Supplementary materials

Table S1. Search strategies.

Databases	Search strategies
PubMed	(Ten-Eleven Translocation 2[Title/Abstract] OR TET2[Title/Abstract]) AND (myeloproliferative[Title/Abstract] OR vera[Title/Abstract] OR thrombocythemia[Title/Abstract] OR thrombocytosis [Title/Abstract] OR myelofibrosis[Title/Abstract])
ScienceDirect	("Ten-Eleven Translocation 2" OR TET2) AND (myeloproliferative OR vera OR thrombocythemia OR thrombocytosis OR myelofibrosis)
Embase	('Ten-Eleven Translocation 2':ti OR TET2:ti) AND (myeloproliferative:ti OR vera:ti OR thrombocythemia:ti OR thrombocytosis:ti OR myelofibrosis:ti)
Scopus	TITLE-ABS("Ten-Eleven Translocation 2" OR TET2) AND TITLE-ABS(myeloproliferative OR vera OR thrombocythemia OR thrombocytosis OR myelofibrosis)
Web of Science	TI=("Ten-Eleven Translocation 2" OR TET2) AND TI=(myeloproliferative OR vera OR thrombocythemia OR thrombocytosis OR myelofibrosis)
Google Scholar	allintitle: myeloproliferative TET2 allintitle: myeloproliferative Ten-Eleven Translocation 2 allintitle: MPN TET2 allintitle: vera TET2 allintitle: thrombocythemia TET2 allintitle: thrombocytosis TET2 allintitle:myelofibrosis TET2

Table S2. Quality assessment of the included cross-sectional studies.

No.	Study ID	Questions assessing included cross-sectional studies								Yes
		1	2	3	4	5	6	7	8	(%)
1	Andreasson 2020 [1]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
2	Barraco 2017 [2]	Y	Y	N	Y	Y	Y	N	Y	75.0
3	Brecqueville 2012 [3]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
4	Brecqueville 2014 [4]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
5	Carbuccia 2009 [5]	N	N	Y	Y	N	N	Y	N	37.5
6	Cerquozzi 2017 [6]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
7	Delhommeau 2009 [7]	Y	Y	Y	Y	N	N	Y	N	62.5
8	Delic 2016 [8]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
9	Gill 2018 [9]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
10	Guglielmelli 2011 [10]	Y	Y	N	Y	Y	Y	Y	Y	87.5
11	Ha 2014 [11]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
12	Huang 2020 [12]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
13	Hussein 2010 [13]	Y	N	Y	Y	Y	N	Y	N	62.5
14	Kröger 2017 [14]	N	Y	Y	N	Y	Y	Y	Y	75.0
15	Leibundgut 2020 [15]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
16	Magor 2016 [16]	Y	Y	Y	Y	N	N	Y	N	62.5
17	Martínez-Avilés 2012 [17]	Y	Y	Y	Y	N	N	Y	N	62.5

18	Nischal 2013 [18]	N	N	Y	Y	N	N	Y	N	37.5
19	O'Sullivan 2019 [19]	N	N	Y	Y	Y	Y	Y	Y	75.0
20	Pardanani 2010 [20]	Y	Y	Y	Y	N	N	Y	N	62.5
21	Patel 2015 [21]	N	N	Y	Y	Y	Y	Y	Y	75.0
22	Patriarca 2013 [22]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
23	Saint-Martin 2009 [23]	Y	N	Y	Y	Y	Y	Y	Y	87.5
24	Schlenk 2016 [24]	Y	Y	N	Y	Y	Y	Y	Y	87.5
25	Schnittger 2012 [25]	N	N	Y	N	N	N	Y	N	25.0
26	Segura-Díaz 2020 [26]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
27	Song 2017 [27]	Y	N	Y	Y	N	N	Y	N	50.0
28	Tefferi 2009 [28]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
29	Tefferi 2010 [29]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
30	Tefferi 2016 [30]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
31	Tefferi 2016a [31]	Y	Y	Y	Y	Y	Y	Y	Y	100.0
32	Verger 2014 [32]	N	N	Y	N	N	N	Y	N	25.0
33	Zhang 2015 [33]	Y	Y	Y	Y	Y	Y	Y	Y	100.0

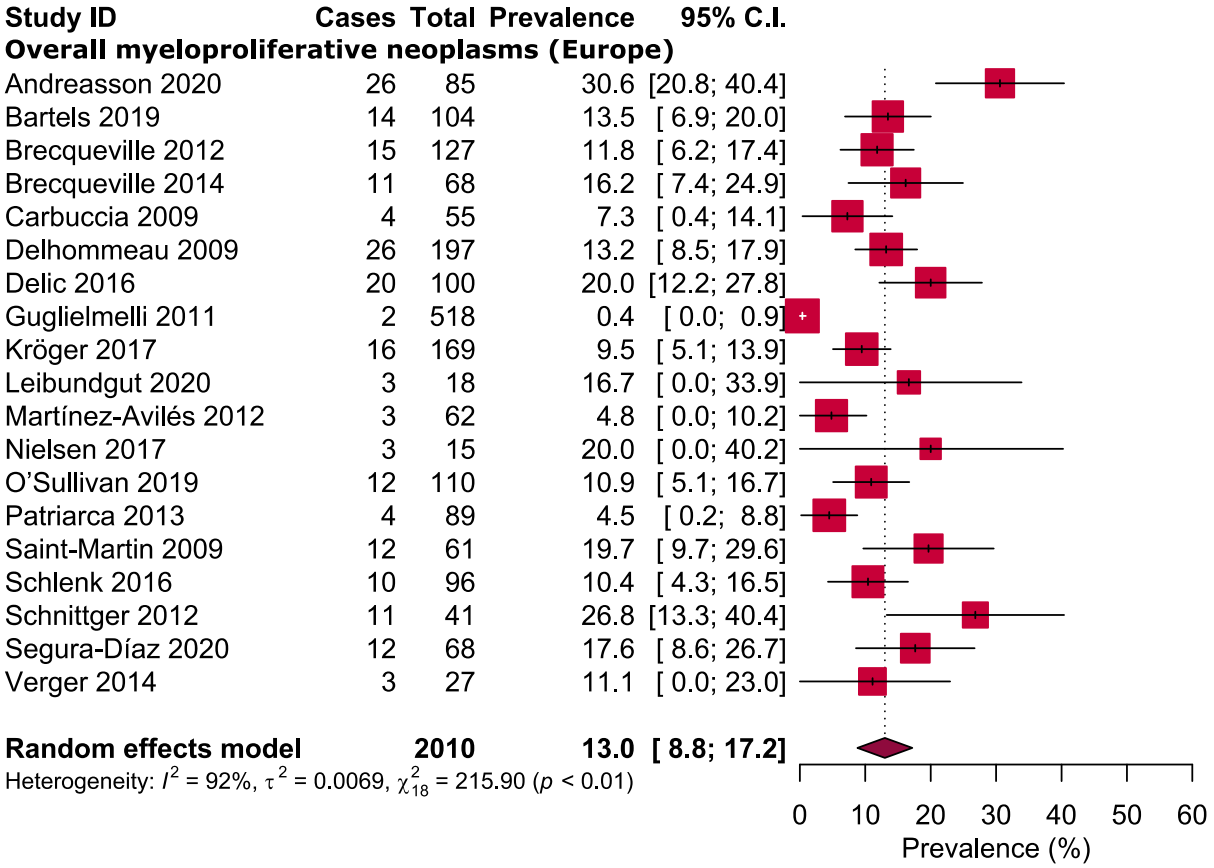
1. Were the criteria for inclusion in the sample clearly defined? 2. Were the study subjects and the setting described in detail? 3. Was the exposure measured in a valid and reliable way? 4. Were objective, standard criteria used for measurement of the condition? 5. Were confounding factors identified? 6. Were strategies to deal with confounding factors stated? 7. Were the outcomes measured in a valid and reliable way? 8. Was appropriate statistical analysis used? Y=Yes; N=No; U=Unclear

Table S3. Quality assessment of the included case-control studies.

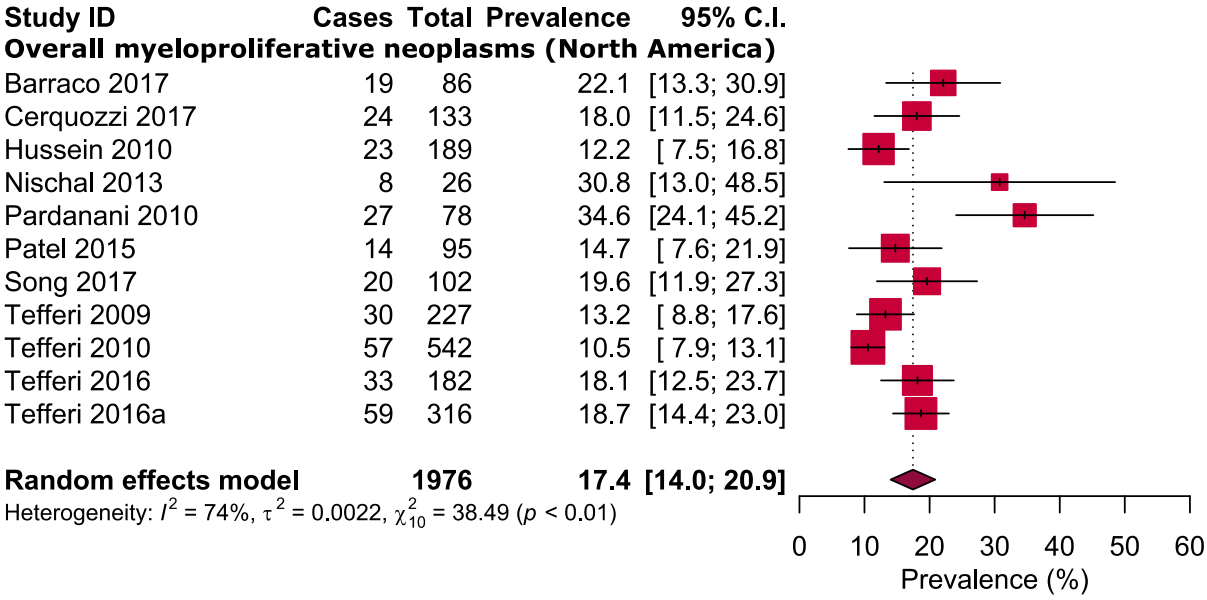
No.	**Study ID**	**Questions assessing included case-control studies**										**Yes**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**(%)**
1	Bartels 2019 [34]	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	90.0
2	Nielsen 2017 [35]	N	N	N	Y	Y	N	N	Y	Y	N	40.0

1. Were the groups comparable other than the presence of disease in caseNs or the absence of disease in controls? 2. Were cases and controls matched appropriately? 3. Were the same criteria used for identification of cases and controls? 4. Was exposure measured in a standard, valid and reliable way? 5. Was exposure measured in the same way for cases and controls? 6. Were confounding factors identified? 7. Were strategies to deal with confounding factors stated? 8. Were outcomes assessed in a standard, valid and reliable way for cases and controls? 9. Was the exposure period of interest long enough to be meaningful? 10. Was appropriate statistical analysis used? Y=Yes; N=No; U=Unclear

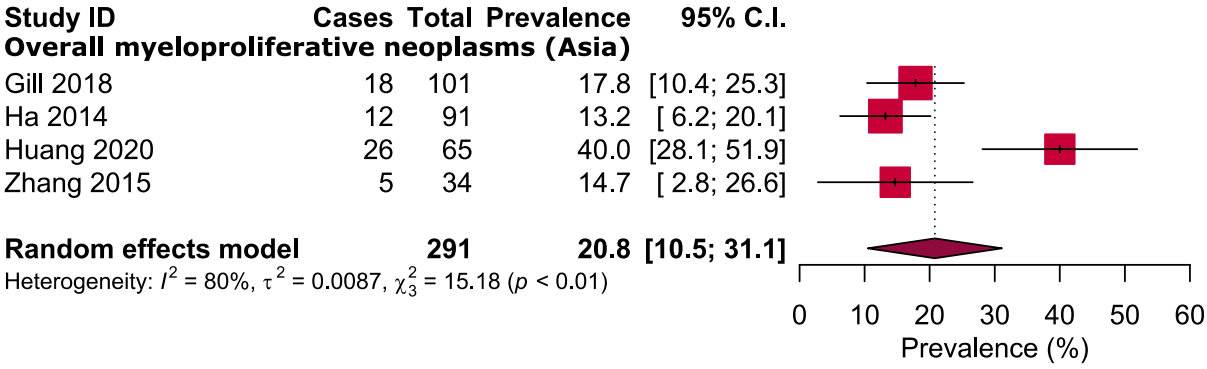
A


Study ID
Cases
Total
Prevalence
95% C.I.
Overall myeloproliferative neoplasms (Europe)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Bartels 2019 14 104 13.5 [6.9; 20.0]
Brecqueville 2012 15 127 11.8 [6.2; 17.4]
Brecqueville 2014 11 68 16.2 [7.4; 24.9]
Carbuccia 2009 4 55 7.3 [0.4; 14.1]
Delhommeau 2009 26 197 13.2 [8.5; 17.9]
Delic 2016 20 100 20.0 [12.2; 27.8]
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Kröger 2017 16 169 9.5 [5.1; 13.9]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
Martínez-Avilés 2012 3 62 4.8 [0.0; 10.2]
Nielsen 2017 3 15 20.0 [0.0; 40.2]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Patriarca 2013 4 89 4.5 [0.2; 8.8]
Saint-Martin 2009 12 61 19.7 [9.7; 29.6]
Schlenk 2016 10 96 10.4 [4.3; 16.5]
Schnittger 2012 11 41 26.8 [13.3; 40.4]
Segura-Díaz 2020 12 68 17.6 [8.6; 26.7]
Verger 2014 3 27 11.1 [0.0; 23.0]
Random effects model 2010 13.0 [8.8; 17.2]
Heterogeneity: I^2 = 92%, τ^2 = 0.0069, χ^2_{18} = 215.90 (p < 0.01)
0 10 20 30 40 50 60
Prevalence (%)

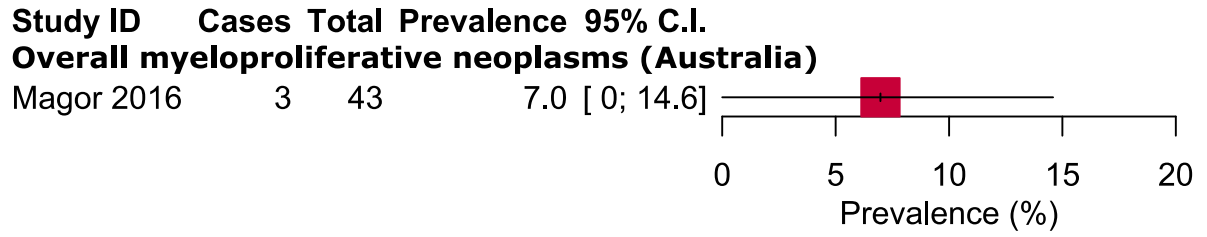
B


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (North America)
Barraco 2017 19 86 22.1 [13.3; 30.9]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Hussein 2010 23 189 12.2 [7.5; 16.8]
Nischal 2013 8 26 30.8 [13.0; 48.5]
Pardanani 2010 27 78 34.6 [24.1; 45.2]
Patel 2015 14 95 14.7 [7.6; 21.9]
Song 2017 20 102 19.6 [11.9; 27.3]
Tefferi 2009 30 227 13.2 [8.8; 17.6]
Tefferi 2010 57 542 10.5 [7.9; 13.1]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Tefferi 2016a 59 316 18.7 [14.4; 23.0]
Random effects model 1976 17.4 [14.0; 20.9]
Heterogeneity: I^2 = 74%, τ^2 = 0.0022, χ^2_{10} = 38.49 (p < 0.01)
0 10 20 30 40 50 60
Prevalence (%)

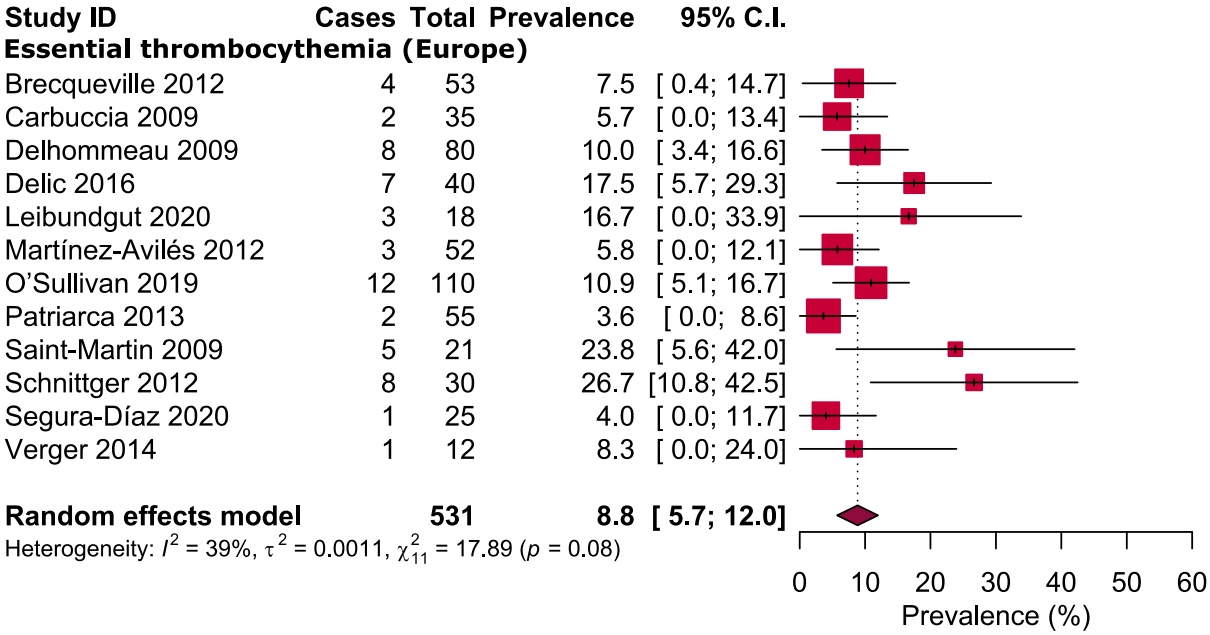
C


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (Asia)
Gill 2018 18 101 17.8 [10.4; 25.3]
Ha 2014 12 91 13.2 [6.2; 20.1]
Huang 2020 26 65 40.0 [28.1; 51.9]
Zhang 2015 5 34 14.7 [2.8; 26.6]
Random effects model 291 20.8 [10.5; 31.1]
Heterogeneity: I^2 = 80%, τ^2 = 0.0087, χ^2_3 = 15.18 (p < 0.01)
0 10 20 30 40 50 60
Prevalence (%)

