

Supplemental Data

Table S1: Eligibility criteria

Inclusion criteria	Exclusion criteria
Cohort or cross-sectional observational studies with ≥ 10 patients with hematologic malignancy	Case reports and case series
Studies reporting survival outcomes specific to patients with hematologic malignancy and COVID-19	Conference proceedings
Studies published since 2019	

Table S2.1 Database-specific search strategy for Pubmed

Malignancy term	Keywords searched for in abstract and title	(cancer OR malignancy OR malignancies OR “bone marrow failure” OR myelodysplastic OR leukemia OR leukaemia OR lymphoma OR myeloma OR “plasma cell” OR myeloproliferative OR hematologic OR haematologic) OR
	MeSH headings	(neoplasms[MeSH Terms]) AND
Exposure	Keywords searched for in abstract and title	(2019 novel coronavirus OR COVID19 OR COVID-19 OR SARS-CoV-2 OR 2019-nCoV OR coronavirus disease 2019 OR coronavirus disease-19) OR
	MeSH headings	None available for COVID-19 AND
Outcome	Keywords searched for in abstract and title	(hospitalization OR outcomes OR mortality OR survival) OR
	MeSH headings	(hospitalization[MeSH Terms]) OR (Outcome Assessment, Health Care[Mesh Terms]) OR (survival[MeSH Terms])
Additional limits		Limit to publications since 2019 Limit to English and Chinese language only

Table S2.2 Database-specific search strategy for EMBASE

Malignancy term	Keywords searched for in abstract and title	(malignancy.mp. OR malignancies.mp. OR cancer.mp. OR lymphoma.mp. OR leukemia.mp. OR leukaemia.mp. OR myeloma.mp. OR myeloproliferative.mp. OR hematologic.mp. OR haematologic.mp.) OR
	Subject headings	(exp neoplasm/ OR exp malignant neoplasm/ OR exp hematologic malignancy/ OR exp lymphoma/ OR exp acute lymphoblastic leukemia/ OR exp acute myeloid leukemia/ OR exp acute leukemia/ OR exp leukemia/ OR exp myeloma/ OR exp multiple myeloma/ OR exp myeloproliferative disorder/ OR exp myeloproliferative neoplasm/) AND
Exposure	Keywords searched for in abstract and title	(2019 novel coronavirus.mp. OR COVID19.mp. OR COVID-19.mp. OR SARS-CoV-2.mp. OR 2019-nCoV.mp. OR coronavirus disease 2019.mp. OR coronavirus disease-19.mp.) OR
	Subject headings	(exp coronavirus infection/ OR exp Coronavirus/ OR exp SARS coronavirus/) AND
Outcome	Keywords searched for in abstract and title	(hospitalization.mp. OR outcomes.mp. OR outcome.mp OR survival.mp. OR mortality.mp.) OR
	Subject headings	(exp hospitalization/ OR exp outcomes research/ OR exp mortality/ OR exp survival/)
Additional limits		Limit to publications since 2019 Limit to English and Chinese language only

Table S3: Joanna Briggs Institute Critical Appraisal Checklist for Studies Reporting Prevalence Data

Question	Potential responses			
1. Was the sample frame appropriate to address the target population?	Yes	No	Unclear	Not applicable
2. Were study participants sampled in an appropriate way?	Yes	No	Unclear	Not applicable
3. Was the sample size adequate? – at least 17 participants	Yes	No	Unclear	Not applicable
4. Were the study subjects and the setting described in detail?	Yes	No	Unclear	Not applicable
5. Was the data analysis conducted with sufficient coverage of the identified sample?	Yes	No	Unclear	Not applicable
6. Were valid methods used for the identification of the condition?	Yes	No	Unclear	Not applicable
7. Was the condition measured in a standard, reliable way for all participants?	Yes	No	Unclear	Not applicable
8. Was there appropriate statistical analysis?	Yes	No	Unclear	Not applicable
9. Was the response rate adequate, and if not, was the low response rate managed appropriately?	Yes	No	Unclear	Not applicable

