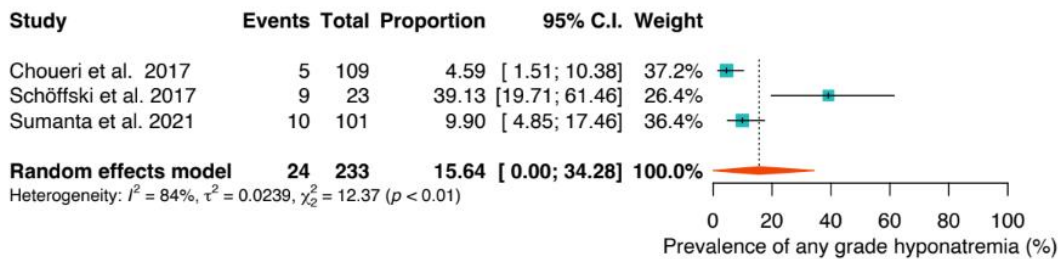
C. Proteinuria



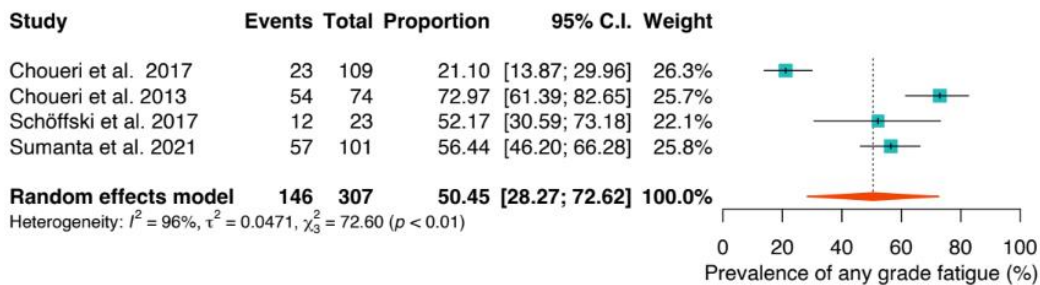
D. Nausea



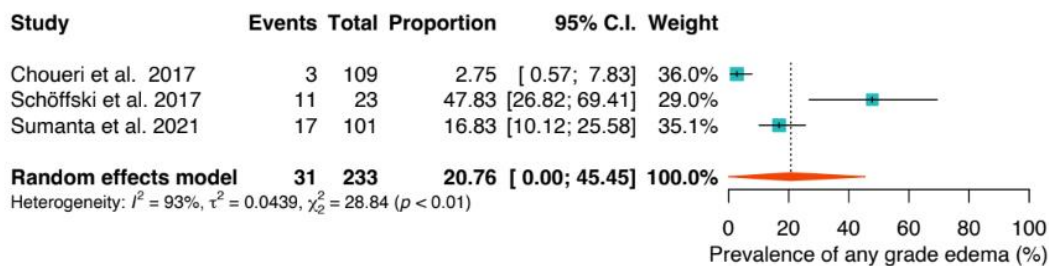
E. Hyponatremia



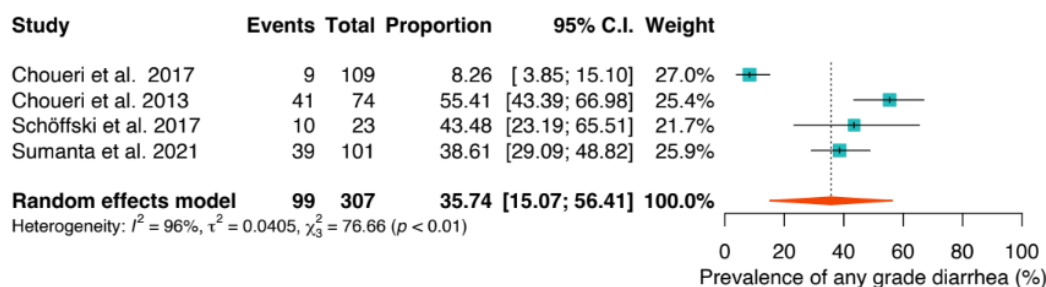
F. Fatigue



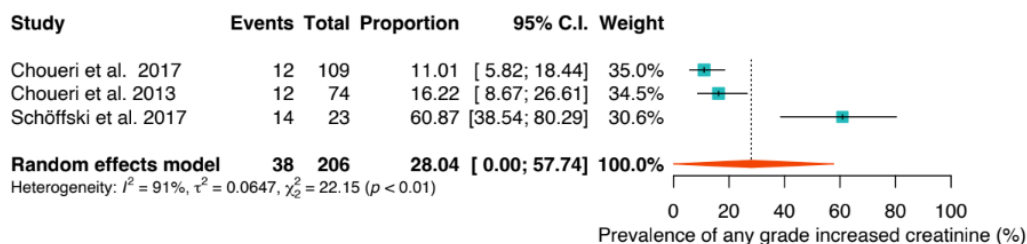
G. Edema



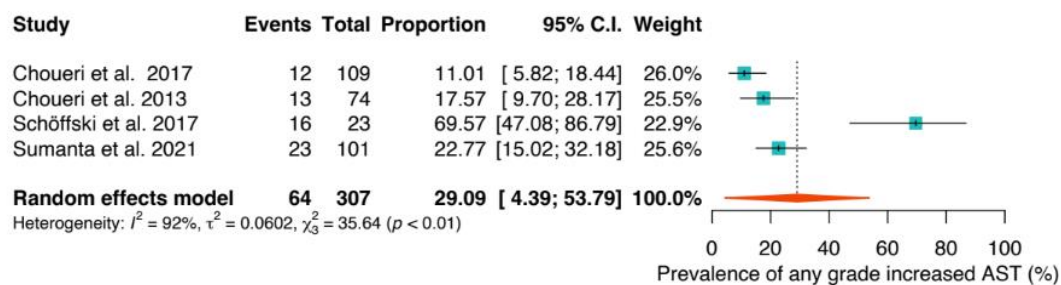
H. Diarrhea



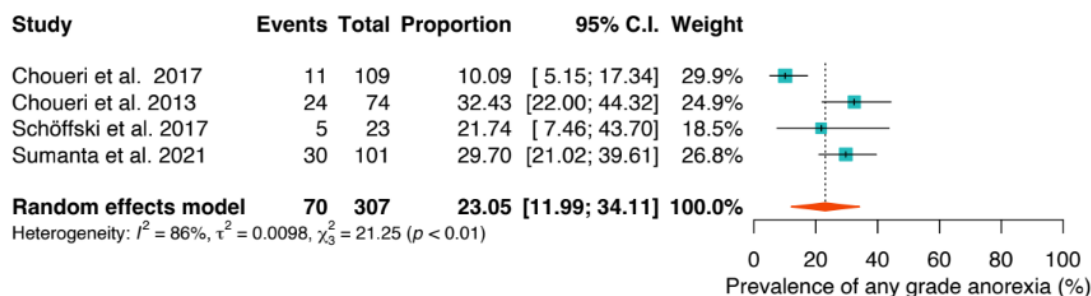