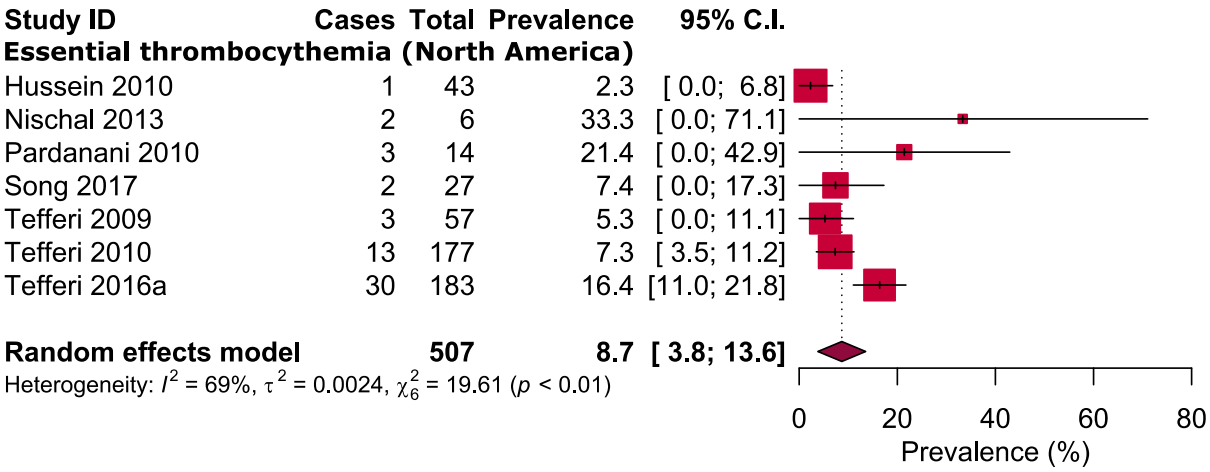
D


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (Australia)
Magor 2016 3 43 7.0 [0; 14.6]
0 5 10 15 20
Prevalence (%)

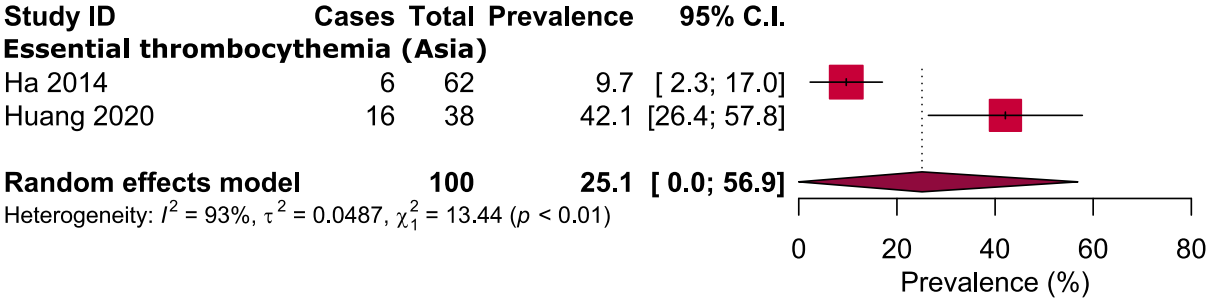
E


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (Europe)
Brecqueville 2012 4 53 7.5 [0.4; 14.7]
Carbuccia 2009 2 35 5.7 [0.0; 13.4]
Delhommeau 2009 8 80 10.0 [3.4; 16.6]
Delic 2016 7 40 17.5 [5.7; 29.3]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
Martínez-Avilés 2012 3 52 5.8 [0.0; 12.1]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Patriarca 2013 2 55 3.6 [0.0; 8.6]
Saint-Martin 2009 5 21 23.8 [5.6; 42.0]
Schnittger 2012 8 30 26.7 [10.8; 42.5]
Segura-Díaz 2020 1 25 4.0 [0.0; 11.7]
Verger 2014 1 12 8.3 [0.0; 24.0]
Random effects model 531 8.8 [5.7; 12.0]
Heterogeneity: I^2 = 39%, τ^2 = 0.0011, χ^2_{11} = 17.89 (p = 0.08)
0 10 20 30 40 50 60
Prevalence (%)

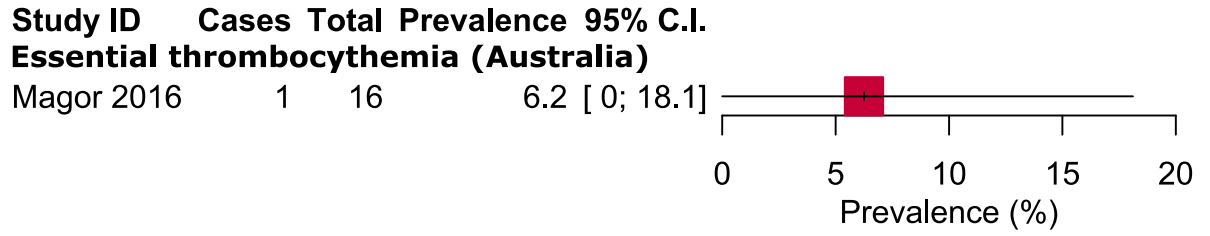
F


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (North America)
Hussein 2010 1 43 2.3 [0.0; 6.8]
Nischal 2013 2 6 33.3 [0.0; 71.1]
Pardanani 2010 3 14 21.4 [0.0; 42.9]
Song 2017 2 27 7.4 [0.0; 17.3]
Tefferi 2009 3 57 5.3 [0.0; 11.1]
Tefferi 2010 13 177 7.3 [3.5; 11.2]
Tefferi 2016a 30 183 16.4 [11.0; 21.8]
Random effects model 507 8.7 [3.8; 13.6]
Heterogeneity: I^2 = 69%, τ^2 = 0.0024, χ^2_6 = 19.61 (p < 0.01)
0 20 40 60 80
Prevalence (%)

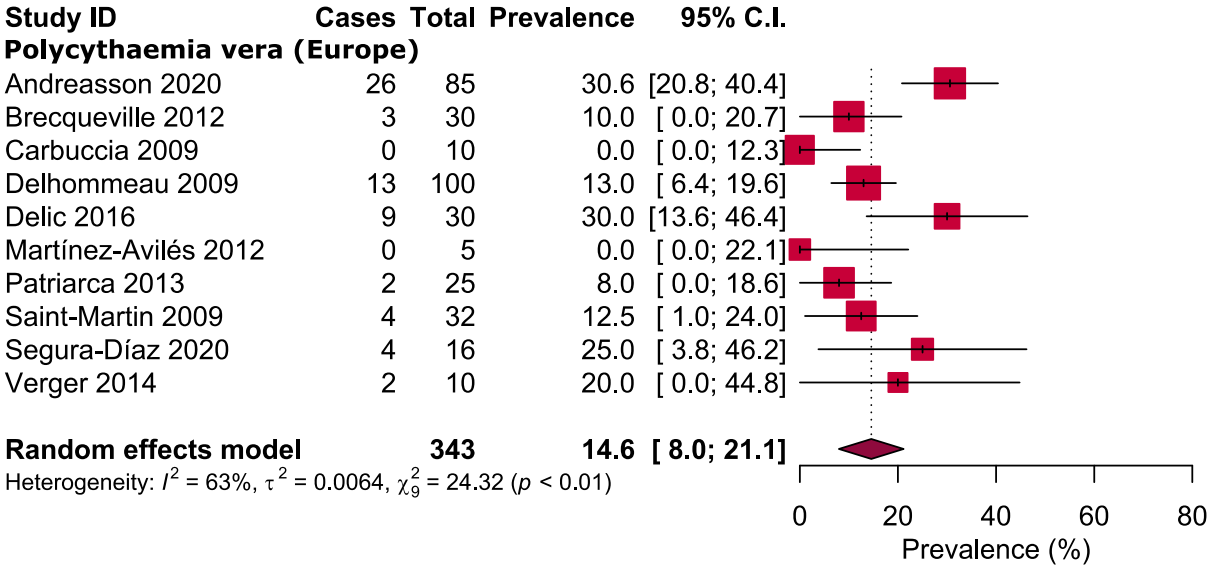
G


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (Asia)
Ha 2014 6 62 9.7 [2.3; 17.0]
Huang 2020 16 38 42.1 [26.4; 57.8]
Random effects model 100 25.1 [0.0; 56.9]
Heterogeneity: I^2 = 93%, τ^2 = 0.0487, χ^2_1 = 13.44 (p < 0.01)
0 20 40 60 80
Prevalence (%)

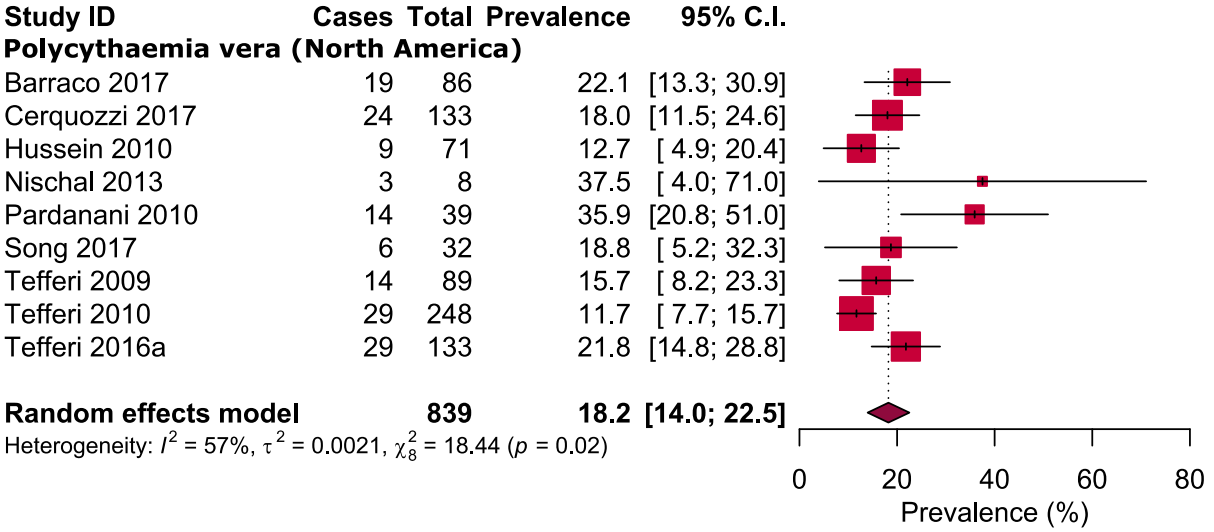
H


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (Australia)
Magor 2016 1 16 6.2 [0; 18.1]
0 5 10 15 20
Prevalence (%)

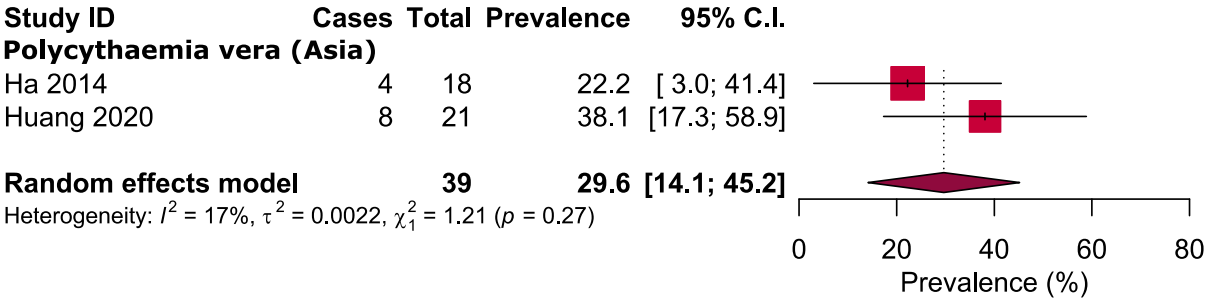
I


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (Europe)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Brecqueville 2012 3 30 10.0 [0.0; 20.7]
Carbuccia 2009 0 10 0.0 [0.0; 12.3]
Delhommeau 2009 13 100 13.0 [6.4; 19.6]
Delic 2016 9 30 30.0 [13.6; 46.4]
Martínez-Avilés 2012 0 5 0.0 [0.0; 22.1]
Patriarca 2013 2 25 8.0 [0.0; 18.6]
Saint-Martin 2009 4 32 12.5 [1.0; 24.0]
Segura-Díaz 2020 4 16 25.0 [3.8; 46.2]
Verger 2014 2 10 20.0 [0.0; 44.8]
Random effects model 343 14.6 [8.0; 21.1]
Heterogeneity: I^2 = 63%, τ^2 = 0.0064, χ^2_9 = 24.32 (p < 0.01)
0 20 40 60 80
Prevalence (%)

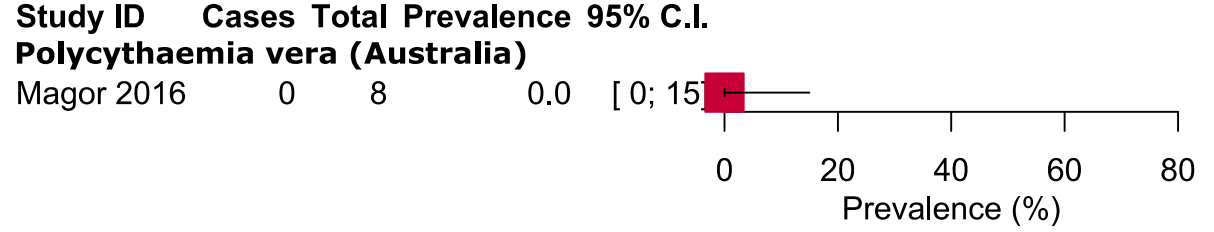
J


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (North America)
Barraco 2017 19 86 22.1 [13.3; 30.9]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Hussein 2010 9 71 12.7 [4.9; 20.4]
Nischal 2013 3 8 37.5 [4.0; 71.0]
Pardanani 2010 14 39 35.9 [20.8; 51.0]
Song 2017 6 32 18.8 [5.2; 32.3]
Tefferi 2009 14 89 15.7 [8.2; 23.3]
Tefferi 2010 29 248 11.7 [7.7; 15.7]
Tefferi 2016a 29 133 21.8 [14.8; 28.8]
Random effects model 839 18.2 [14.0; 22.5]
Heterogeneity: I^2 = 57%, τ^2 = 0.0021, χ^2_8 = 18.44 (p = 0.02)
0 20 40 60 80
Prevalence (%)

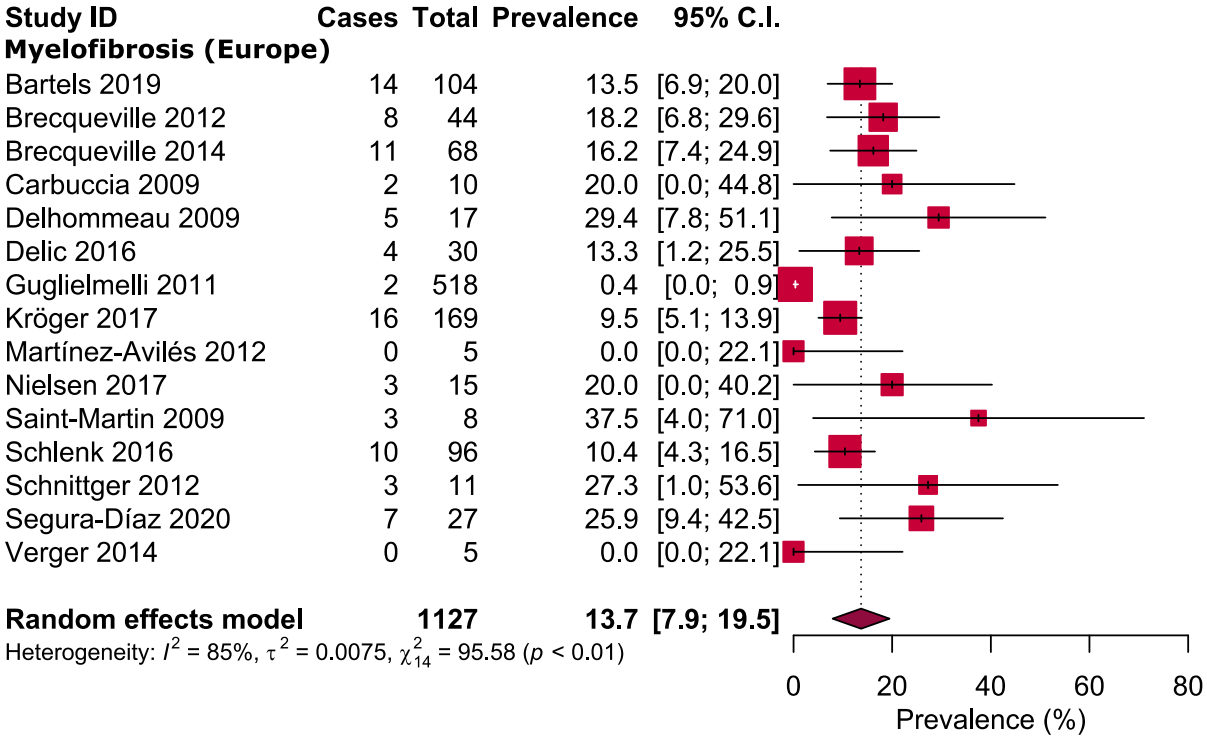
K


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (Asia)
Ha 2014 4 18 22.2 [3.0; 41.4]
Huang 2020 8 21 38.1 [17.3; 58.9]
Random effects model 39 29.6 [14.1; 45.2]
Heterogeneity: I^2 = 17%, τ^2 = 0.0022, χ^2_1 = 1.21 (p = 0.27)
0 20 40 60 80
Prevalence (%)

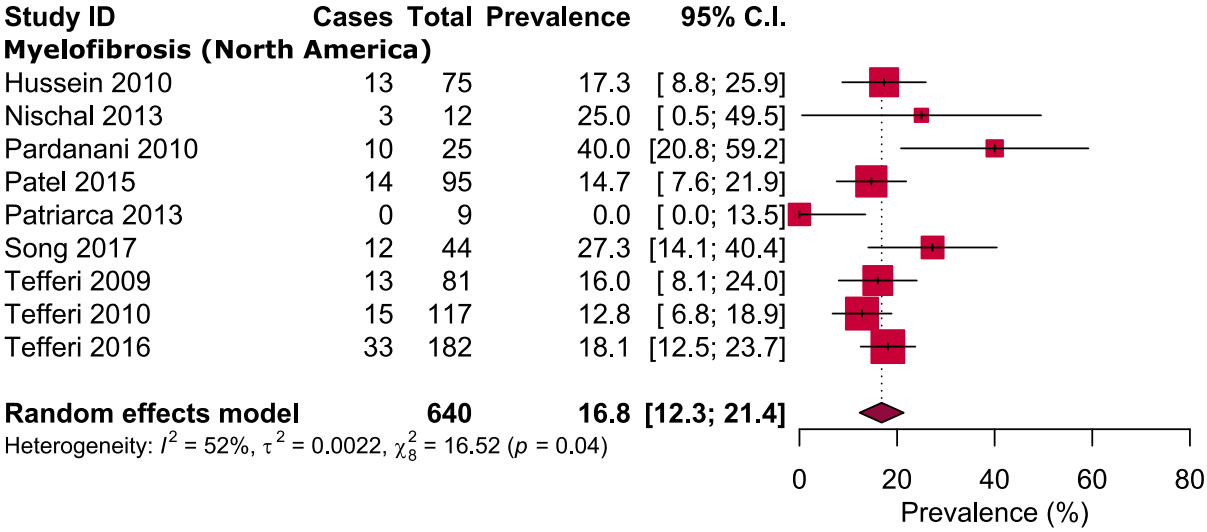
L


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (Australia)
Magor 2016 0 8 0.0 [0; 15]
0 20 40 60 80
Prevalence (%)