Table S4: Risk of bias assessments

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total score	Low risk of bias
Aries 2020 ¹³	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	No	Yes	7	✓
Biernat 2020 ⁵⁰	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	7	✓
Booth 2020 ¹⁴	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	No	No	6	✓
Cook 2020 ¹⁵	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Unclear	7	✓
Dufour 2020 ¹⁶	Yes	No	Yes	Yes	Yes	Unclear	Yes	No	Unclear	5	
Engelhardt 2020 ⁵²	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	No	Unclear	6	✓
Fattizzo 2020 ¹⁷	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Unclear	6	✓
Ferrara 2020 ¹⁸	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	6	✓
Fox 2020 ¹⁹	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	No	No	6	✓
Hé 2020 ²⁰	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	6	✓
Hultcrantz 2020 ²¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Unclear	7	✓
Infante 2020 ⁵³	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	No	Unclear	6	✓
Kuderer 2020 ²²	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	6	✓
Lattenist 2020 ²³	Yes	Yes	No	Yes	Yes	Unclear	Yes	No	Unclear	5	
Lee 2020 ²⁴	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	8	✓
Malard 2020 ²⁵	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Unclear	7	✓
Martin-Moro 2020 ²⁶	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear	No	No	5	
Mato 2020 ²⁷	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	No	No	6	✓
Mehta 2020 ²⁸	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Unclear	7	✓
Mei 2020 ²⁹	Unclear	Unclear	No	No	Yes	Unclear	Unclear	No	Unclear	1	
Passamonti 2020 ⁵⁴	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	7	✓
Patell 2020 ³⁰	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	8	✓
Razanamahery 2020 ³¹	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear	No	Unclear	5	
Rugge 2020 ⁵⁵	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Unclear	6	✓
Russell 2020 ⁵⁶	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Unclear	6	✓
Sanchez-Pina 2020 ⁵⁷	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	7	✓
Scarfó 2020 ³²	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	6	✓
Shah 2020 ³³	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	8	✓
Tian 2020 ³⁴	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Unclear	6	✓
Varma 2020 ⁵⁸	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Unclear	6	✓
Wang 2020 ³⁵	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	No	Yes	7	✓
Yang 2020 ³⁶	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	8	✓
Yigenoglu 2020 ⁴²	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Unclear	7	✓
ASH registry 2020 ³⁷	Yes	No	Yes	No	No	Unclear	Unclear	No	No	2	

Figure 1a: Doi plot and LFK index assessing publication bias in all included studies

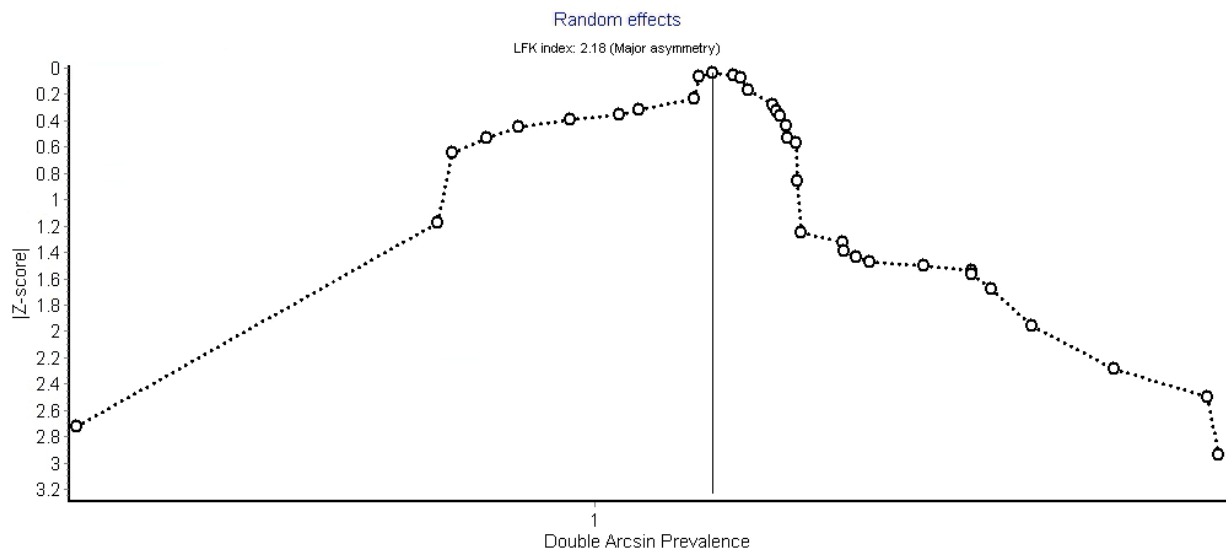


Figure 1b: Doi plot and LFK index assessing publication bias in all included studies, excluding population-based study (Yigenoglu. J Med Virol. 2020)