I. Increased creatinine



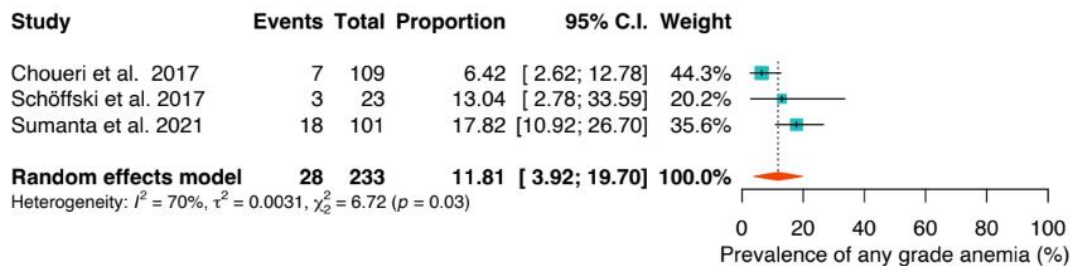
J. Increased AST



K. Anorexia



L. Anemia



M. Increased ALT

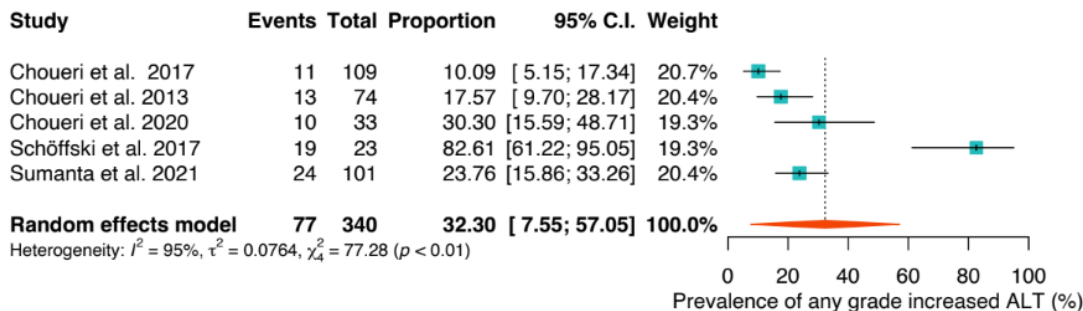
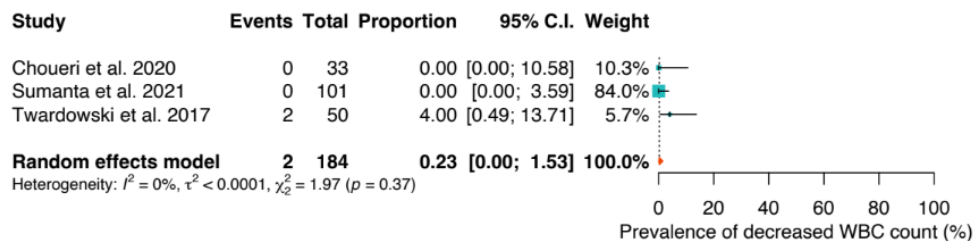
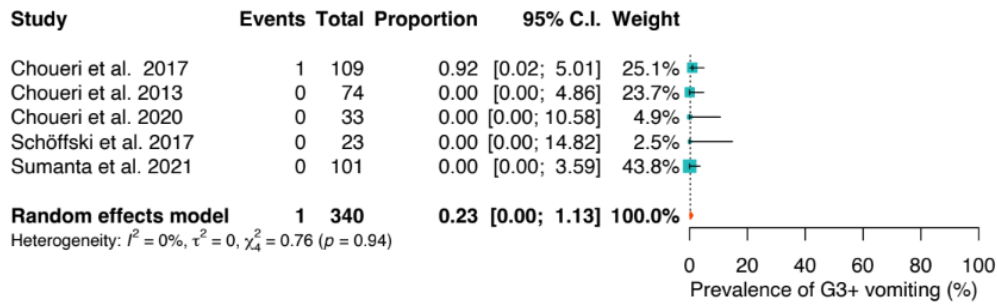


Figure S12. Grade ≥ 3 adverse events. **A.** Decreased WBC. **B.** Vomiting. **C.** Rash. **D.** Proteinuria. **E.** Decreased neutrophil Count. **F.** Nausea. **G.** Mucositis. **H.** Hyponatremia. **I.** Hypoalbuminemia. **J.** Hypertension. **K.** Fatigue. **L.** Extremity pain. **M.** Edema **N.** Dyspnea. **O.** Diarrhea. **P.** Increased creatinine. **Q.** Increased AST. **R.** Anorexia. **S.** Anemia. **T.** Increased ALT. **U.** Abdominal pain. Datas were sourced from reference [2,4–6].