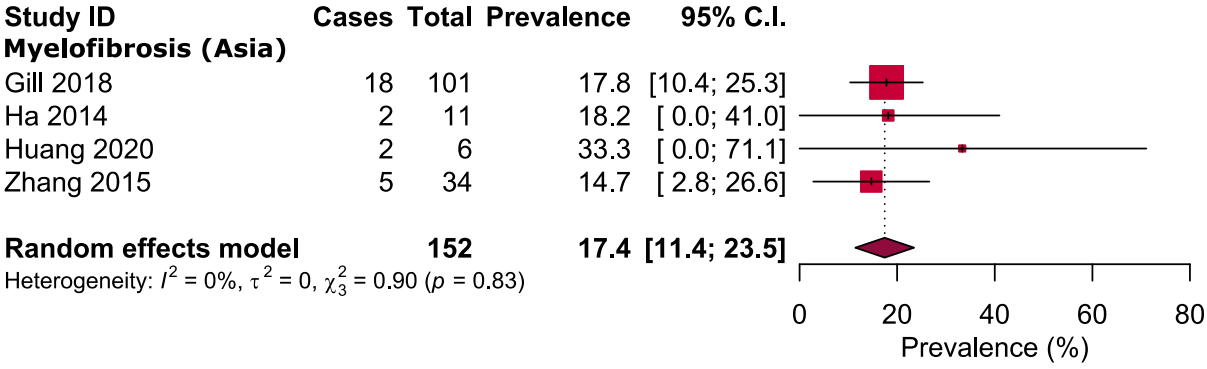
M


Study ID Cases Total Prevalence 95% C.I.
Myelofibrosis (Europe)
Bartels 2019 14 104 13.5 [6.9; 20.0]
Brecqueville 2012 8 44 18.2 [6.8; 29.6]
Brecqueville 2014 11 68 16.2 [7.4; 24.9]
Carbuccia 2009 2 10 20.0 [0.0; 44.8]
Delhommeau 2009 5 17 29.4 [7.8; 51.1]
Delic 2016 4 30 13.3 [1.2; 25.5]
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Kröger 2017 16 169 9.5 [5.1; 13.9]
Martínez-Avilés 2012 0 5 0.0 [0.0; 22.1]
Nielsen 2017 3 15 20.0 [0.0; 40.2]
Saint-Martin 2009 3 8 37.5 [4.0; 71.0]
Schlenk 2016 10 96 10.4 [4.3; 16.5]
Schnittger 2012 3 11 27.3 [1.0; 53.6]
Segura-Díaz 2020 7 27 25.9 [9.4; 42.5]
Verger 2014 0 5 0.0 [0.0; 22.1]
Random effects model 1127 13.7 [7.9; 19.5]
Heterogeneity: I^2 = 85%, τ^2 = 0.0075, χ^2_{14} = 95.58 (p < 0.01)
0 20 40 60 80
Prevalence (%)

N


Study ID Cases Total Prevalence 95% C.I.
Myelofibrosis (North America)
Hussein 2010 13 75 17.3 [8.8; 25.9]
Nischal 2013 3 12 25.0 [0.5; 49.5]
Pardanani 2010 10 25 40.0 [20.8; 59.2]
Patel 2015 14 95 14.7 [7.6; 21.9]
Patriarca 2013 0 9 0.0 [0.0; 13.5]
Song 2017 12 44 27.3 [14.1; 40.4]
Tefferi 2009 13 81 16.0 [8.1; 24.0]
Tefferi 2010 15 117 12.8 [6.8; 18.9]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Random effects model 640 16.8 [12.3; 21.4]
Heterogeneity: I^2 = 52%, τ^2 = 0.0022, χ^2_8 = 16.52 (p = 0.04)
0 20 40 60 80
Prevalence (%)

O


Study ID Cases Total Prevalence 95% C.I.
Myelofibrosis (Asia)
Gill 2018 18 101 17.8 [10.4; 25.3]
Ha 2014 2 11 18.2 [0.0; 41.0]
Huang 2020 2 6 33.3 [0.0; 71.1]
Zhang 2015 5 34 14.7 [2.8; 26.6]
Random effects model 152 17.4 [11.4; 23.5]
Heterogeneity: I^2 = 0%, τ^2 = 0, χ^2_3 = 0.90 (p = 0.83)
0 20 40 60 80
Prevalence (%)

P

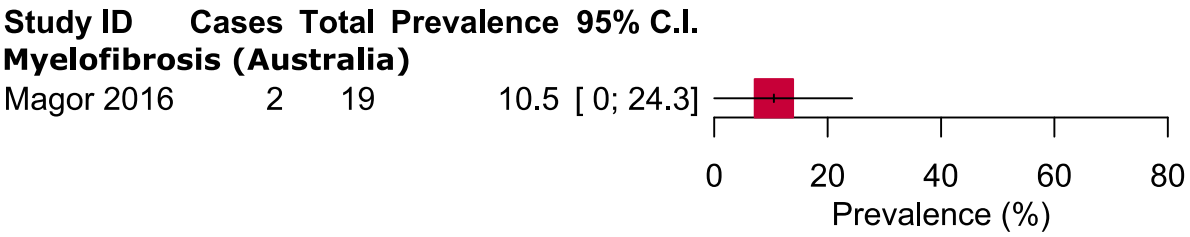
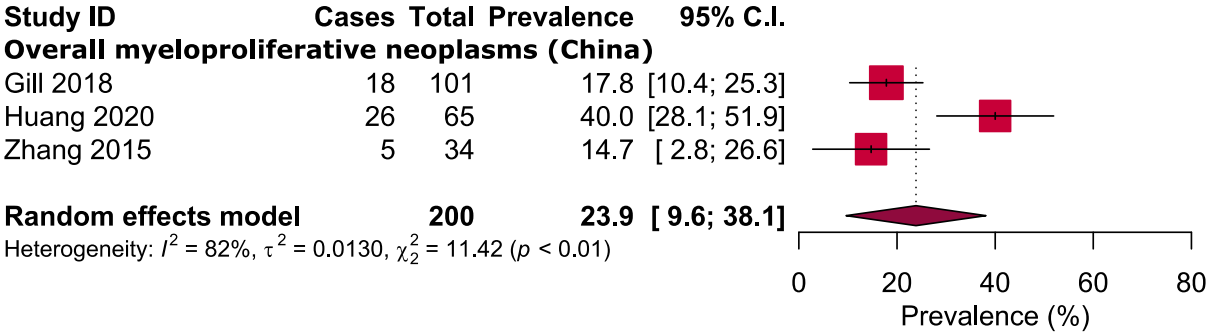
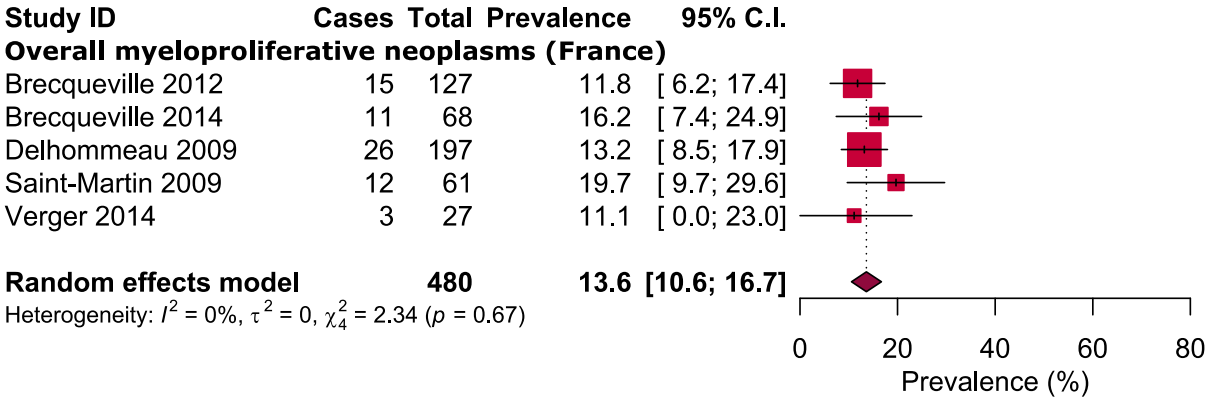


Figure S1. Prevalence of *TET2* gene mutations based on continents.

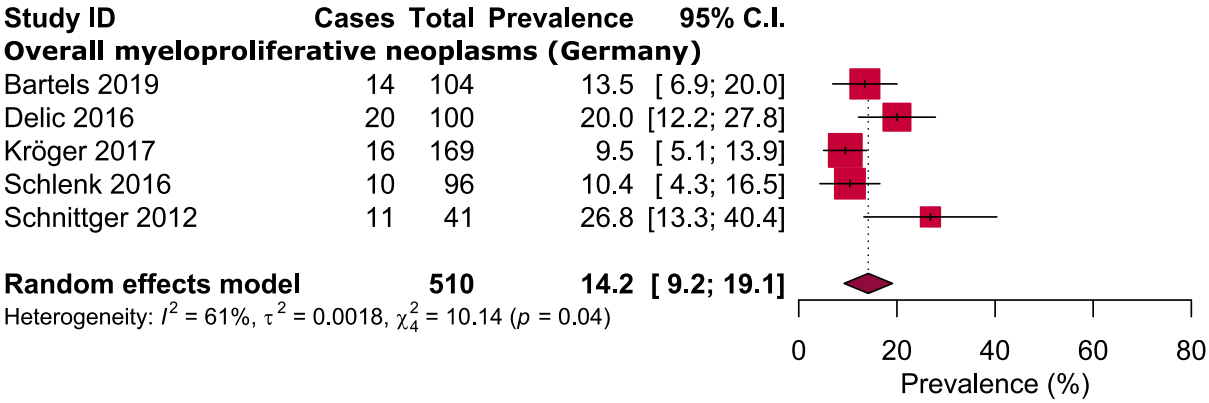
A



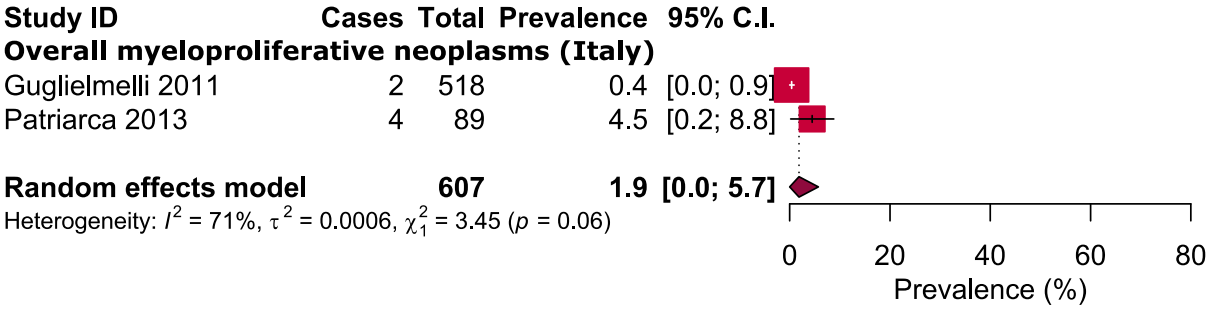
B



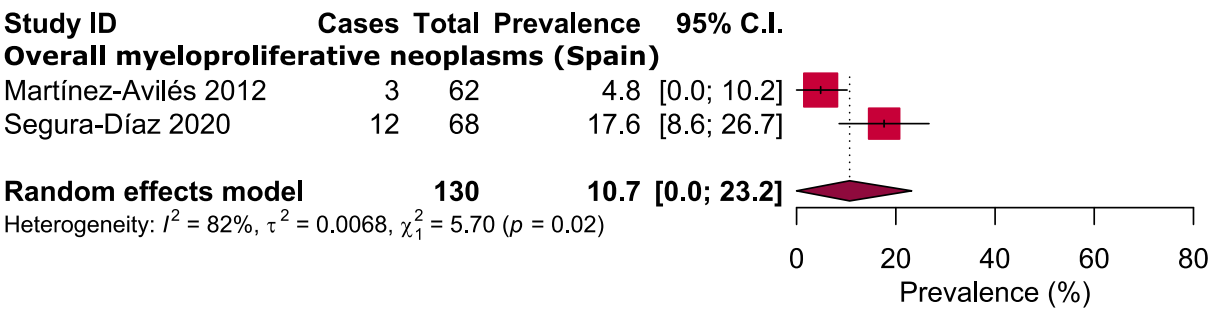
C



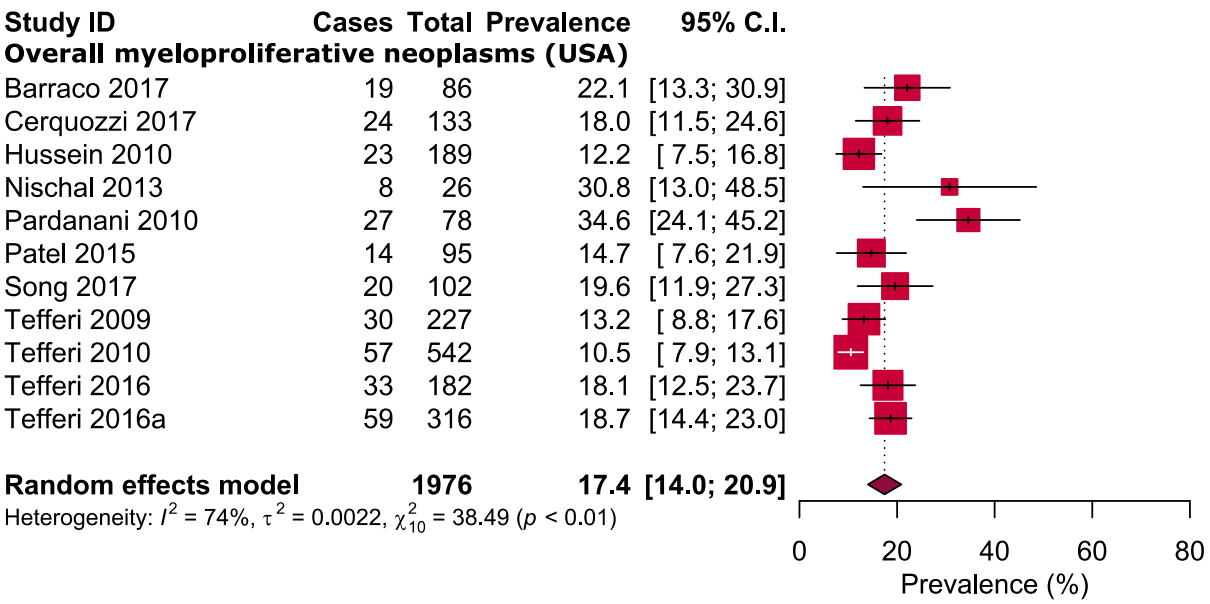
D


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (Italy)
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Patriarca 2013 4 89 4.5 [0.2; 8.8]
Random effects model 607 1.9 [0.0; 5.7]
Heterogeneity: I^2 = 71%, τ^2 = 0.0006, χ^2_1 = 3.45 (p = 0.06)
0 20 40 60 80
Prevalence (%)

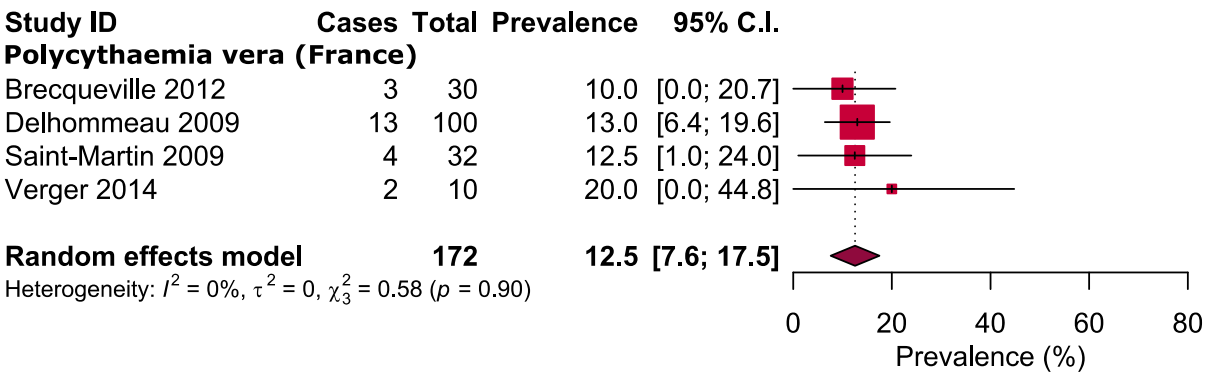
E


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (Spain)
Martínez-Avilés 2012 3 62 4.8 [0.0; 10.2]
Segura-Díaz 2020 12 68 17.6 [8.6; 26.7]
Random effects model 130 10.7 [0.0; 23.2]
Heterogeneity: I^2 = 82%, τ^2 = 0.0068, χ^2_1 = 5.70 (p = 0.02)
0 20 40 60 80
Prevalence (%)

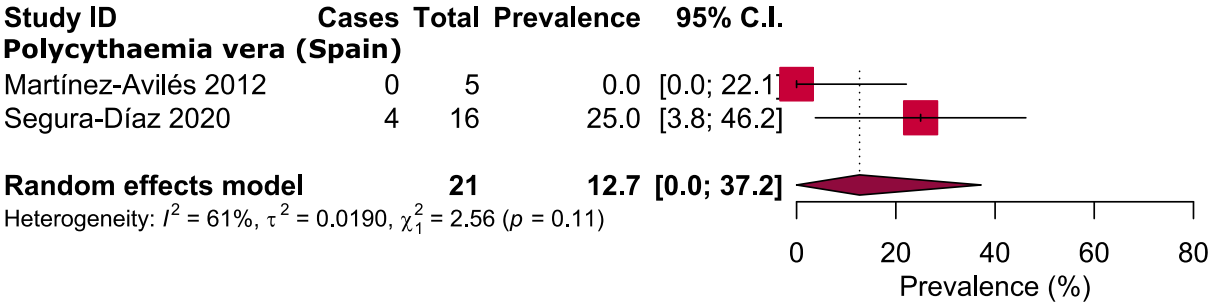
F


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (USA)
Barraco 2017 19 86 22.1 [13.3; 30.9]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Hussein 2010 23 189 12.2 [7.5; 16.8]
Nischal 2013 8 26 30.8 [13.0; 48.5]
Pardanani 2010 27 78 34.6 [24.1; 45.2]
Patel 2015 14 95 14.7 [7.6; 21.9]
Song 2017 20 102 19.6 [11.9; 27.3]
Tefferi 2009 30 227 13.2 [8.8; 17.6]
Tefferi 2010 57 542 10.5 [7.9; 13.1]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Tefferi 2016a 59 316 18.7 [14.4; 23.0]
Random effects model 1976 17.4 [14.0; 20.9]
Heterogeneity: I^2 = 74%, τ^2 = 0.0022, χ^2_{10} = 38.49 (p < 0.01)
0 20 40 60 80
Prevalence (%)

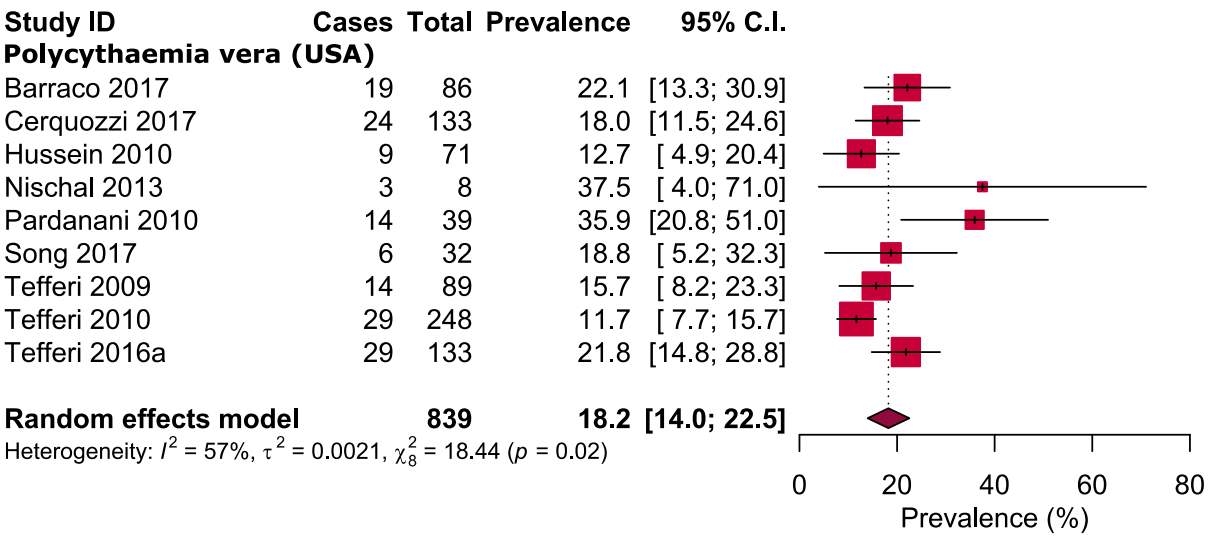
G


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (France)
Brecqueville 2012 3 30 10.0 [0.0; 20.7]
Delhommeau 2009 13 100 13.0 [6.4; 19.6]
Saint-Martin 2009 4 32 12.5 [1.0; 24.0]
Verger 2014 2 10 20.0 [0.0; 44.8]
Random effects model 172 12.5 [7.6; 17.5]
Heterogeneity: I^2 = 0%, τ^2 = 0, χ^2_3 = 0.58 (p = 0.90)
0 20 40 60 80
Prevalence (%)