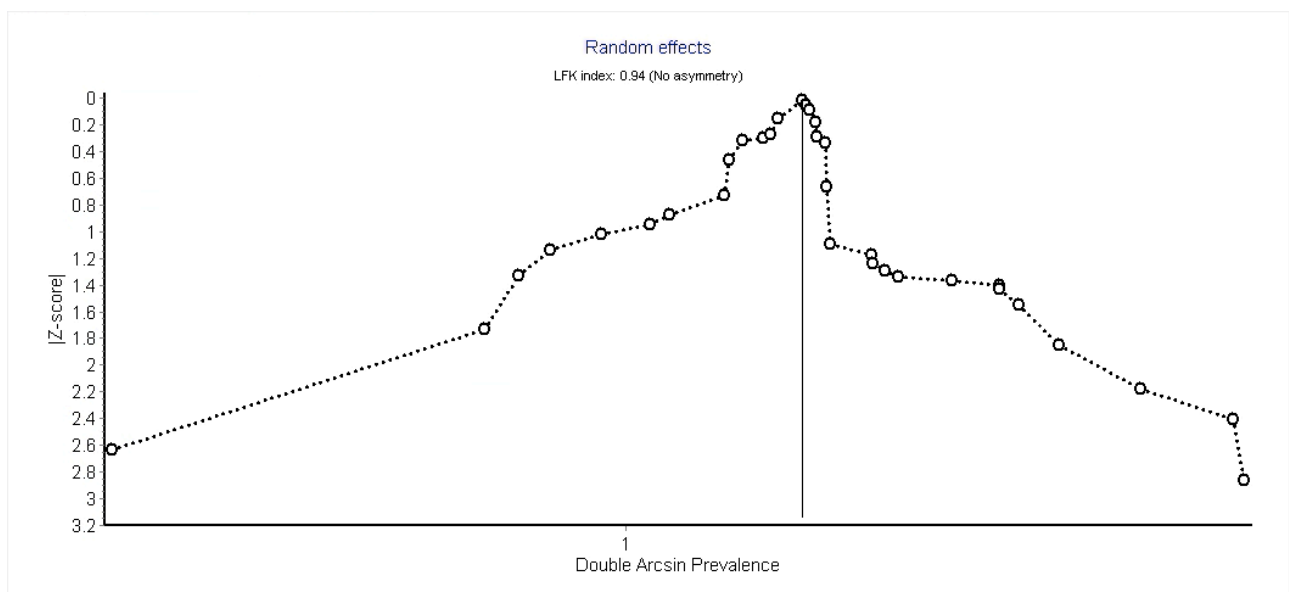


Figure 2a: Risk of ICU admission amongst hospitalized patients with hematologic malignancy

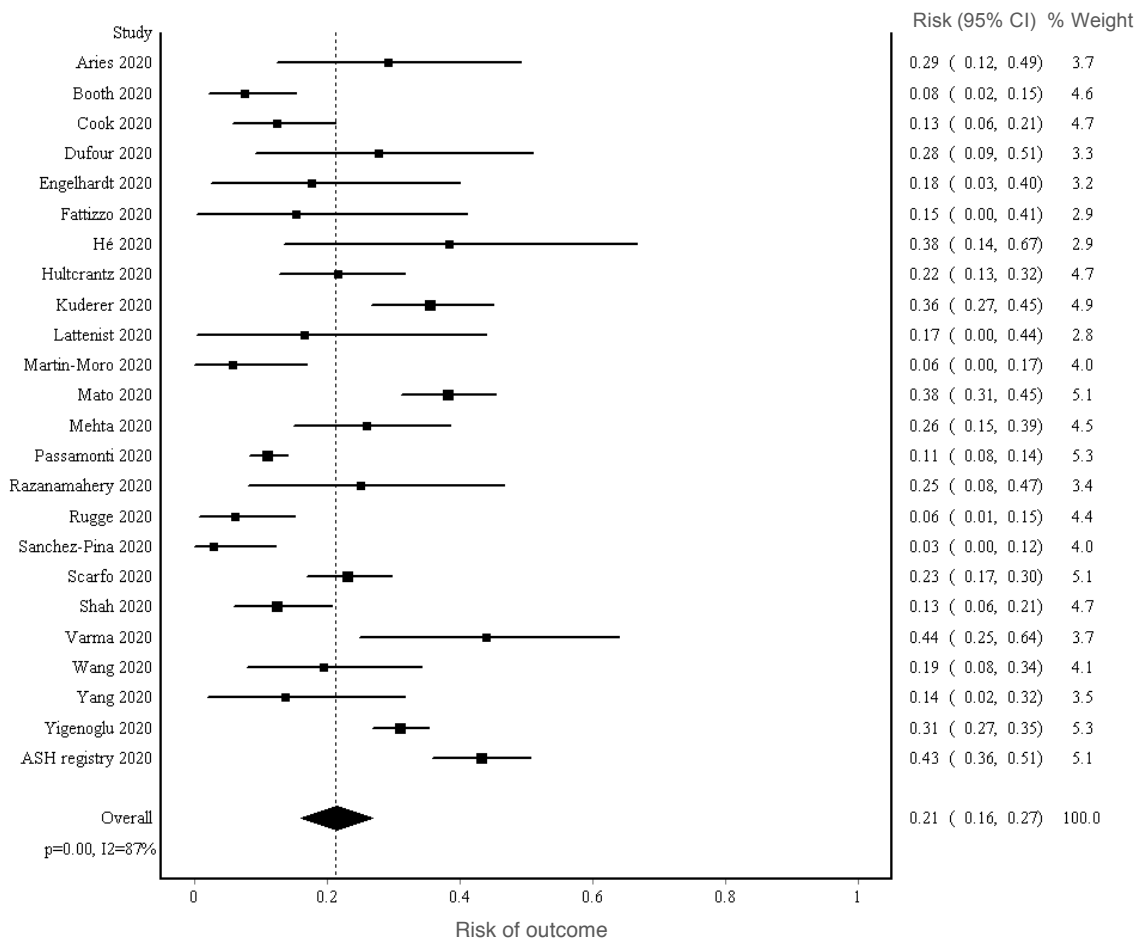


Figure 2b: Risk of mechanical ventilation amongst hospitalized patients with hematologic malignancy