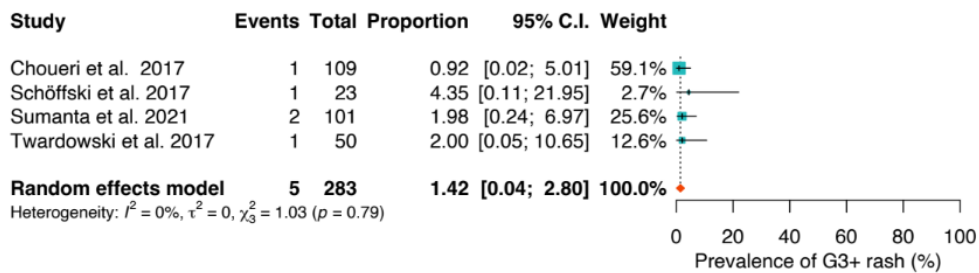
A. Decreased WBC



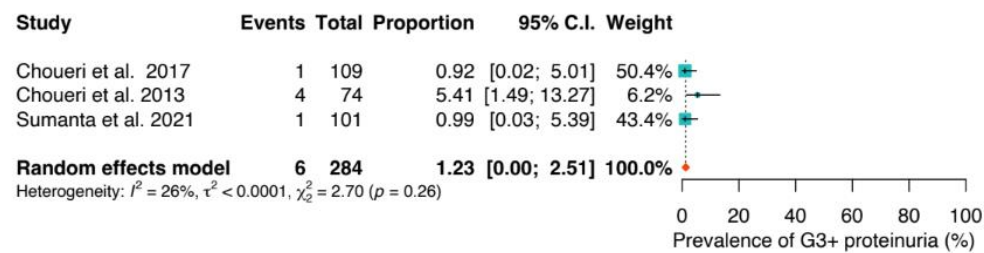
B. Vomiting



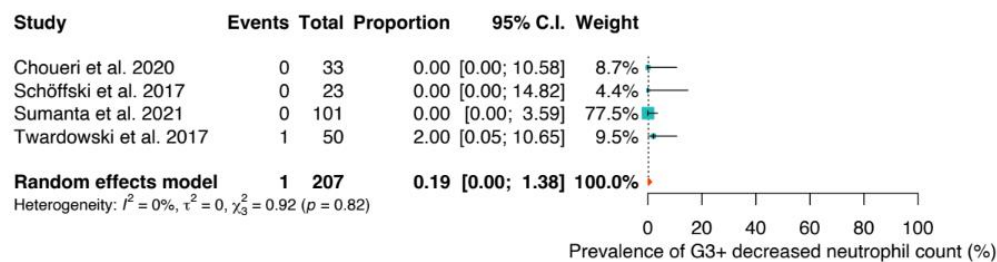
C. Rash



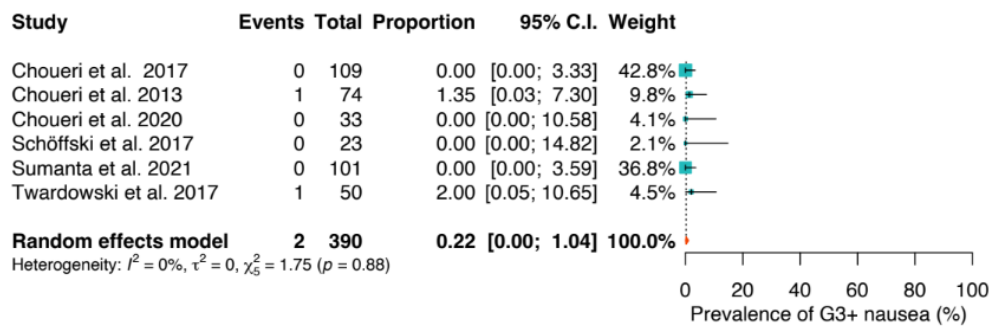
D. Proteinuria



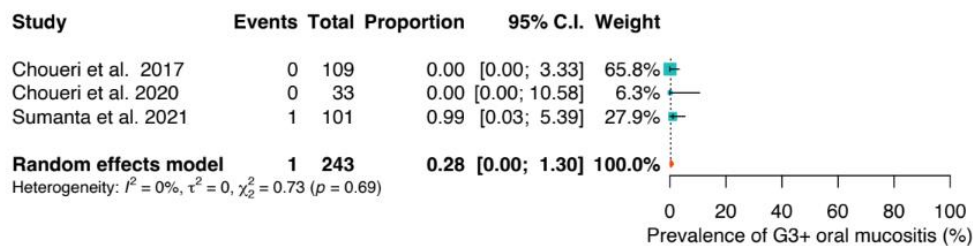
E. Decreased neutrophil count