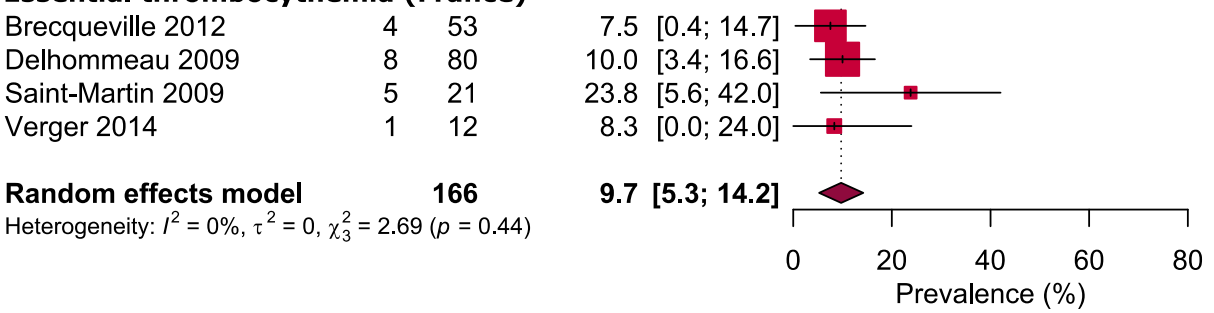
H


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (Spain)
Martínez-Avilés 2012 0 5 0.0 [0.0; 22.1]
Segura-Díaz 2020 4 16 25.0 [3.8; 46.2]
Random effects model 21 12.7 [0.0; 37.2]
Heterogeneity: I^2 = 61%, τ^2 = 0.0190, χ^2_1 = 2.56 (p = 0.11)
0 20 40 60 80
Prevalence (%)

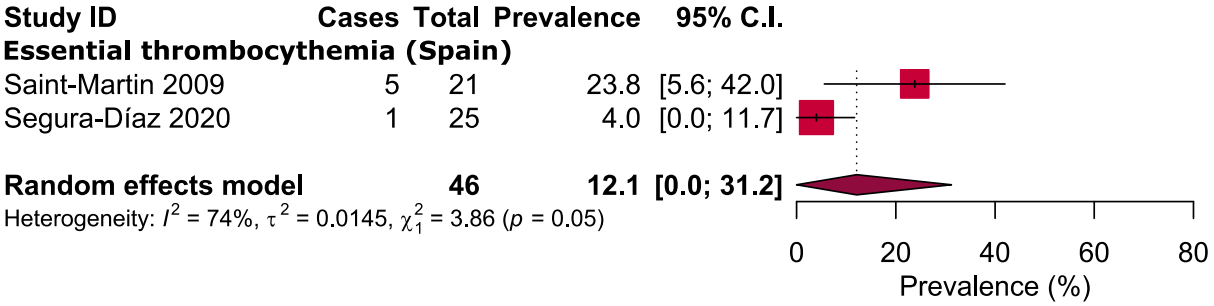
I


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (USA)
Barraco 2017 19 86 22.1 [13.3; 30.9]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Hussein 2010 9 71 12.7 [4.9; 20.4]
Nischal 2013 3 8 37.5 [4.0; 71.0]
Pardanani 2010 14 39 35.9 [20.8; 51.0]
Song 2017 6 32 18.8 [5.2; 32.3]
Tefferi 2009 14 89 15.7 [8.2; 23.3]
Tefferi 2010 29 248 11.7 [7.7; 15.7]
Tefferi 2016a 29 133 21.8 [14.8; 28.8]
Random effects model 839 18.2 [14.0; 22.5]
Heterogeneity: I^2 = 57%, τ^2 = 0.0021, χ^2_8 = 18.44 (p = 0.02)
0 20 40 60 80
Prevalence (%)

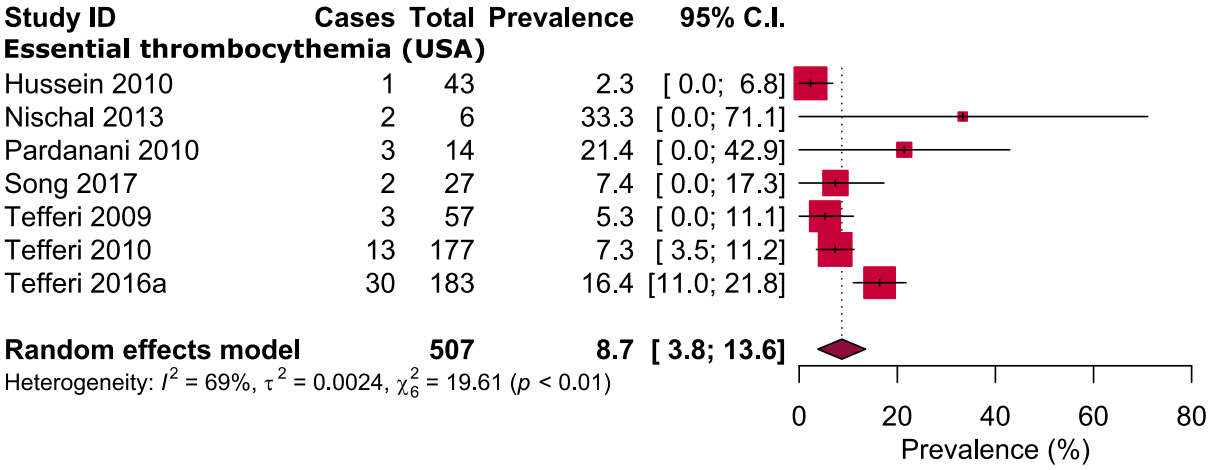
J


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (France)
Brecqueville 2012 4 53 7.5 [0.4; 14.7]
Delhommeau 2009 8 80 10.0 [3.4; 16.6]
Saint-Martin 2009 5 21 23.8 [5.6; 42.0]
Verger 2014 1 12 8.3 [0.0; 24.0]
Random effects model 166 9.7 [5.3; 14.2]
Heterogeneity: I^2 = 0%, τ^2 = 0, χ^2_3 = 2.69 (p = 0.44)
0 20 40 60 80
Prevalence (%)

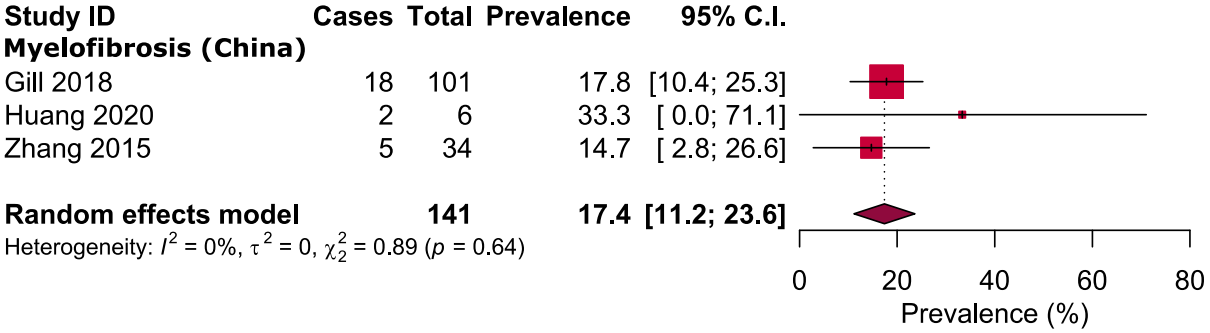
K


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (Spain)
Saint-Martin 2009 5 21 23.8 [5.6; 42.0]
Segura-Díaz 2020 1 25 4.0 [0.0; 11.7]
Random effects model 46 12.1 [0.0; 31.2]
Heterogeneity: I^2 = 74%, τ^2 = 0.0145, χ^2_1 = 3.86 (p = 0.05)
0 20 40 60 80
Prevalence (%)

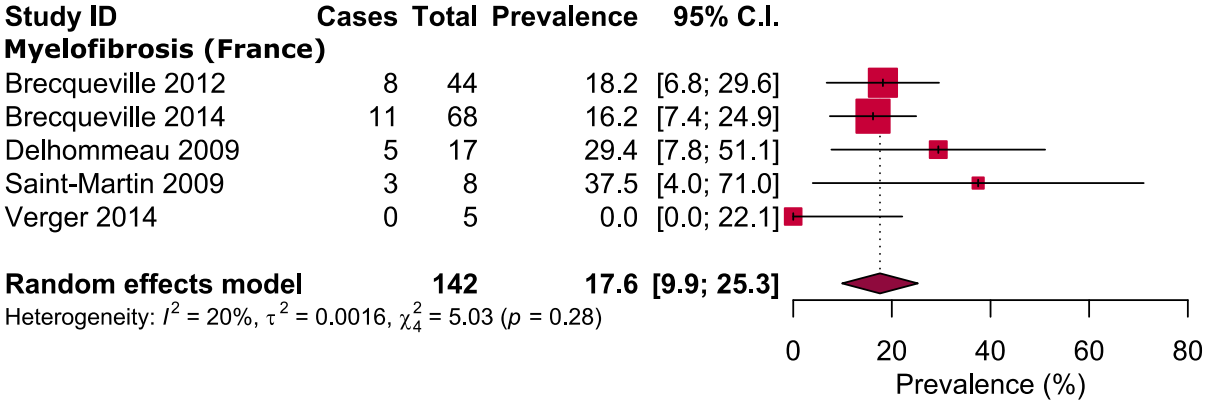
L


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (USA)
Hussein 2010 1 43 2.3 [0.0; 6.8]
Nischal 2013 2 6 33.3 [0.0; 71.1]
Pardanani 2010 3 14 21.4 [0.0; 42.9]
Song 2017 2 27 7.4 [0.0; 17.3]
Tefferi 2009 3 57 5.3 [0.0; 11.1]
Tefferi 2010 13 177 7.3 [3.5; 11.2]
Tefferi 2016a 30 183 16.4 [11.0; 21.8]
Random effects model 507 8.7 [3.8; 13.6]
Heterogeneity: I^2 = 69%, τ^2 = 0.0024, χ^2_6 = 19.61 (p < 0.01)
0 20 40 60 80
Prevalence (%)

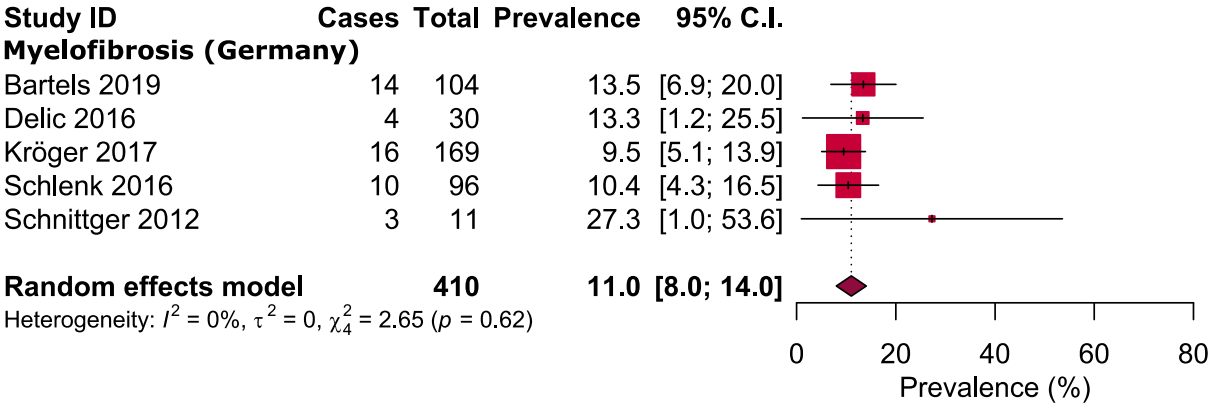
M


Study ID Cases Total Prevalence 95% C.I.
Myelofibrosis (China)
Gill 2018 18 101 17.8 [10.4; 25.3]
Huang 2020 2 6 33.3 [0.0; 71.1]
Zhang 2015 5 34 14.7 [2.8; 26.6]
Random effects model 141 17.4 [11.2; 23.6]
Heterogeneity: I^2 = 0%, τ^2 = 0, χ^2_2 = 0.89 (p = 0.64)
0 20 40 60 80
Prevalence (%)

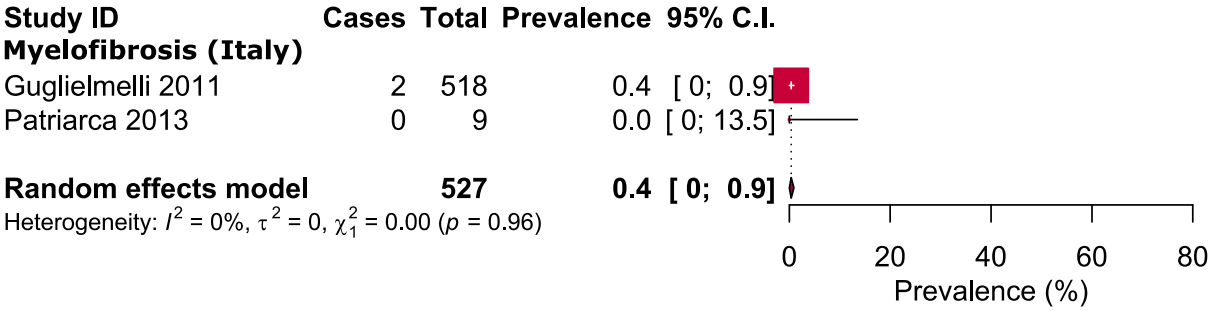
N


Study ID Cases Total Prevalence 95% C.I.
Myelofibrosis (France)
Brecqueville 2012 8 44 18.2 [6.8; 29.6]
Brecqueville 2014 11 68 16.2 [7.4; 24.9]
Delhommeau 2009 5 17 29.4 [7.8; 51.1]
Saint-Martin 2009 3 8 37.5 [4.0; 71.0]
Verger 2014 0 5 0.0 [0.0; 22.1]
Random effects model 142 17.6 [9.9; 25.3]
Heterogeneity: I^2 = 20%, τ^2 = 0.0016, χ^2_4 = 5.03 (p = 0.28)
0 20 40 60 80
Prevalence (%)

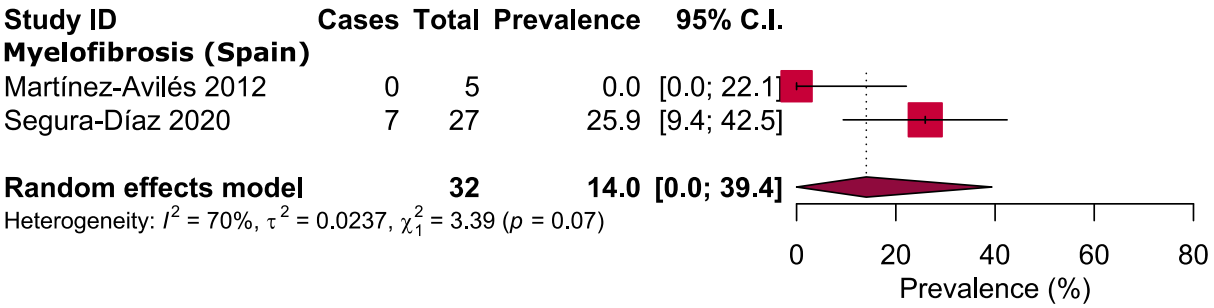
O


Study ID Cases Total Prevalence 95% C.I.
Myelofibrosis (Germany)
Bartels 2019 14 104 13.5 [6.9; 20.0]
Delic 2016 4 30 13.3 [1.2; 25.5]
Kröger 2017 16 169 9.5 [5.1; 13.9]
Schlenk 2016 10 96 10.4 [4.3; 16.5]
Schnittger 2012 3 11 27.3 [1.0; 53.6]
Random effects model 410 11.0 [8.0; 14.0]
Heterogeneity: I^2 = 0%, τ^2 = 0, χ^2_4 = 2.65 (p = 0.62)
0 20 40 60 80
Prevalence (%)