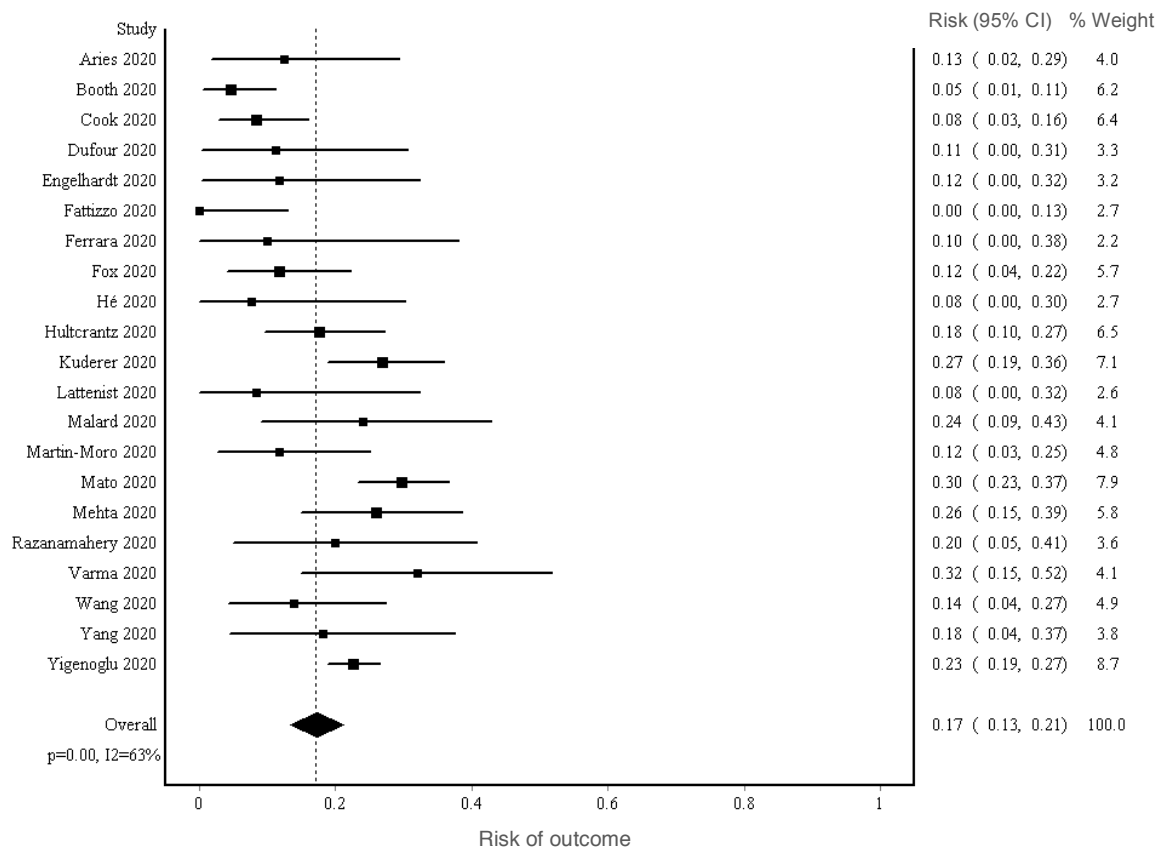


Figure 2c: Risk of non-invasive ventilation amongst hospitalized patients with hematologic malignancy