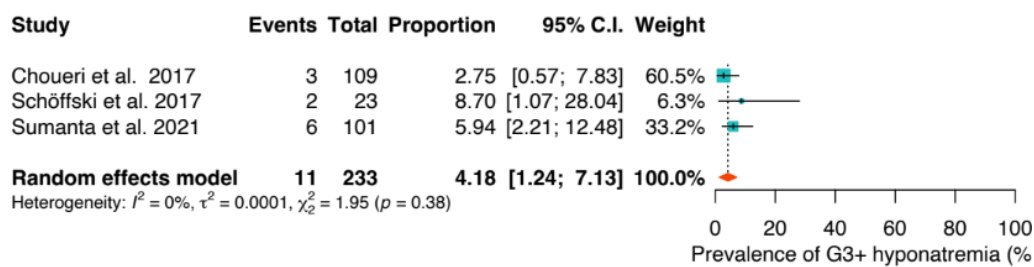
F. Nausea



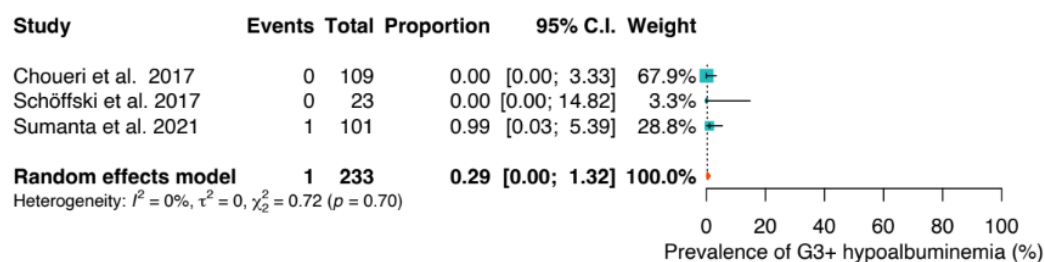
G. Mucositis



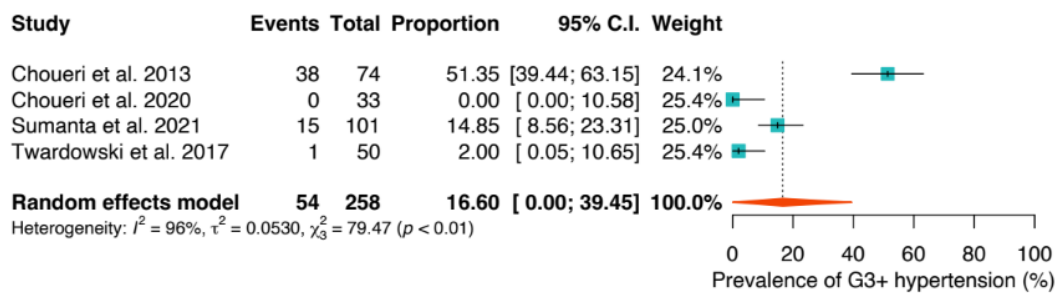
H. Hyponatremia



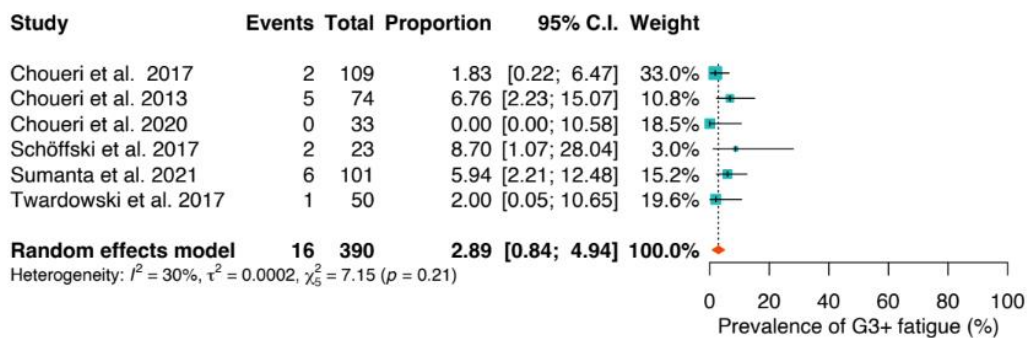
I. Hypoalbuminemia



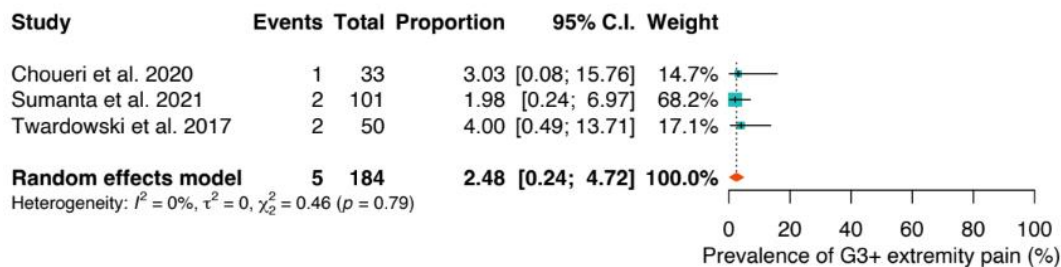
J. Hypertension



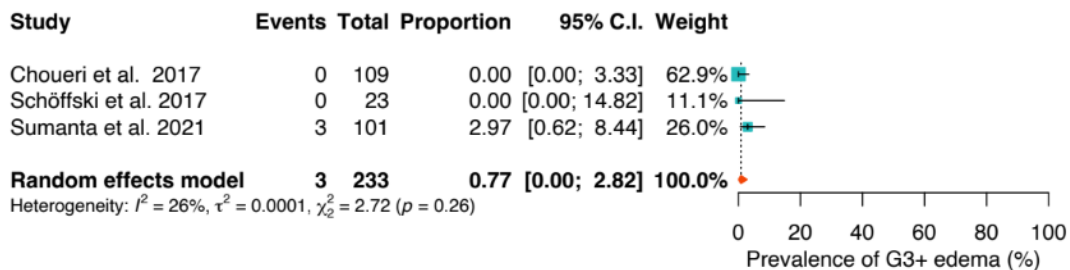