P



Q



R

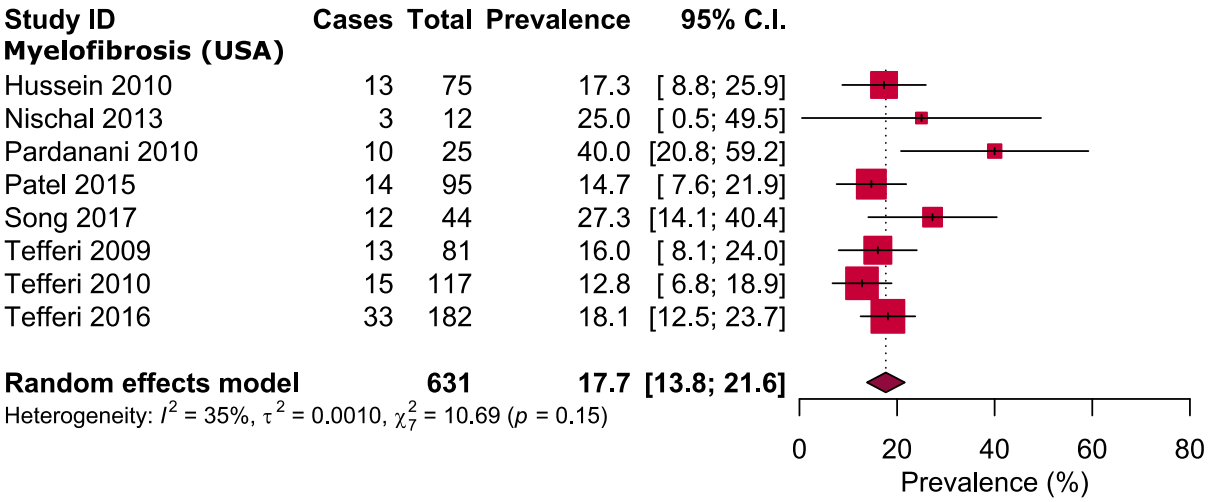
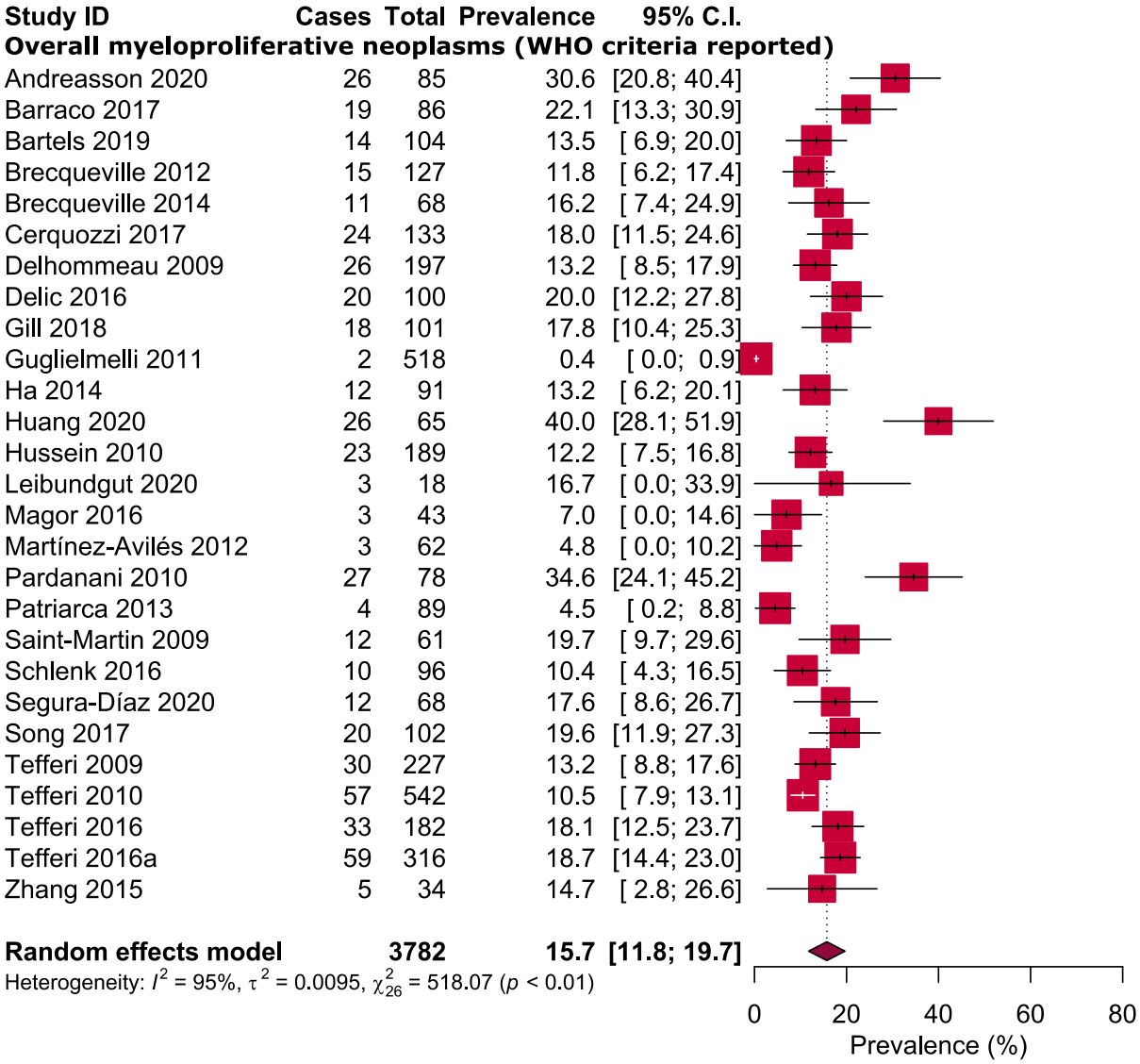
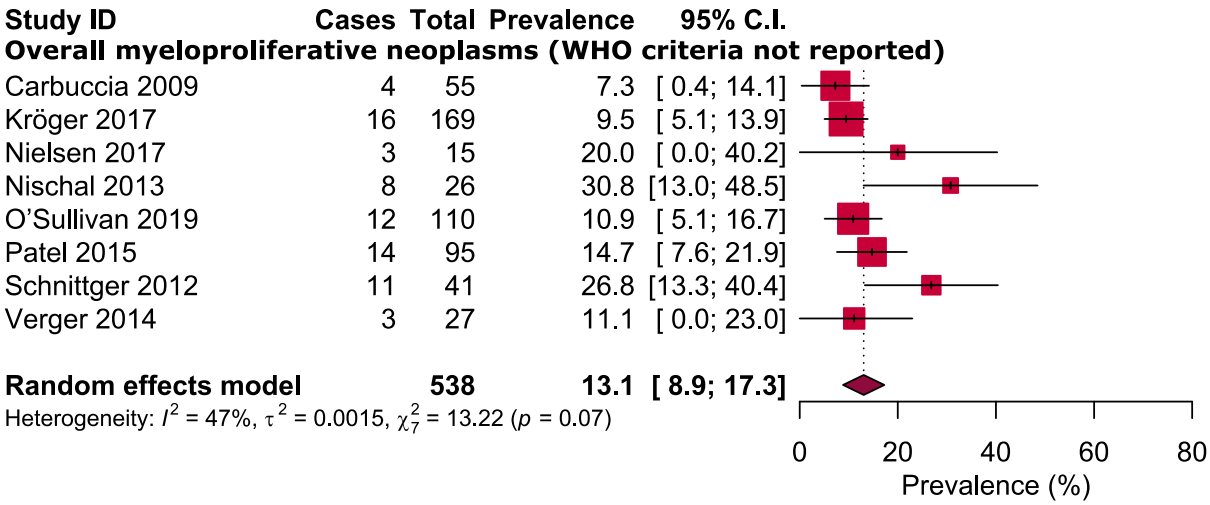


Figure S2. Prevalence of *TET2* gene mutations based on countries.

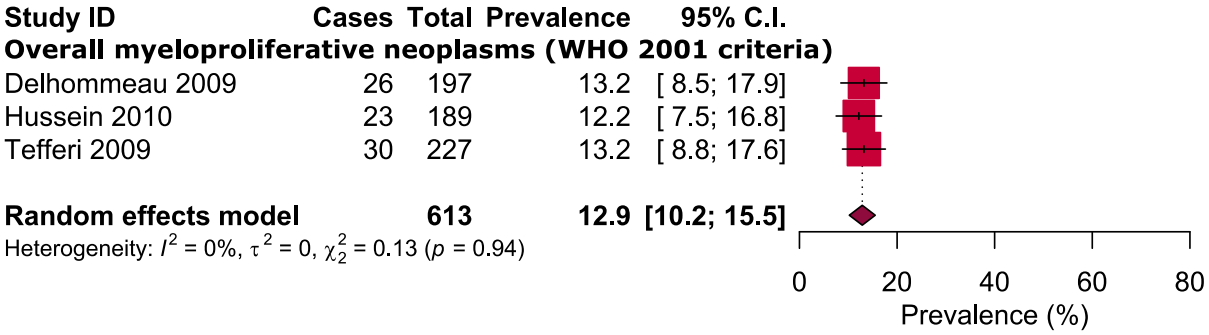
A


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (WHO criteria reported)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Barraco 2017 19 86 22.1 [13.3; 30.9]
Bartels 2019 14 104 13.5 [6.9; 20.0]
Brecqueville 2012 15 127 11.8 [6.2; 17.4]
Brecqueville 2014 11 68 16.2 [7.4; 24.9]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Delhommeau 2009 26 197 13.2 [8.5; 17.9]
Delic 2016 20 100 20.0 [12.2; 27.8]
Gill 2018 18 101 17.8 [10.4; 25.3]
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Ha 2014 12 91 13.2 [6.2; 20.1]
Huang 2020 26 65 40.0 [28.1; 51.9]
Hussein 2010 23 189 12.2 [7.5; 16.8]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
Magor 2016 3 43 7.0 [0.0; 14.6]
Martínez-Avilés 2012 3 62 4.8 [0.0; 10.2]
Pardanani 2010 27 78 34.6 [24.1; 45.2]
Patriarca 2013 4 89 4.5 [0.2; 8.8]
Saint-Martin 2009 12 61 19.7 [9.7; 29.6]
Schlenk 2016 10 96 10.4 [4.3; 16.5]
Segura-Díaz 2020 12 68 17.6 [8.6; 26.7]
Song 2017 20 102 19.6 [11.9; 27.3]
Tefferi 2009 30 227 13.2 [8.8; 17.6]
Tefferi 2010 57 542 10.5 [7.9; 13.1]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Tefferi 2016a 59 316 18.7 [14.4; 23.0]
Zhang 2015 5 34 14.7 [2.8; 26.6]
Random effects model 3782 15.7 [11.8; 19.7]
Heterogeneity: I^2 = 95%, τ^2 = 0.0095, χ^2_{26} = 518.07 (p < 0.01)
0 20 40 60 80
Prevalence (%)

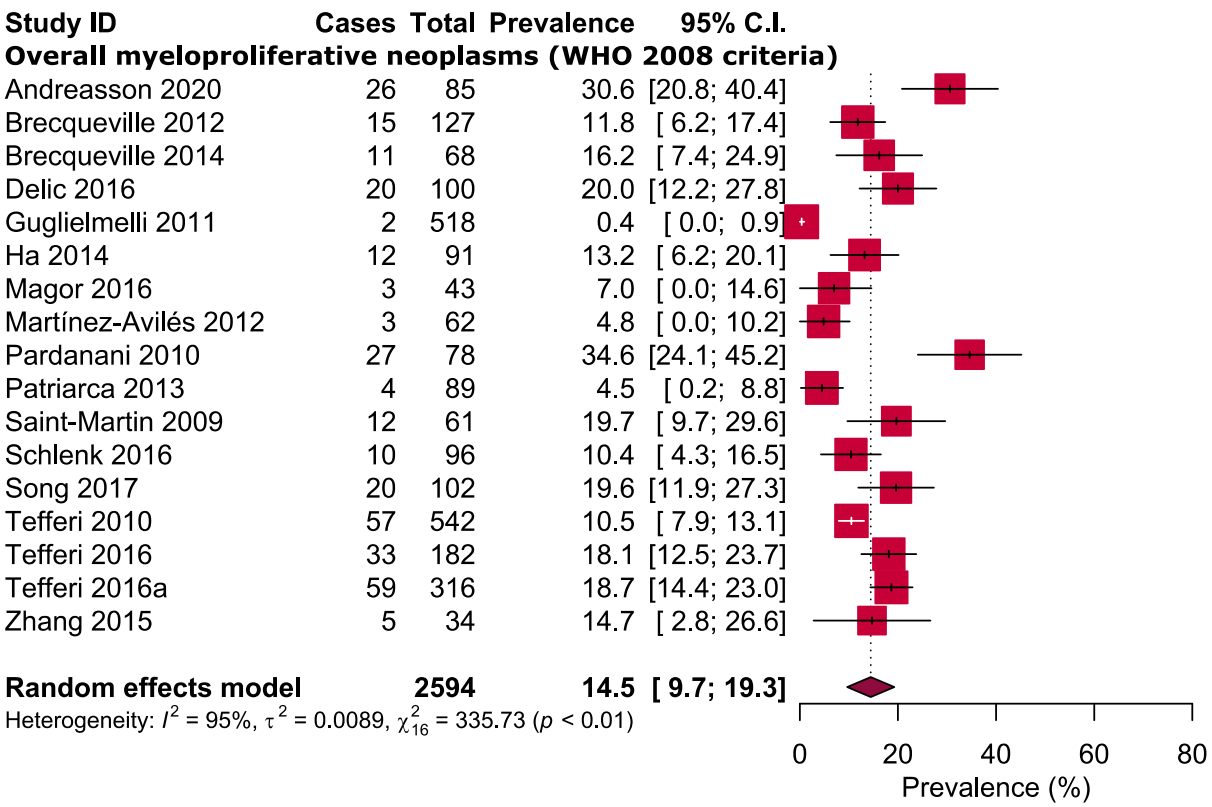
B


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (WHO criteria not reported)
Carbuccia 2009 4 55 7.3 [0.4; 14.1]
Kröger 2017 16 169 9.5 [5.1; 13.9]
Nielsen 2017 3 15 20.0 [0.0; 40.2]
Nischal 2013 8 26 30.8 [13.0; 48.5]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Patel 2015 14 95 14.7 [7.6; 21.9]
Schnittger 2012 11 41 26.8 [13.3; 40.4]
Verger 2014 3 27 11.1 [0.0; 23.0]
Random effects model 538 13.1 [8.9; 17.3]
Heterogeneity: I^2 = 47%, τ^2 = 0.0015, χ^2_7 = 13.22 (p = 0.07)
0 20 40 60 80
Prevalence (%)

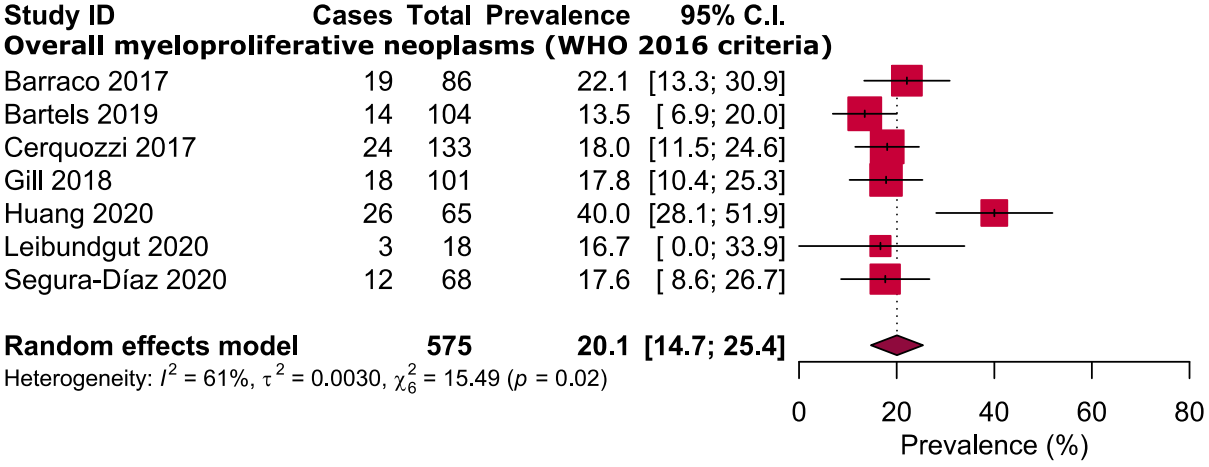
C


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (WHO 2001 criteria)
Delhommeau 2009 26 197 13.2 [8.5; 17.9]
Hussein 2010 23 189 12.2 [7.5; 16.8]
Tefferi 2009 30 227 13.2 [8.8; 17.6]
Random effects model 613 12.9 [10.2; 15.5]
Heterogeneity: I^2 = 0%, τ^2 = 0, χ^2_2 = 0.13 (p = 0.94)
0 20 40 60 80
Prevalence (%)

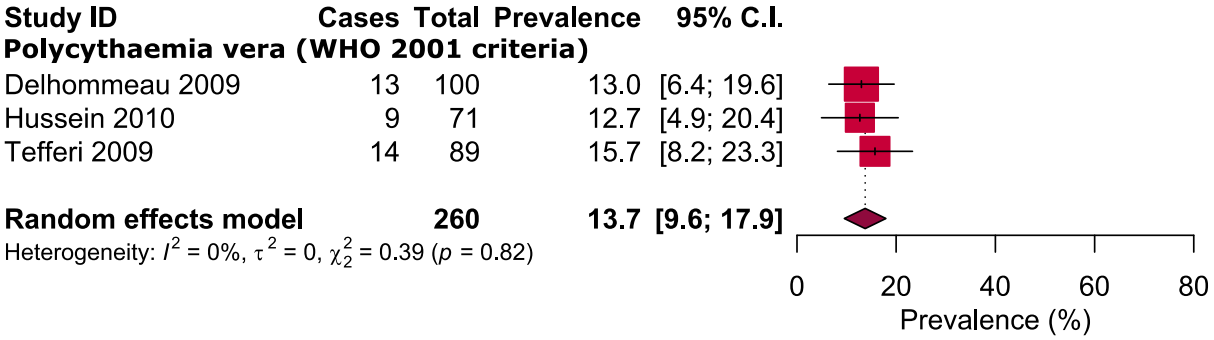
D


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (WHO 2008 criteria)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Brecqueville 2012 15 127 11.8 [6.2; 17.4]
Brecqueville 2014 11 68 16.2 [7.4; 24.9]
Delic 2016 20 100 20.0 [12.2; 27.8]
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Ha 2014 12 91 13.2 [6.2; 20.1]
Magor 2016 3 43 7.0 [0.0; 14.6]
Martínez-Avilés 2012 3 62 4.8 [0.0; 10.2]
Pardanani 2010 27 78 34.6 [24.1; 45.2]
Patriarca 2013 4 89 4.5 [0.2; 8.8]
Saint-Martin 2009 12 61 19.7 [9.7; 29.6]
Schlenk 2016 10 96 10.4 [4.3; 16.5]
Song 2017 20 102 19.6 [11.9; 27.3]
Tefferi 2010 57 542 10.5 [7.9; 13.1]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Tefferi 2016a 59 316 18.7 [14.4; 23.0]
Zhang 2015 5 34 14.7 [2.8; 26.6]
Random effects model 2594 14.5 [9.7; 19.3]
Heterogeneity: I^2 = 95%, τ^2 = 0.0089, χ^2_{16} = 335.73 (p < 0.01)
0 20 40 60 80
Prevalence (%)

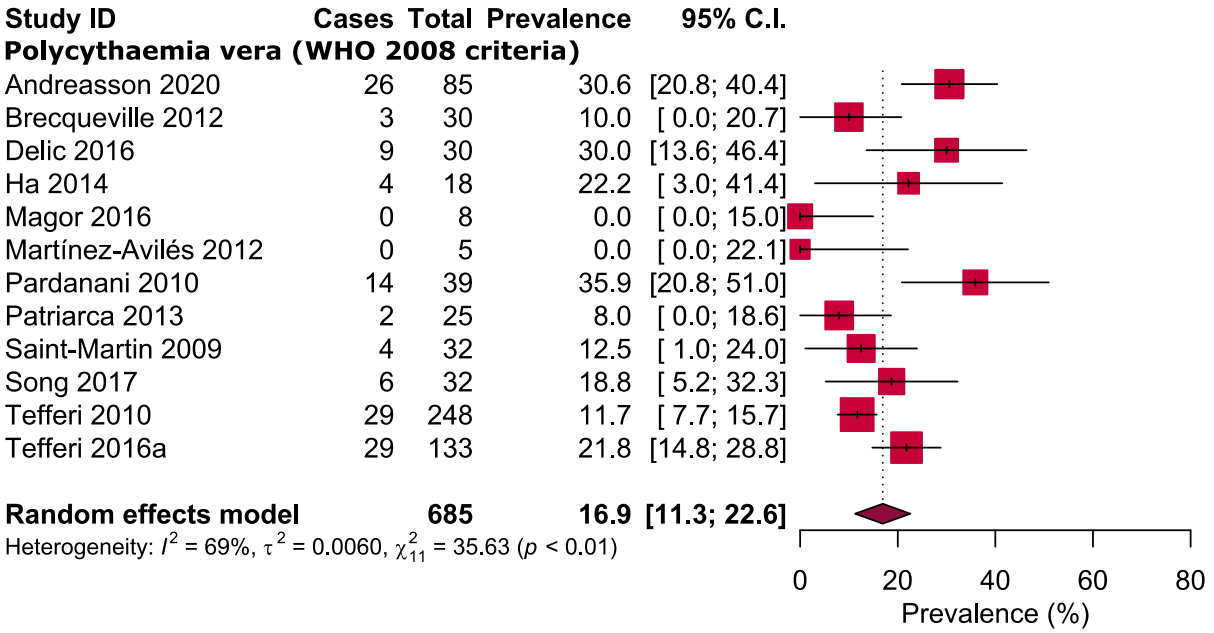
E


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (WHO 2016 criteria)
Barraco 2017 19 86 22.1 [13.3; 30.9]
Bartels 2019 14 104 13.5 [6.9; 20.0]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Gill 2018 18 101 17.8 [10.4; 25.3]
Huang 2020 26 65 40.0 [28.1; 51.9]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
Segura-Díaz 2020 12 68 17.6 [8.6; 26.7]
Random effects model 575 20.1 [14.7; 25.4]
Heterogeneity: I^2 = 61%, τ^2 = 0.0030, χ^2_6 = 15.49 (p = 0.02)
0 20 40 60 80
Prevalence (%)