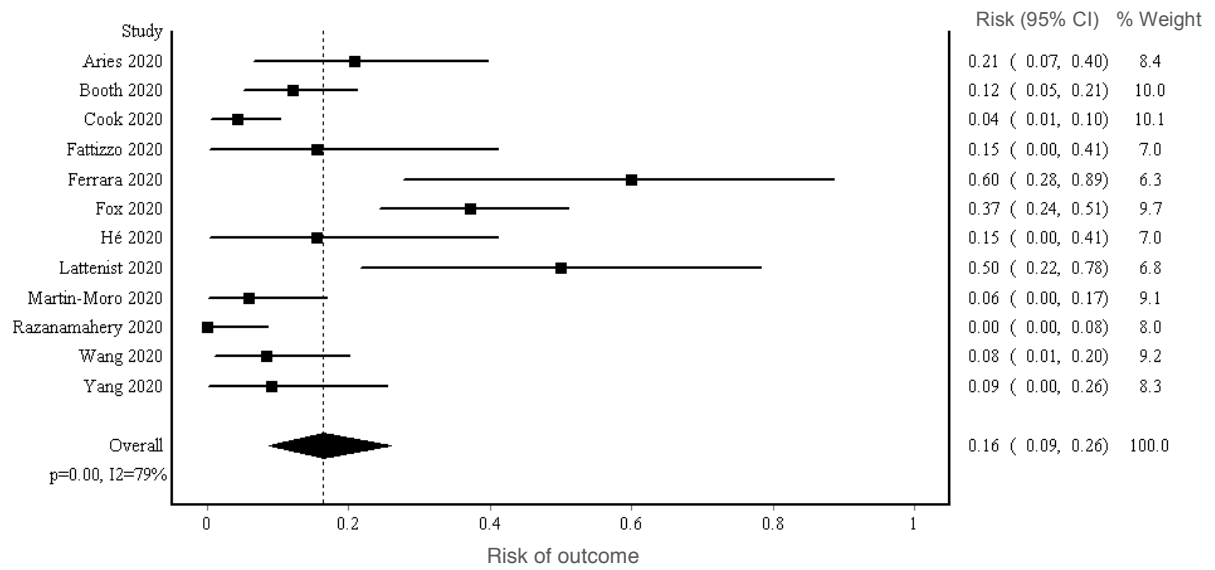


Figure 3: Risk ratio of death in non-White patients compared to White patients

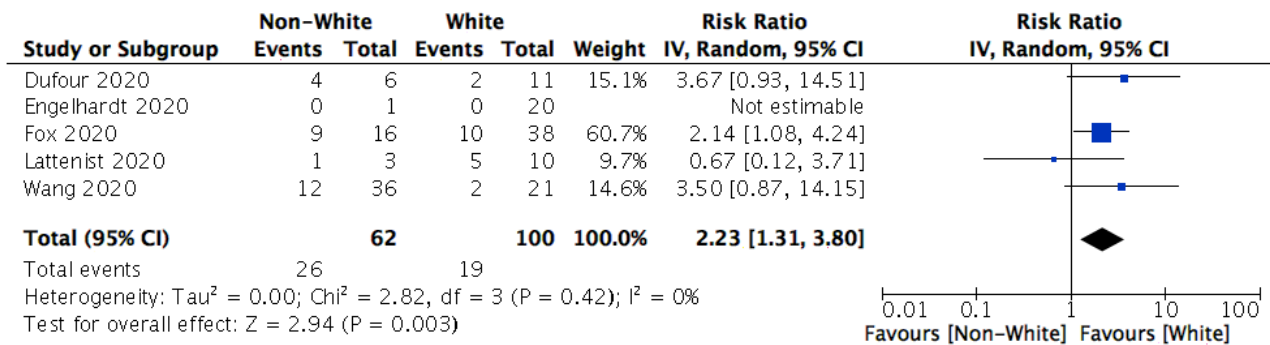


Figure 4a: Risk of death in patients with acquired bone marrow failure