K. Fatigue



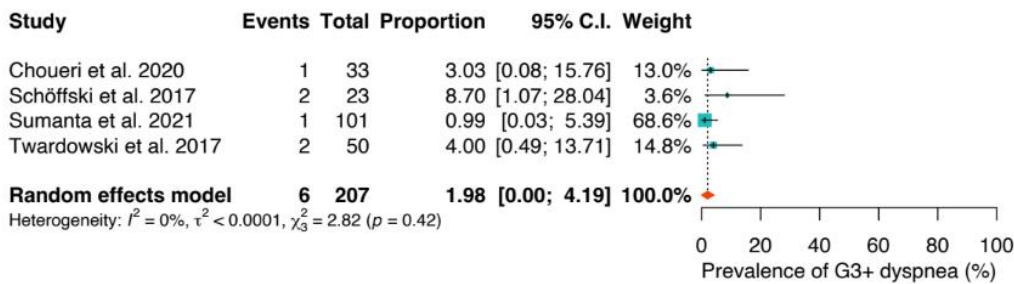
L. Extremity pain



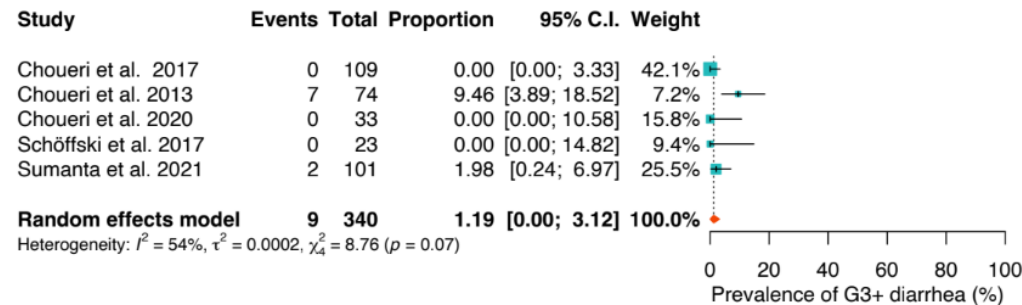
M. Edema



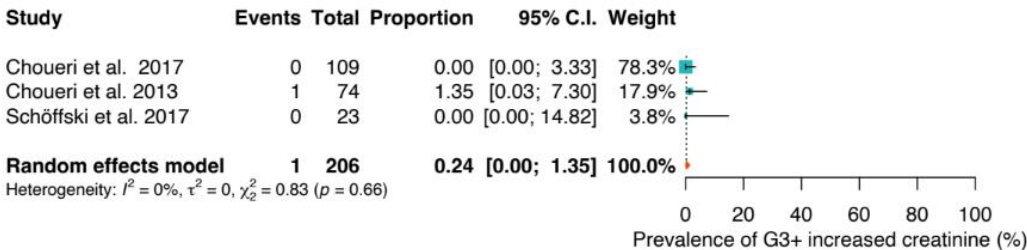
N. Dyspnea



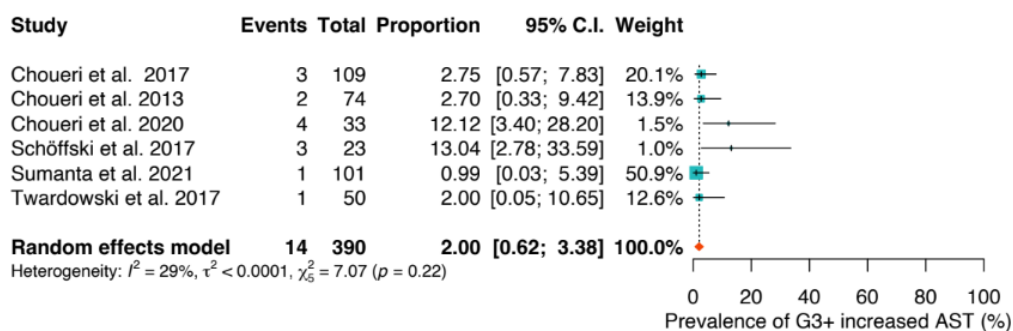
O. Diarrhea



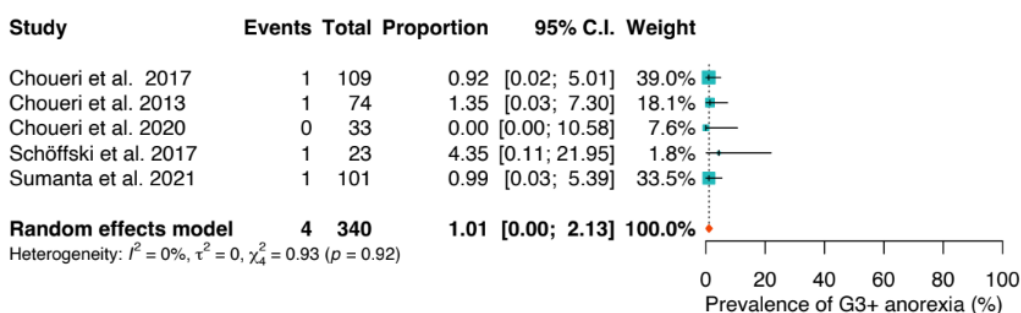
P. Increased creatinine