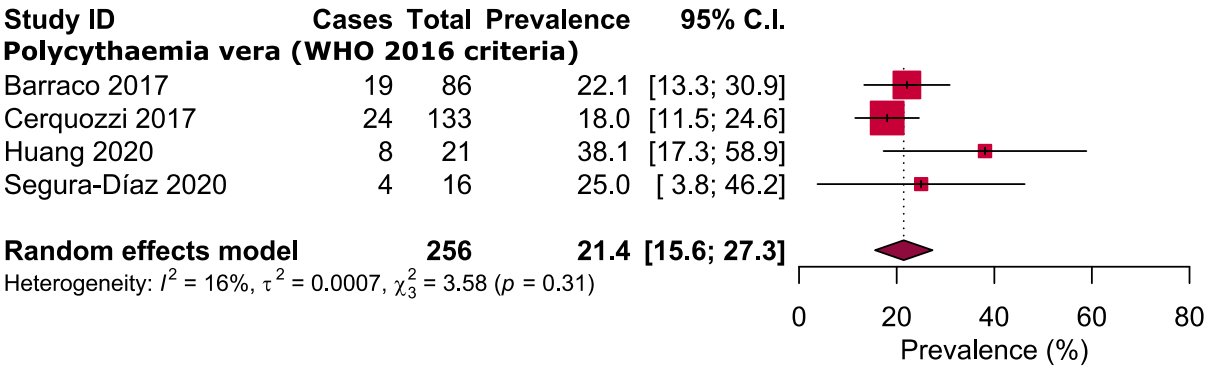
F


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (WHO 2001 criteria)
Delhommeau 2009 13 100 13.0 [6.4; 19.6]
Hussein 2010 9 71 12.7 [4.9; 20.4]
Tefferi 2009 14 89 15.7 [8.2; 23.3]
Random effects model 260 13.7 [9.6; 17.9]
Heterogeneity: I^2 = 0%, τ^2 = 0, χ^2_2 = 0.39 (p = 0.82)
0 20 40 60 80
Prevalence (%)

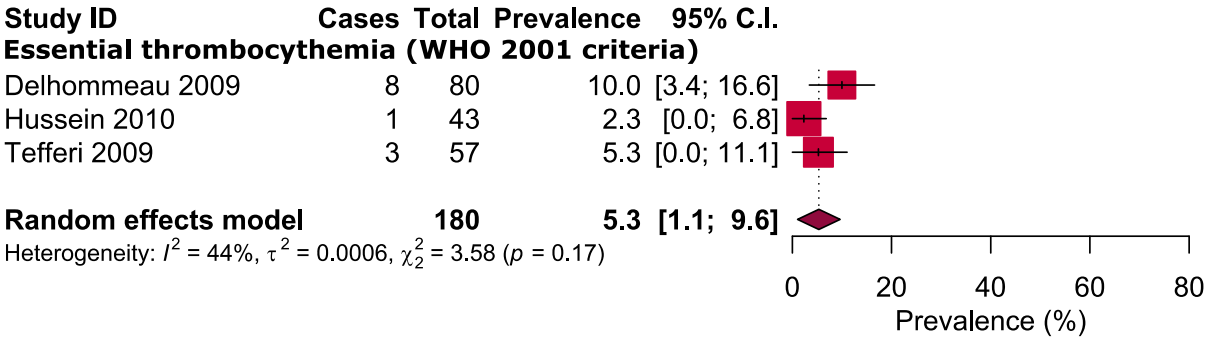
G


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (WHO 2008 criteria)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Brecqueville 2012 3 30 10.0 [0.0; 20.7]
Delic 2016 9 30 30.0 [13.6; 46.4]
Ha 2014 4 18 22.2 [3.0; 41.4]
Magor 2016 0 8 0.0 [0.0; 15.0]
Martínez-Avilés 2012 0 5 0.0 [0.0; 22.1]
Pardanani 2010 14 39 35.9 [20.8; 51.0]
Patriarca 2013 2 25 8.0 [0.0; 18.6]
Saint-Martin 2009 4 32 12.5 [1.0; 24.0]
Song 2017 6 32 18.8 [5.2; 32.3]
Tefferi 2010 29 248 11.7 [7.7; 15.7]
Tefferi 2016a 29 133 21.8 [14.8; 28.8]
Random effects model 685 16.9 [11.3; 22.6]
Heterogeneity: I^2 = 69%, τ^2 = 0.0060, χ^2_{11} = 35.63 (p < 0.01)
0 20 40 60 80
Prevalence (%)

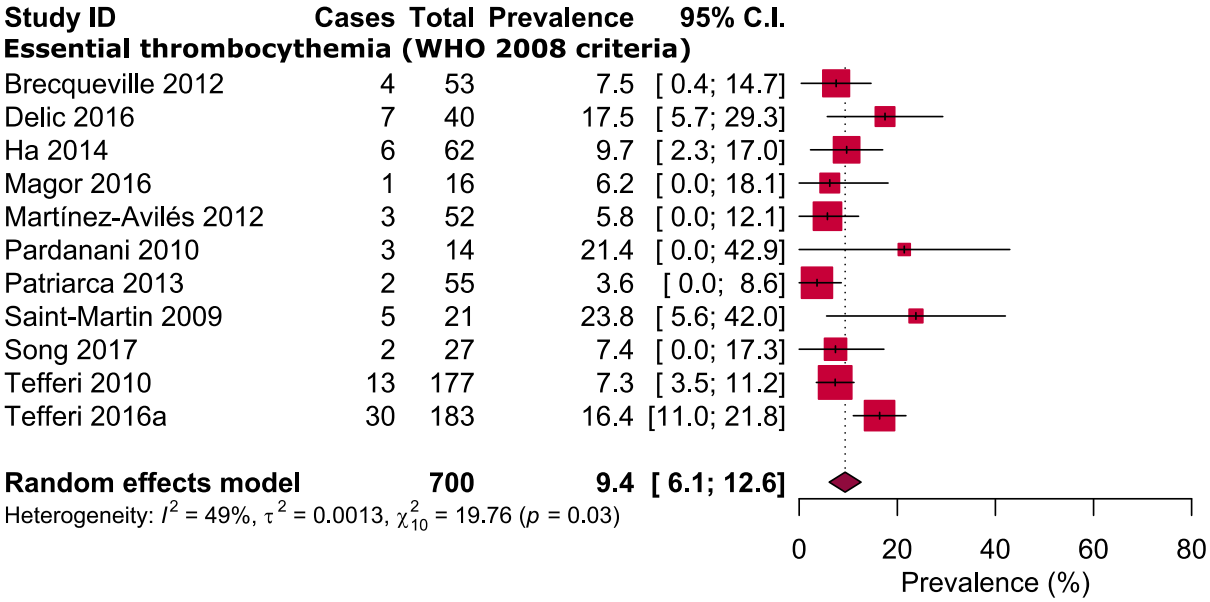
H


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (WHO 2016 criteria)
Barraco 2017 19 86 22.1 [13.3; 30.9]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Huang 2020 8 21 38.1 [17.3; 58.9]
Segura-Díaz 2020 4 16 25.0 [3.8; 46.2]
Random effects model 256 21.4 [15.6; 27.3]
Heterogeneity: I^2 = 16%, τ^2 = 0.0007, χ^2_3 = 3.58 (p = 0.31)
0 20 40 60 80
Prevalence (%)

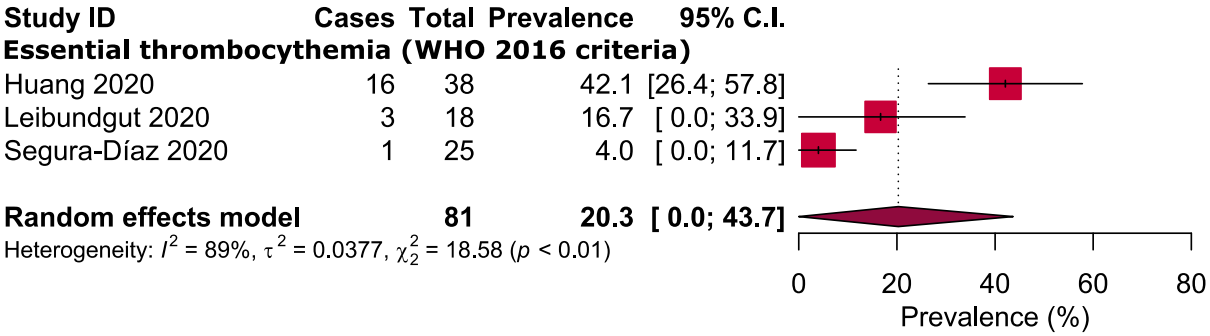
I


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (WHO 2001 criteria)
Delhommeau 2009 8 80 10.0 [3.4; 16.6]
Hussein 2010 1 43 2.3 [0.0; 6.8]
Tefferi 2009 3 57 5.3 [0.0; 11.1]
Random effects model 180 5.3 [1.1; 9.6]
Heterogeneity: I^2 = 44%, τ^2 = 0.0006, χ^2_2 = 3.58 (p = 0.17)
0 20 40 60 80
Prevalence (%)

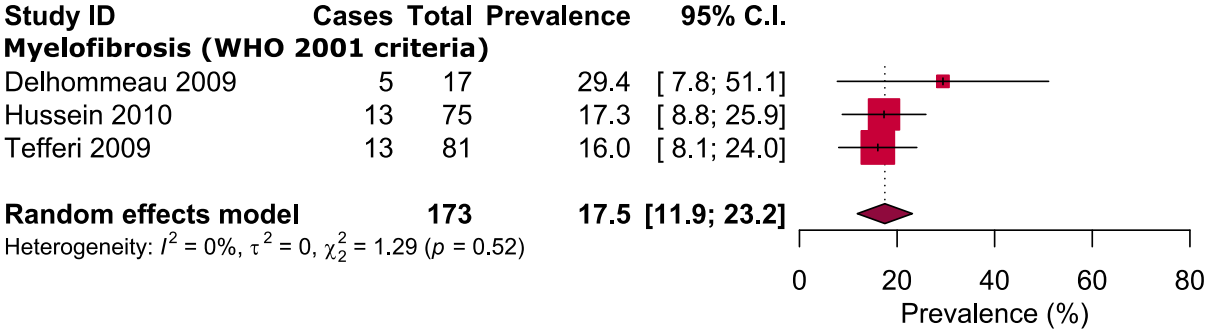
J


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (WHO 2008 criteria)
Brecqueville 2012 4 53 7.5 [0.4; 14.7]
Delic 2016 7 40 17.5 [5.7; 29.3]
Ha 2014 6 62 9.7 [2.3; 17.0]
Magor 2016 1 16 6.2 [0.0; 18.1]
Martínez-Avilés 2012 3 52 5.8 [0.0; 12.1]
Pardanani 2010 3 14 21.4 [0.0; 42.9]
Patriarca 2013 2 55 3.6 [0.0; 8.6]
Saint-Martin 2009 5 21 23.8 [5.6; 42.0]
Song 2017 2 27 7.4 [0.0; 17.3]
Tefferi 2010 13 177 7.3 [3.5; 11.2]
Tefferi 2016a 30 183 16.4 [11.0; 21.8]
Random effects model 700 9.4 [6.1; 12.6]
Heterogeneity: I^2 = 49%, τ^2 = 0.0013, χ^2_{10} = 19.76 (p = 0.03)
0 20 40 60 80
Prevalence (%)

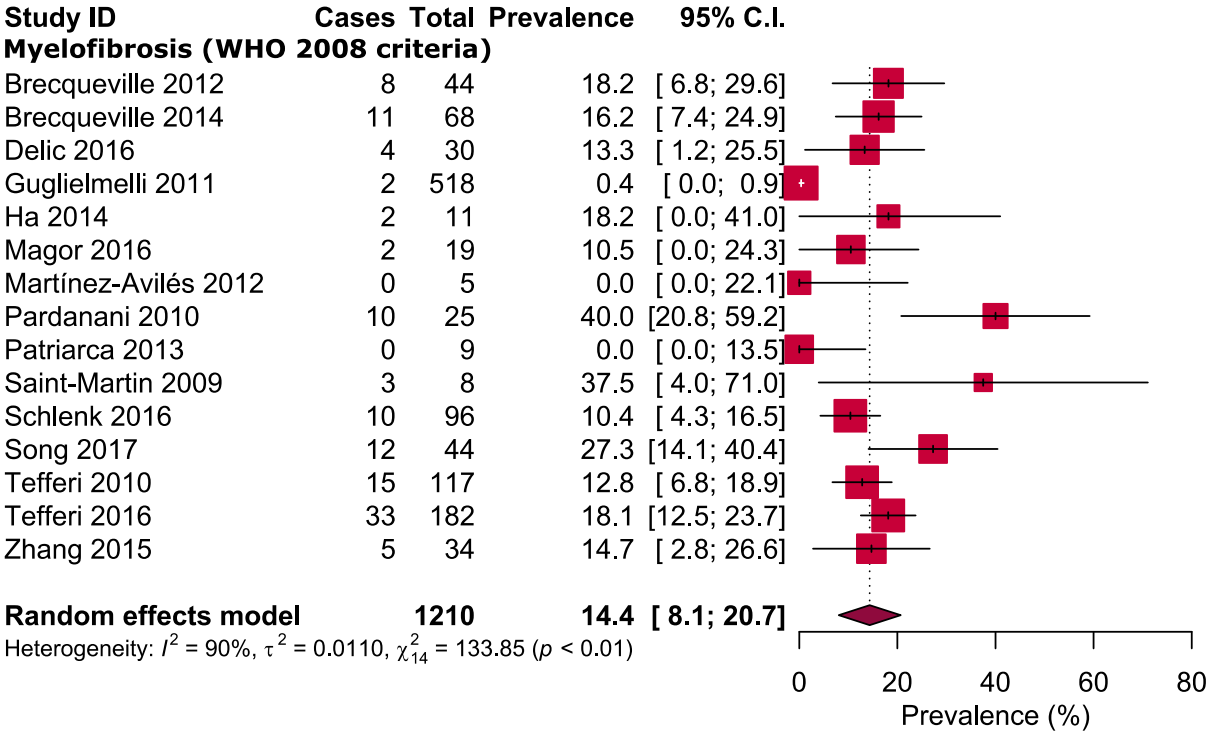
K


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (WHO 2016 criteria)
Huang 2020 16 38 42.1 [26.4; 57.8]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
Segura-Díaz 2020 1 25 4.0 [0.0; 11.7]
Random effects model 81 20.3 [0.0; 43.7]
Heterogeneity: I^2 = 89%, τ^2 = 0.0377, χ^2_2 = 18.58 (p < 0.01)
0 20 40 60 80
Prevalence (%)

L


Study ID Cases Total Prevalence 95% C.I.
Myelofibrosis (WHO 2001 criteria)
Delhommeau 2009 5 17 29.4 [7.8; 51.1]
Hussein 2010 13 75 17.3 [8.8; 25.9]
Tefferi 2009 13 81 16.0 [8.1; 24.0]
Random effects model 173 17.5 [11.9; 23.2]
Heterogeneity: I^2 = 0%, τ^2 = 0, χ^2_2 = 1.29 (p = 0.52)
0 20 40 60 80
Prevalence (%)

M



N

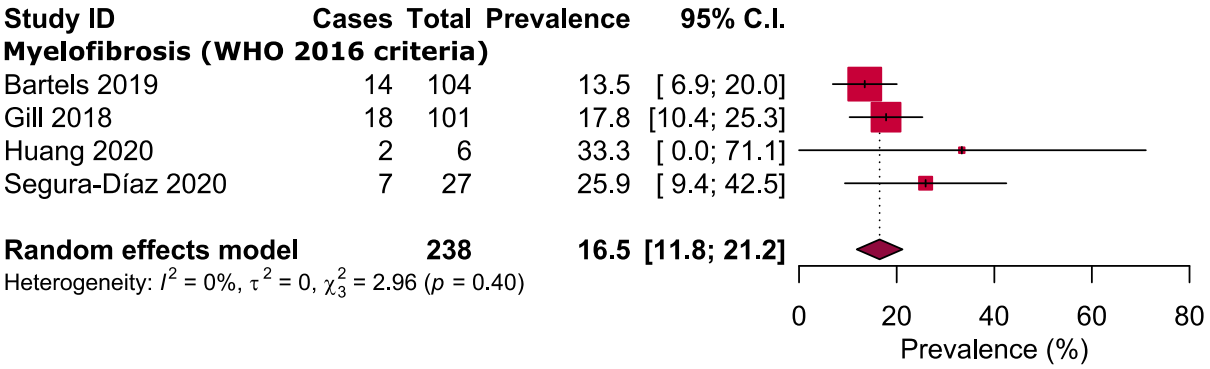
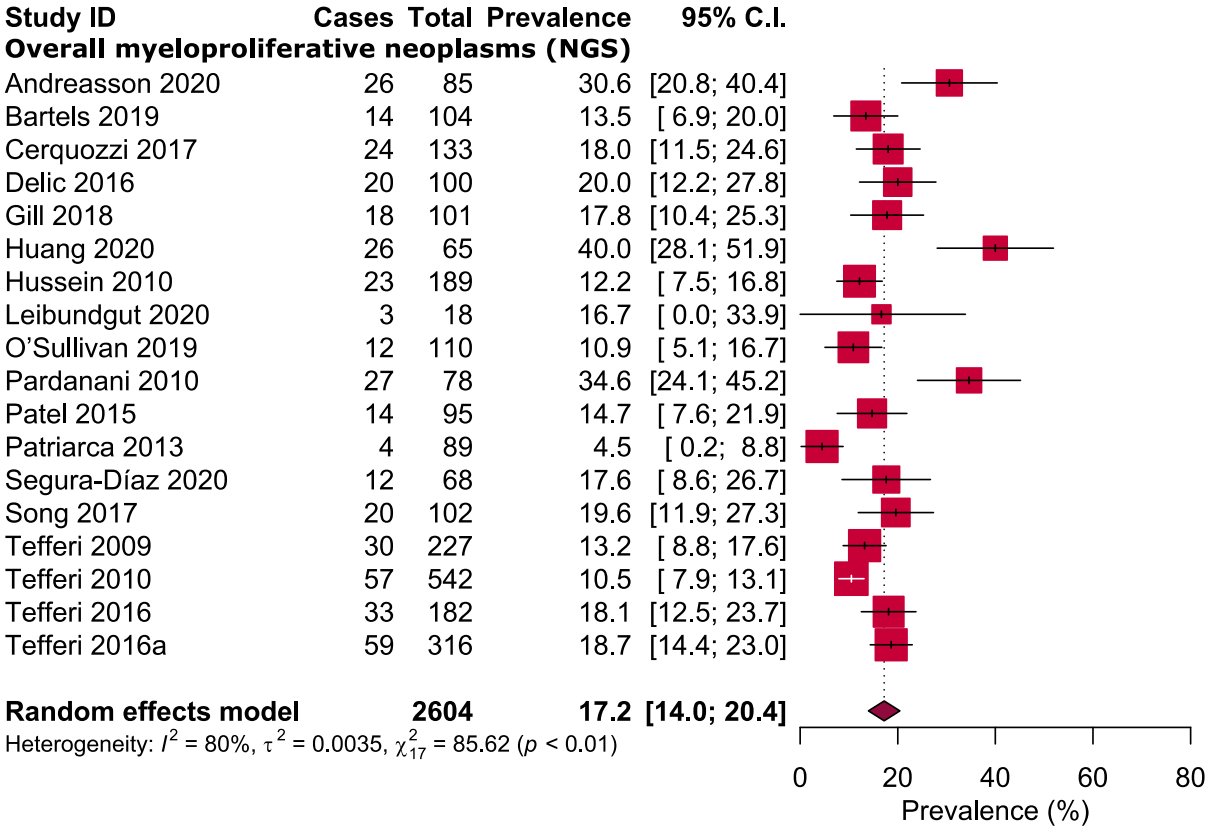
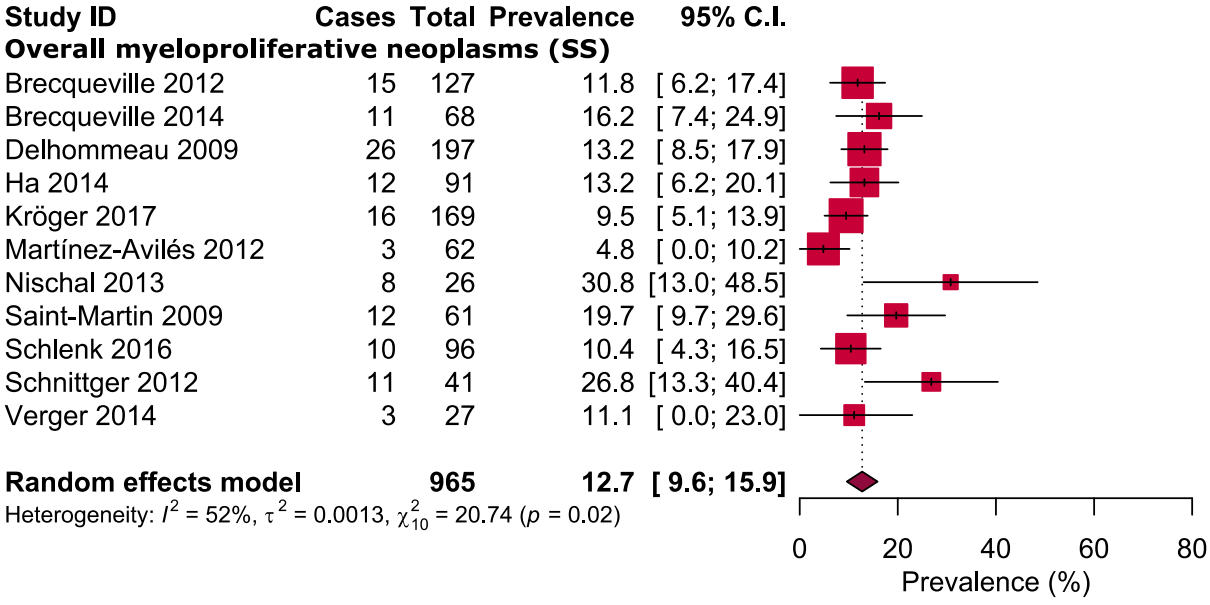


Figure S3. Prevalence of *TET2* gene mutations based on the WHO classification and diagnostic criteria of MPN.