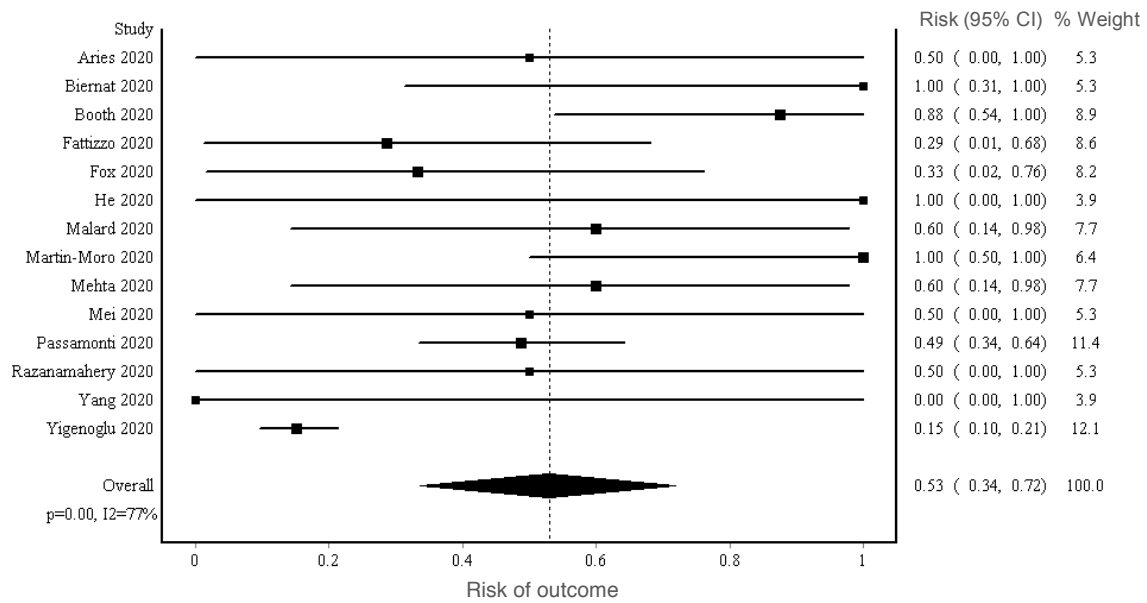


Figure 4b: Risk of death in patients with acute leukemias

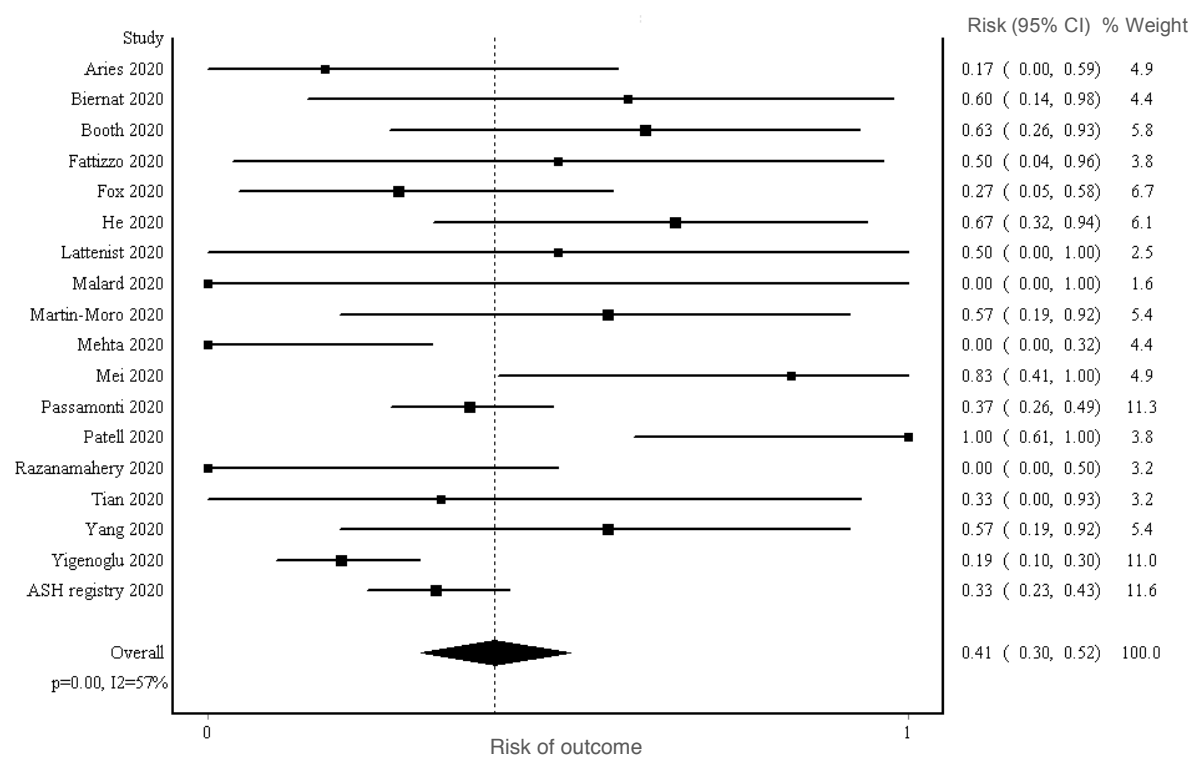


Figure 4c: Risk of death in patients with plasma cell neoplasms

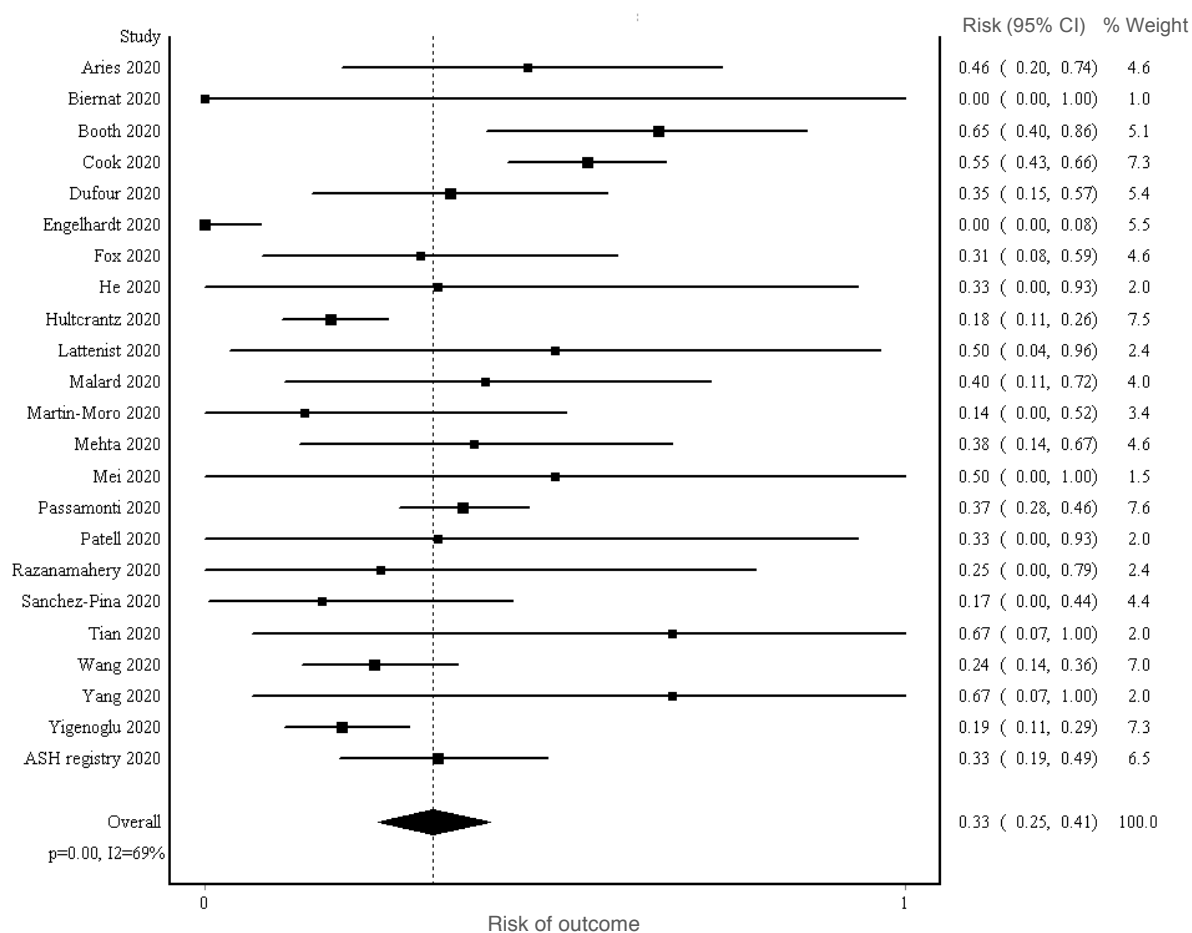