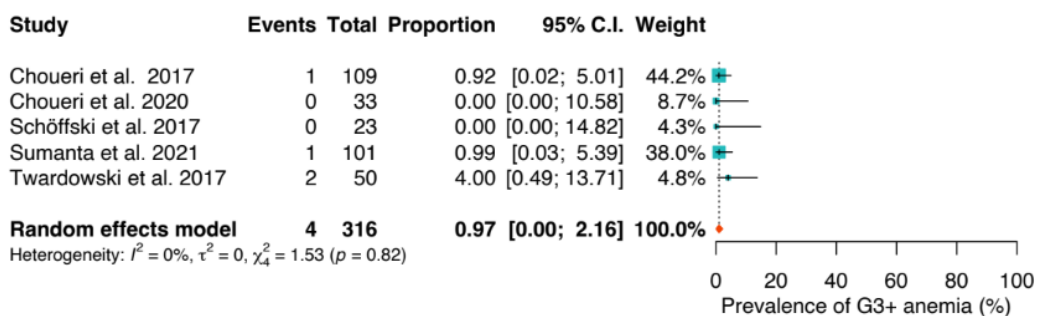
Q. Increased AST



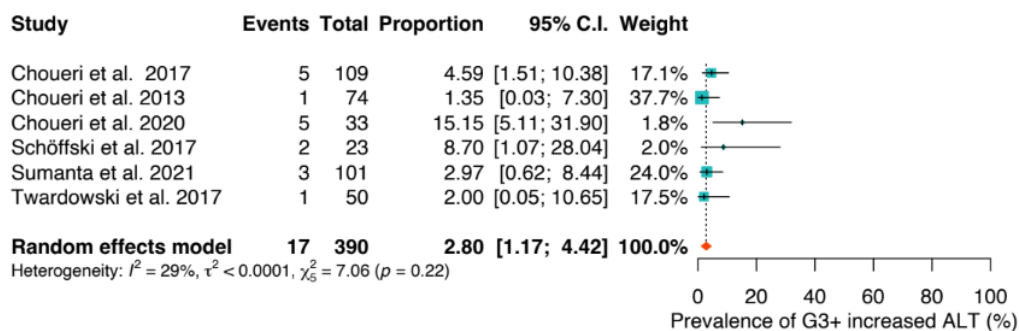
R. Anorexia



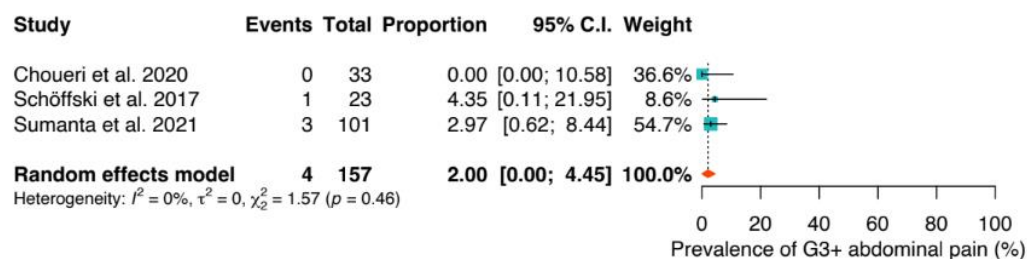
S. Anemia



T. Increased ALT



U. Abdominal pain



Reference

1. Twardowski, P.W.; Tangen, C.M.; Wu, X.; Plets, M.R.; Plimack, E.R.; Agarwal, N.; Vogelzang, N.J.; Wang, J.; Tao, S.; Thompson, I.M.; et al. Parallel (Randomized) Phase II Evaluation of Tivantinib (ARQ197) and Tivantinib in Combination with Erlotinib in Papillary Renal Cell Carcinoma: SWOG S1107. *Kidney Cancer* **2017**, *1*, 123–132. <https://doi.org/10.3233/KCA-170018>.
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