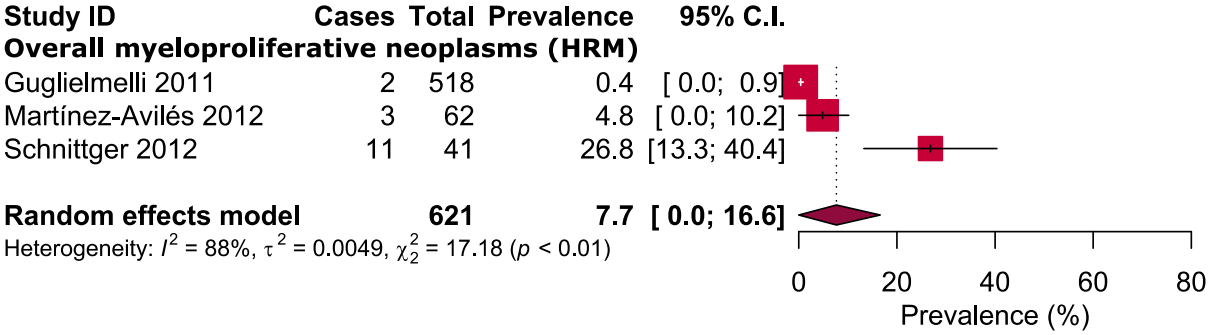
A


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (NGS)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Bartels 2019 14 104 13.5 [6.9; 20.0]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Delic 2016 20 100 20.0 [12.2; 27.8]
Gill 2018 18 101 17.8 [10.4; 25.3]
Huang 2020 26 65 40.0 [28.1; 51.9]
Hussein 2010 23 189 12.2 [7.5; 16.8]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Pardanani 2010 27 78 34.6 [24.1; 45.2]
Patel 2015 14 95 14.7 [7.6; 21.9]
Patriarca 2013 4 89 4.5 [0.2; 8.8]
Segura-Díaz 2020 12 68 17.6 [8.6; 26.7]
Song 2017 20 102 19.6 [11.9; 27.3]
Tefferi 2009 30 227 13.2 [8.8; 17.6]
Tefferi 2010 57 542 10.5 [7.9; 13.1]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Tefferi 2016a 59 316 18.7 [14.4; 23.0]
Random effects model 2604 17.2 [14.0; 20.4]
Heterogeneity: I^2 = 80%, τ^2 = 0.0035, χ^2_{17} = 85.62 (p < 0.01)
0 20 40 60 80
Prevalence (%)

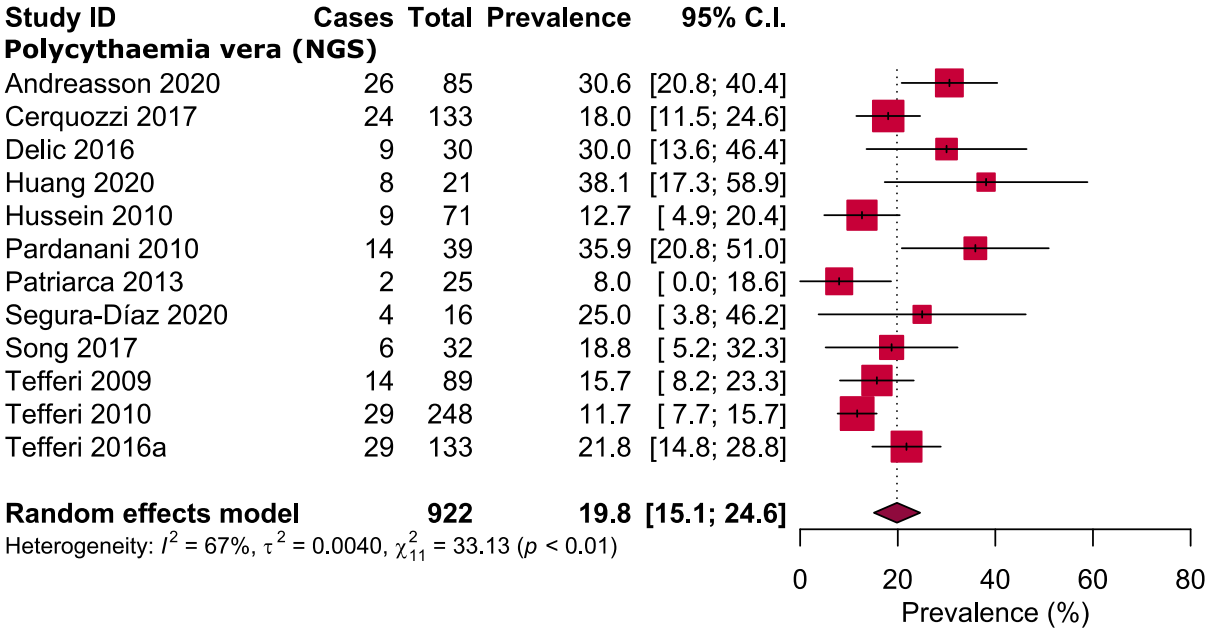
B


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (SS)
Brecqueville 2012 15 127 11.8 [6.2; 17.4]
Brecqueville 2014 11 68 16.2 [7.4; 24.9]
Delhommeau 2009 26 197 13.2 [8.5; 17.9]
Ha 2014 12 91 13.2 [6.2; 20.1]
Kröger 2017 16 169 9.5 [5.1; 13.9]
Martínez-Avilés 2012 3 62 4.8 [0.0; 10.2]
Nischal 2013 8 26 30.8 [13.0; 48.5]
Saint-Martin 2009 12 61 19.7 [9.7; 29.6]
Schlenk 2016 10 96 10.4 [4.3; 16.5]
Schnittger 2012 11 41 26.8 [13.3; 40.4]
Verger 2014 3 27 11.1 [0.0; 23.0]
Random effects model 965 12.7 [9.6; 15.9]
Heterogeneity: I^2 = 52%, τ^2 = 0.0013, χ^2_{10} = 20.74 (p = 0.02)
0 20 40 60 80
Prevalence (%)

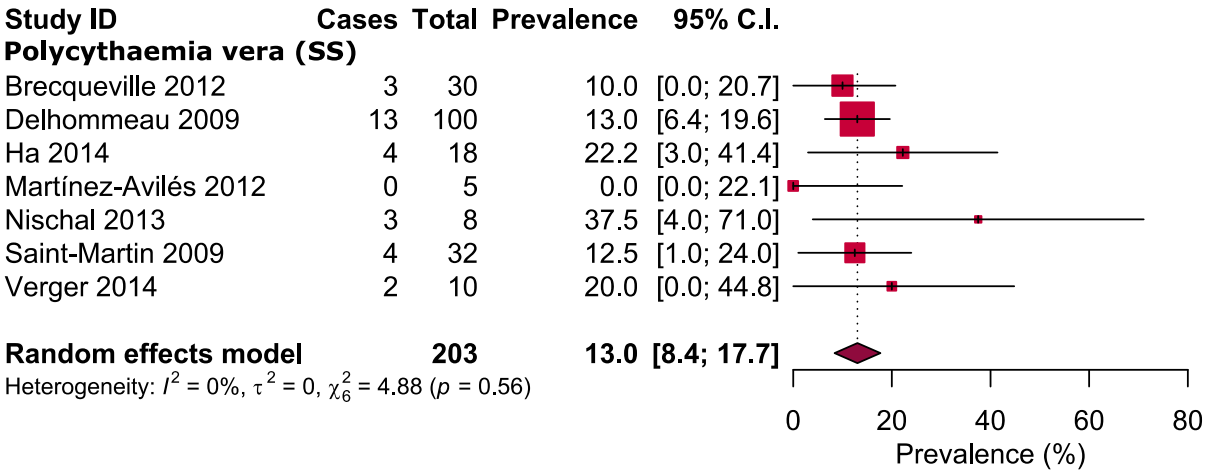
C


Study ID Cases Total Prevalence 95% C.I.
Overall myeloproliferative neoplasms (HRM)
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Martínez-Avilés 2012 3 62 4.8 [0.0; 10.2]
Schnittger 2012 11 41 26.8 [13.3; 40.4]
Random effects model 621 7.7 [0.0; 16.6]
Heterogeneity: I^2 = 88%, τ^2 = 0.0049, χ^2_2 = 17.18 (p < 0.01)
0 20 40 60 80
Prevalence (%)

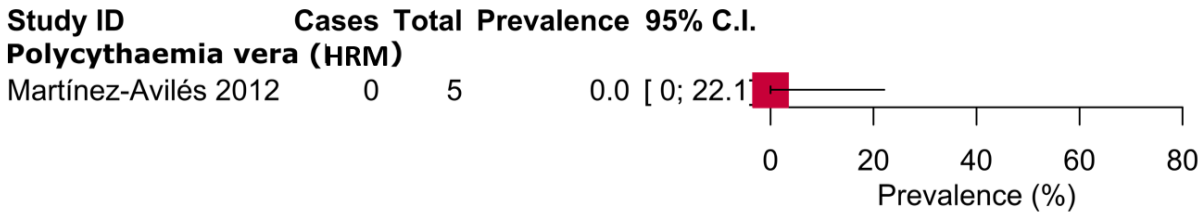
D


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (NGS)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Delic 2016 9 30 30.0 [13.6; 46.4]
Huang 2020 8 21 38.1 [17.3; 58.9]
Hussein 2010 9 71 12.7 [4.9; 20.4]
Pardanani 2010 14 39 35.9 [20.8; 51.0]
Patriarca 2013 2 25 8.0 [0.0; 18.6]
Segura-Díaz 2020 4 16 25.0 [3.8; 46.2]
Song 2017 6 32 18.8 [5.2; 32.3]
Tefferi 2009 14 89 15.7 [8.2; 23.3]
Tefferi 2010 29 248 11.7 [7.7; 15.7]
Tefferi 2016a 29 133 21.8 [14.8; 28.8]
Random effects model 922 19.8 [15.1; 24.6]
Heterogeneity: I^2 = 67%, τ^2 = 0.0040, χ^2_{11} = 33.13 (p < 0.01)
0 20 40 60 80
Prevalence (%)

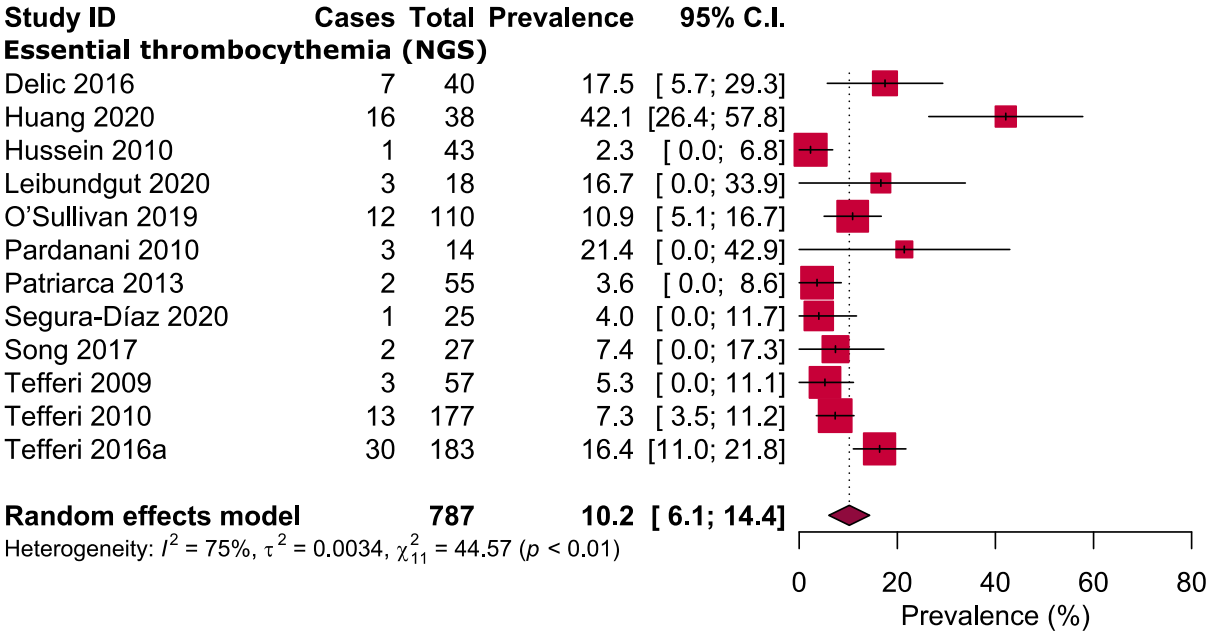
E


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (SS)
Brecqueville 2012 3 30 10.0 [0.0; 20.7]
Delhommeau 2009 13 100 13.0 [6.4; 19.6]
Ha 2014 4 18 22.2 [3.0; 41.4]
Martínez-Avilés 2012 0 5 0.0 [0.0; 22.1]
Nischal 2013 3 8 37.5 [4.0; 71.0]
Saint-Martin 2009 4 32 12.5 [1.0; 24.0]
Verger 2014 2 10 20.0 [0.0; 44.8]
Random effects model 203 13.0 [8.4; 17.7]
Heterogeneity: I^2 = 0%, τ^2 = 0, χ^2_6 = 4.88 (p = 0.56)
0 20 40 60 80
Prevalence (%)

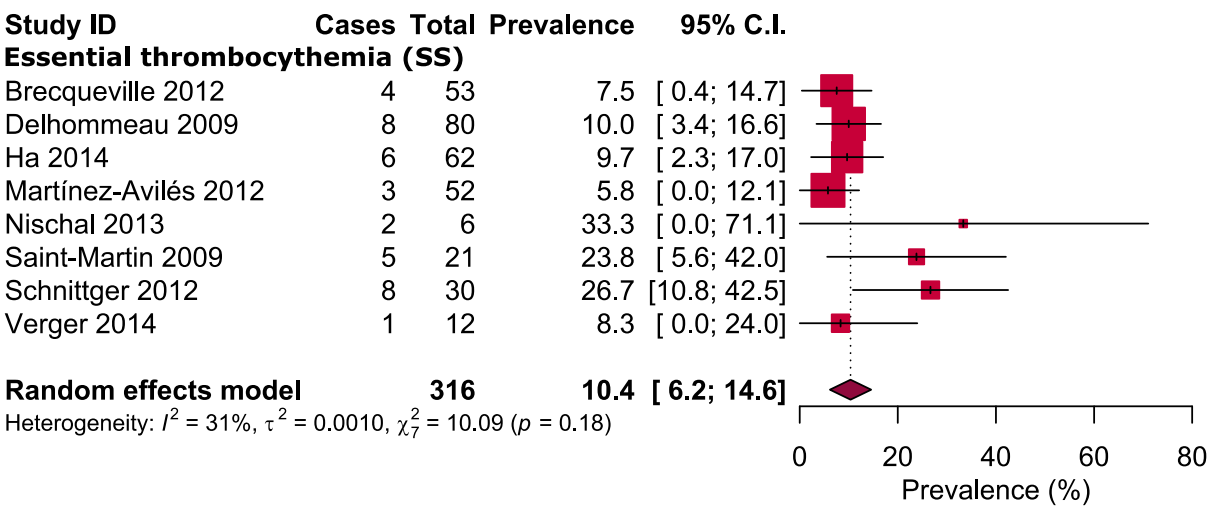
F


Study ID Cases Total Prevalence 95% C.I.
Polycythaemia vera (HRM)
Martínez-Avilés 2012 0 5 0.0 [0; 22.1]
0 20 40 60 80
Prevalence (%)

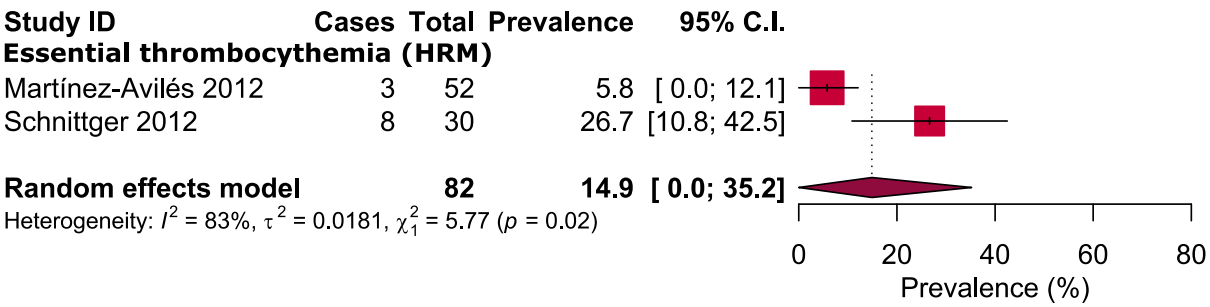
G


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (NGS)
Delic 2016 7 40 17.5 [5.7; 29.3]
Huang 2020 16 38 42.1 [26.4; 57.8]
Hussein 2010 1 43 2.3 [0.0; 6.8]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Pardanani 2010 3 14 21.4 [0.0; 42.9]
Patriarca 2013 2 55 3.6 [0.0; 8.6]
Segura-Díaz 2020 1 25 4.0 [0.0; 11.7]
Song 2017 2 27 7.4 [0.0; 17.3]
Tefferi 2009 3 57 5.3 [0.0; 11.1]
Tefferi 2010 13 177 7.3 [3.5; 11.2]
Tefferi 2016a 30 183 16.4 [11.0; 21.8]
Random effects model 787 10.2 [6.1; 14.4]
Heterogeneity: I^2 = 75%, τ^2 = 0.0034, χ^2_{11} = 44.57 (p < 0.01)
0 20 40 60 80
Prevalence (%)