Figure 4d: Risk of death in patients with lymphomas including chronic lymphocytic leukemia

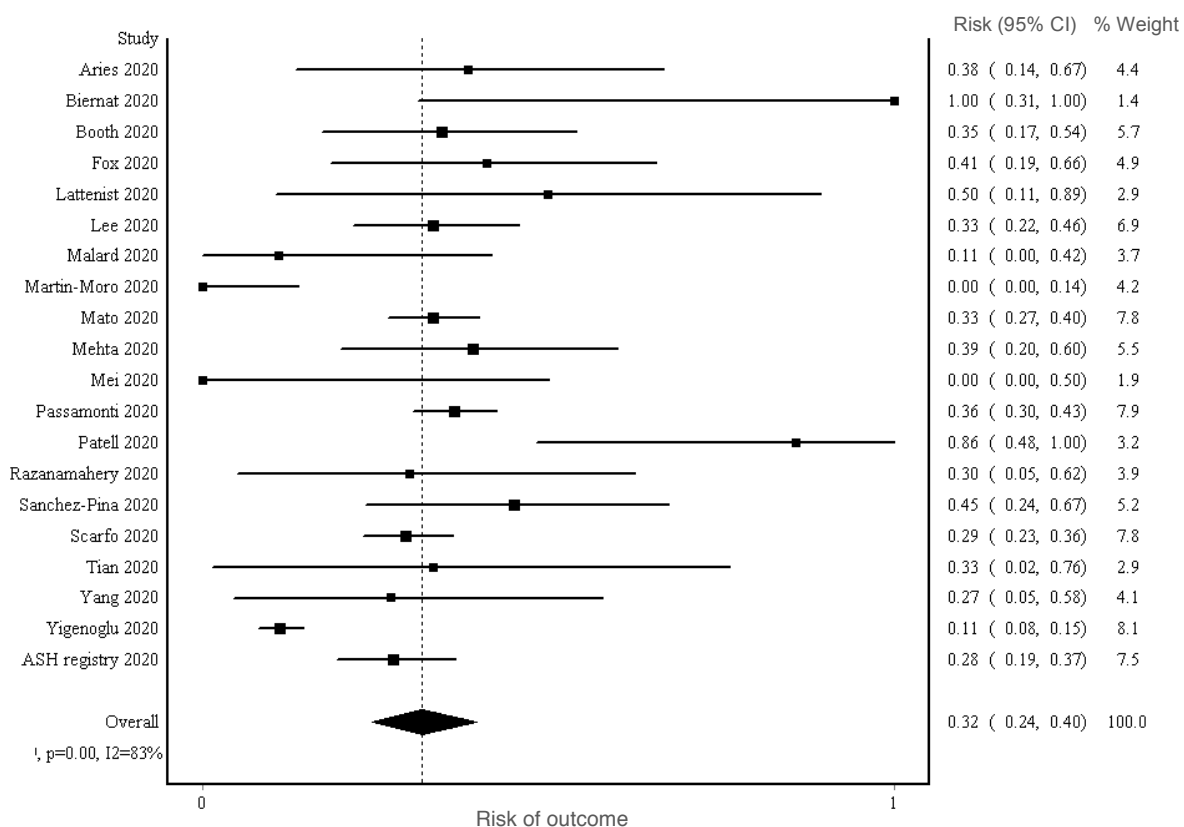


Figure 4e: Risk of death in patients with lymphomas excluding chronic lymphocytic leukemia

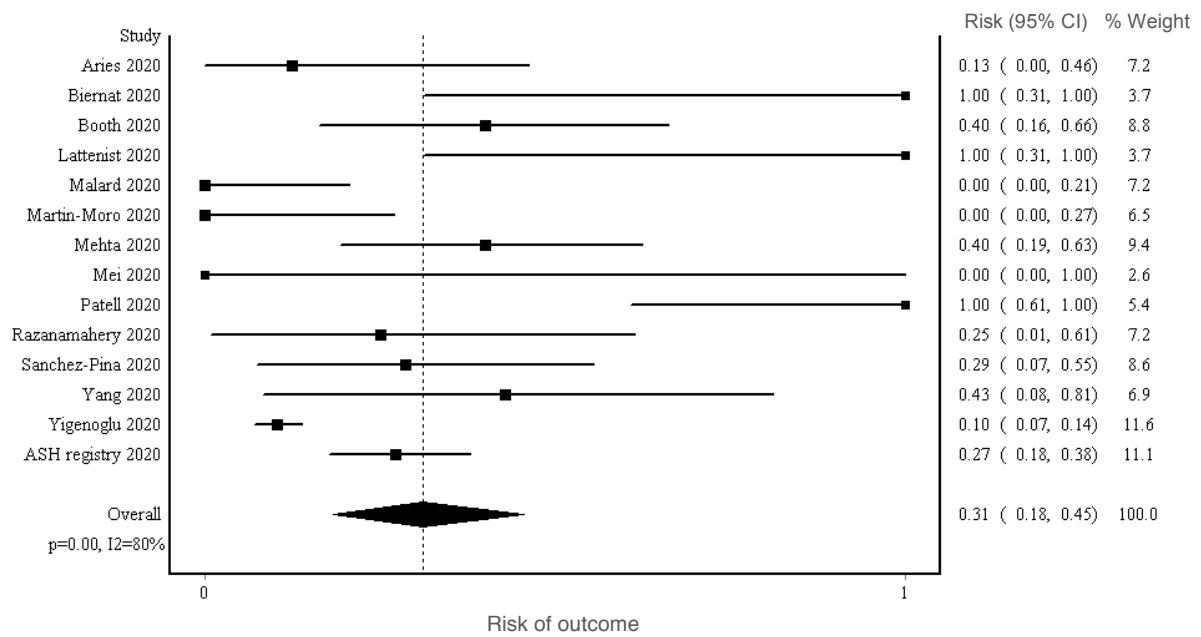


Figure 4f: Risk of death in patients with chronic lymphocytic leukemia

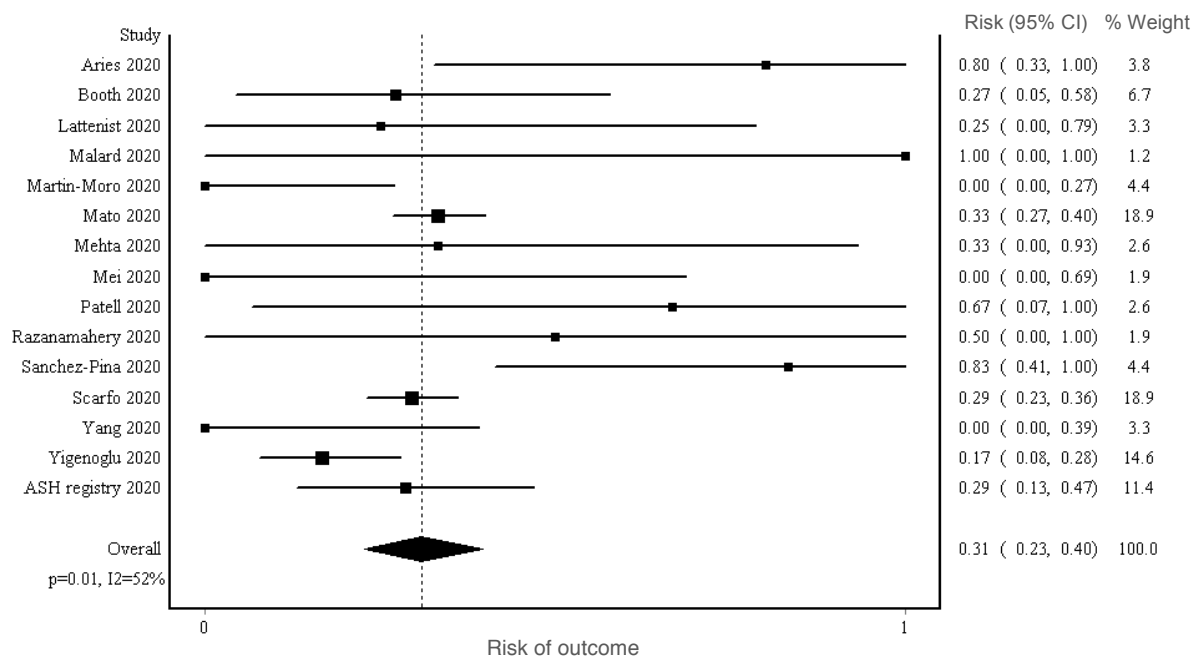


Figure 4g: Risk of death in patients with myeloproliferative neoplasms