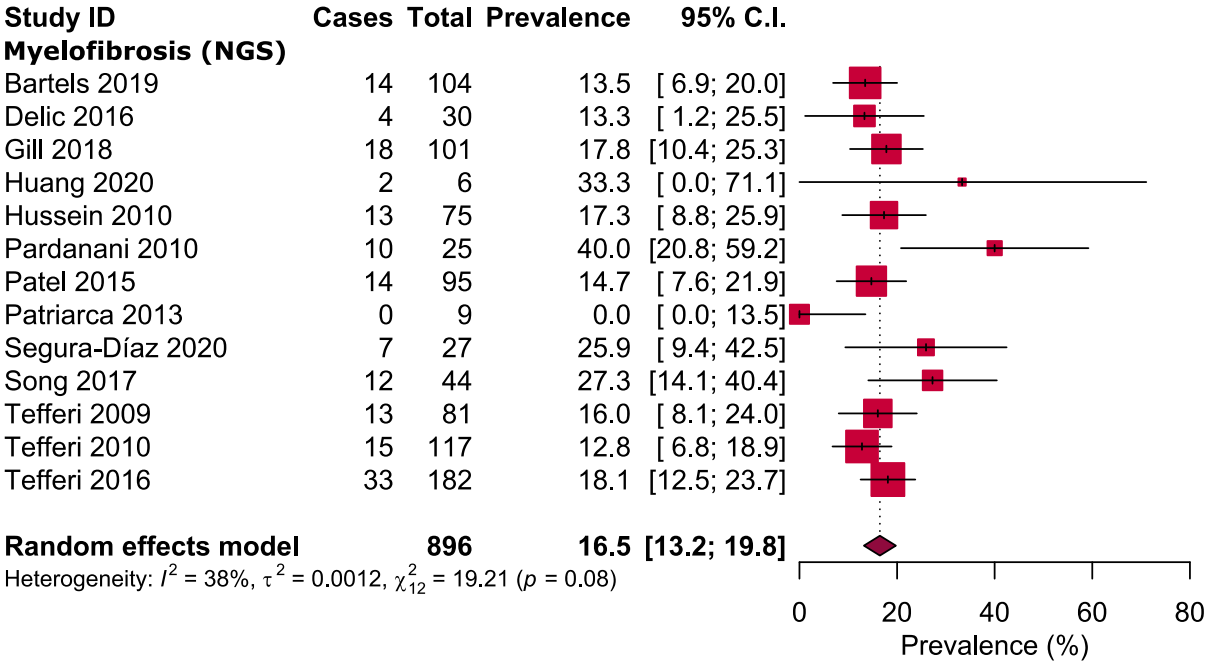
H


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (SS)
Brecqueville 2012 4 53 7.5 [0.4; 14.7]
Delhommeau 2009 8 80 10.0 [3.4; 16.6]
Ha 2014 6 62 9.7 [2.3; 17.0]
Martínez-Avilés 2012 3 52 5.8 [0.0; 12.1]
Nischal 2013 2 6 33.3 [0.0; 71.1]
Saint-Martin 2009 5 21 23.8 [5.6; 42.0]
Schnittger 2012 8 30 26.7 [10.8; 42.5]
Verger 2014 1 12 8.3 [0.0; 24.0]
Random effects model 316 10.4 [6.2; 14.6]
Heterogeneity: I^2 = 31%, τ^2 = 0.0010, χ^2_7 = 10.09 (p = 0.18)
0 20 40 60 80
Prevalence (%)

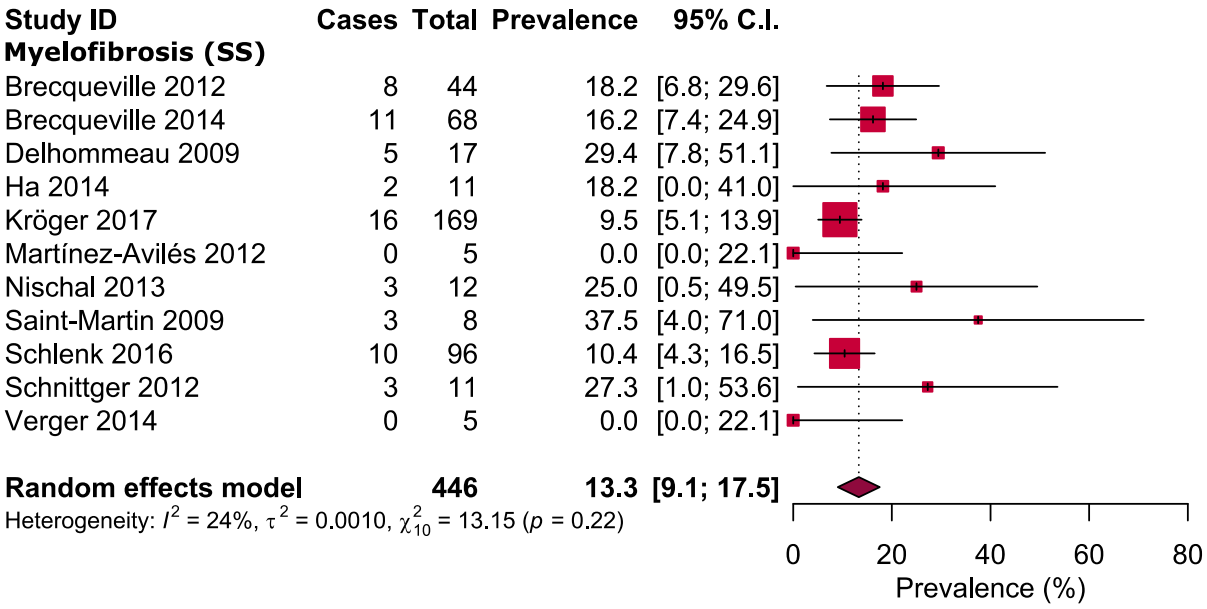
I


Study ID Cases Total Prevalence 95% C.I.
Essential thrombocythemia (HRM)
Martínez-Avilés 2012 3 52 5.8 [0.0; 12.1]
Schnittger 2012 8 30 26.7 [10.8; 42.5]
Random effects model 82 14.9 [0.0; 35.2]
Heterogeneity: I^2 = 83%, τ^2 = 0.0181, χ^2_1 = 5.77 (p = 0.02)
0 20 40 60 80
Prevalence (%)

J



K



L

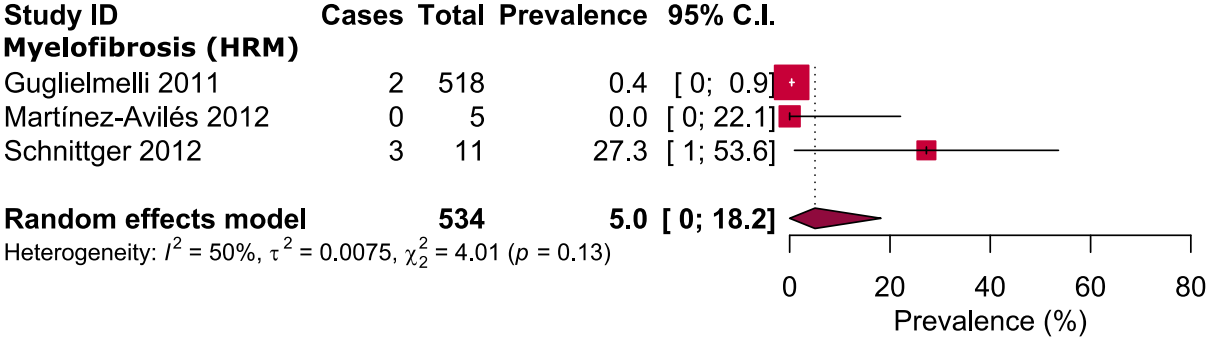
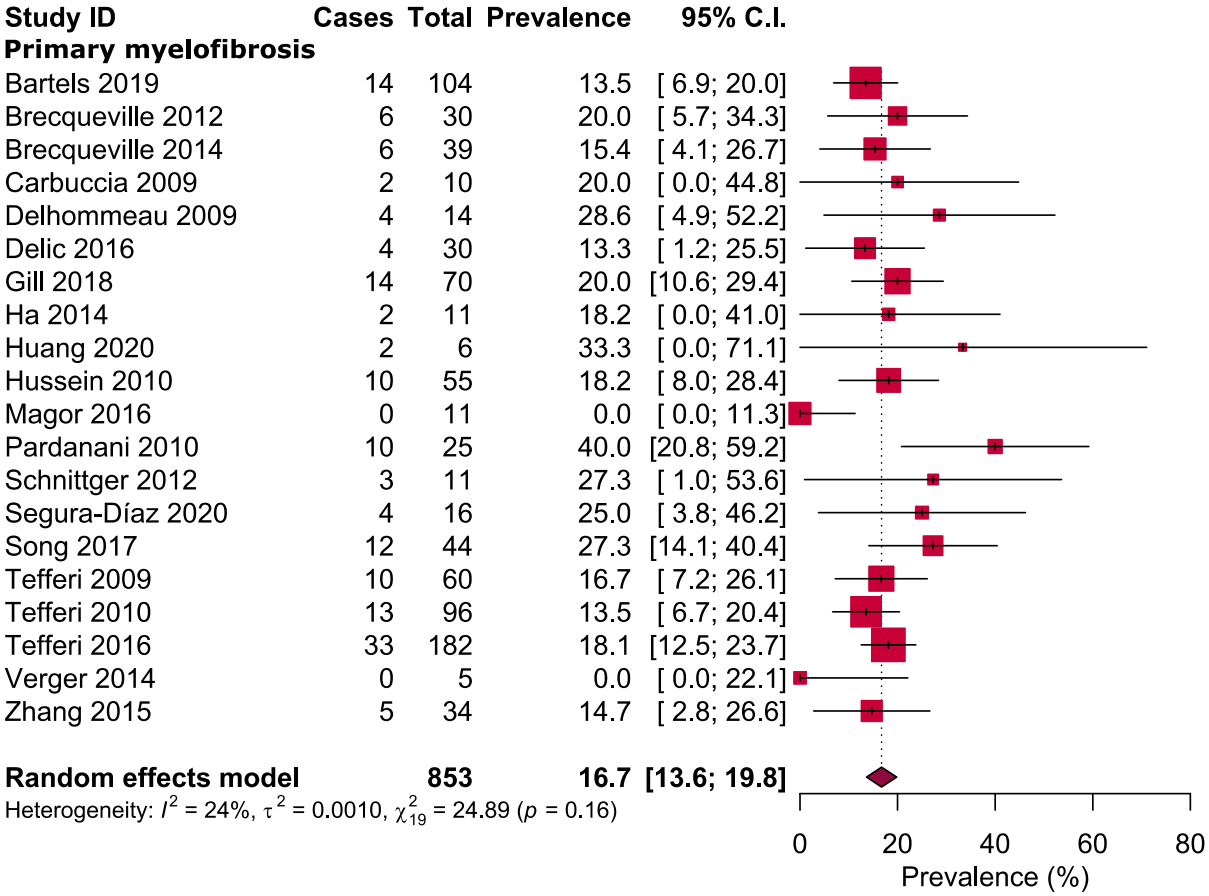


Figure S4. Prevalence of *TET2* gene mutations based on different methods used to detect *TET2* gene mutations in MPN.

A



B

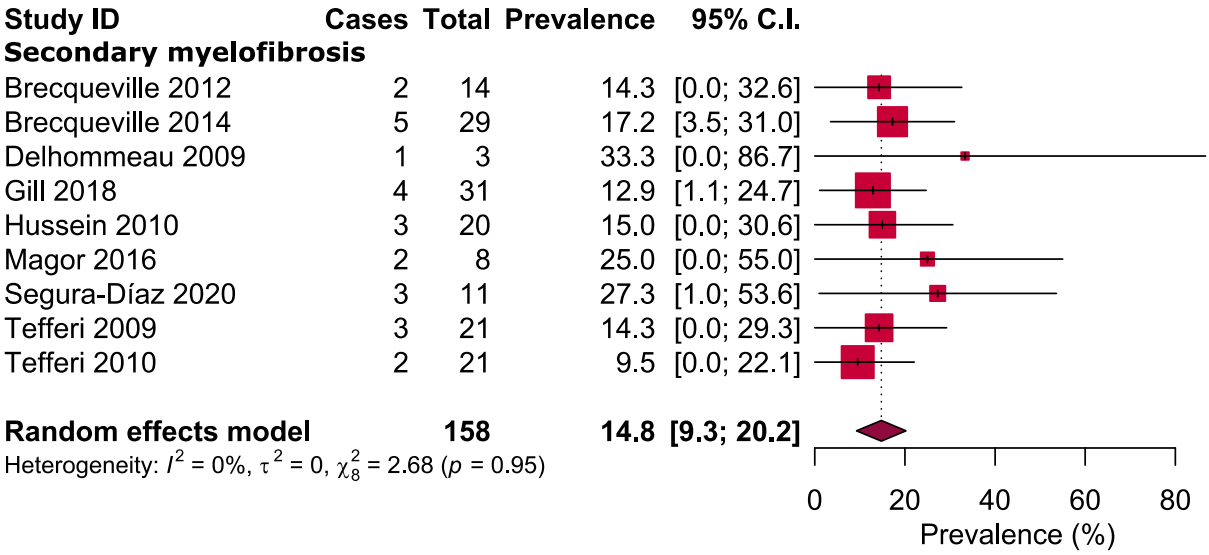
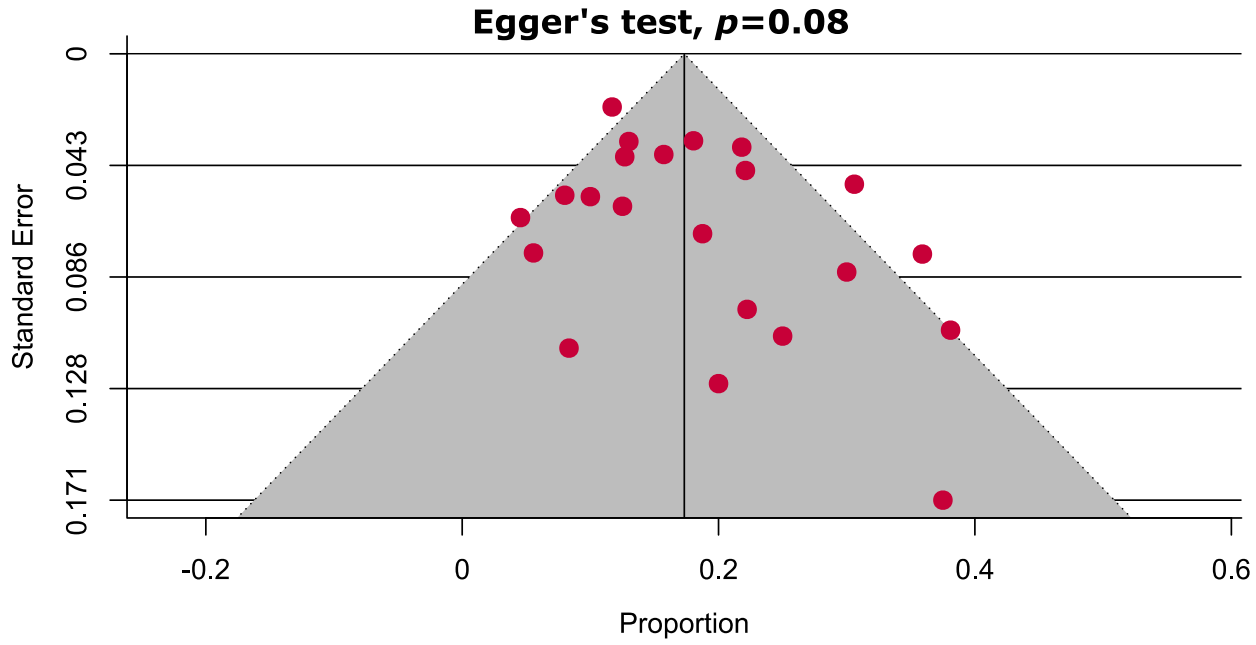
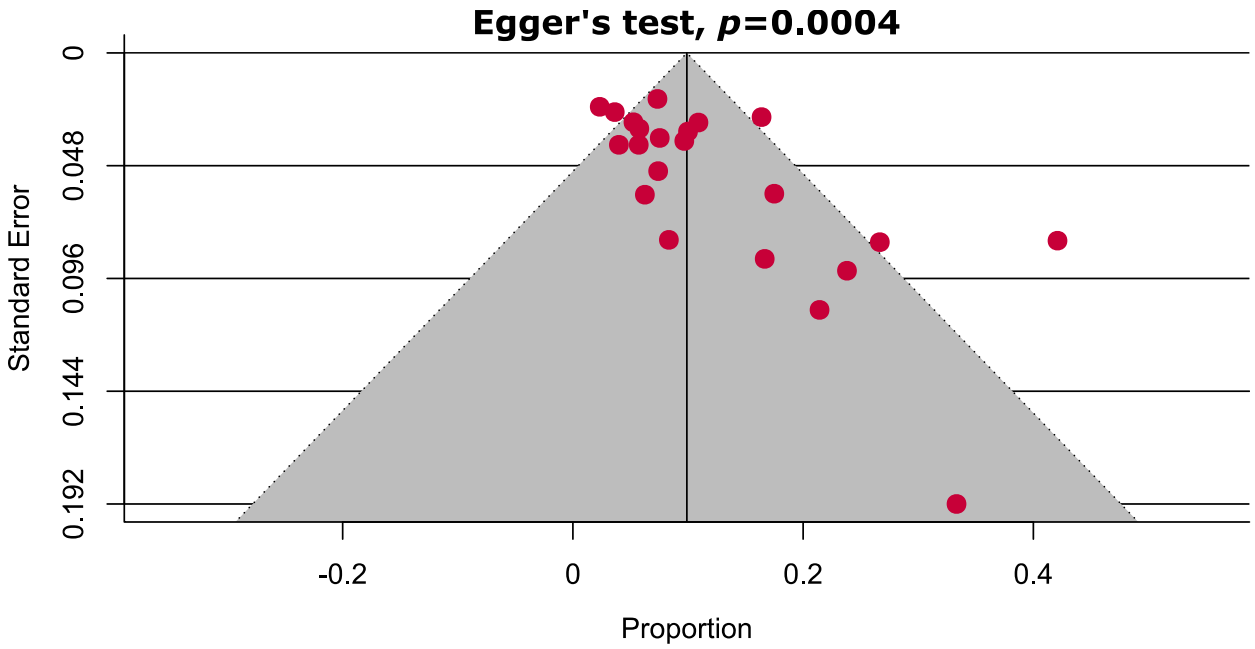


Figure S5. Subgroup analysis. Prevalence of *TET2* gene mutations in patients with (**A**) PMF and (**B**) SMF.

A


Egger's test, p=0.08
Standard Error
0
0.043
0.086
0.128
0.171
-0.2
0
0.2
0.4
0.6
Proportion

B


Egger's test, p=0.0004
Standard Error
0
0.048
0.096
0.144
0.192
-0.2
0
0.2
0.4
Proportion

C

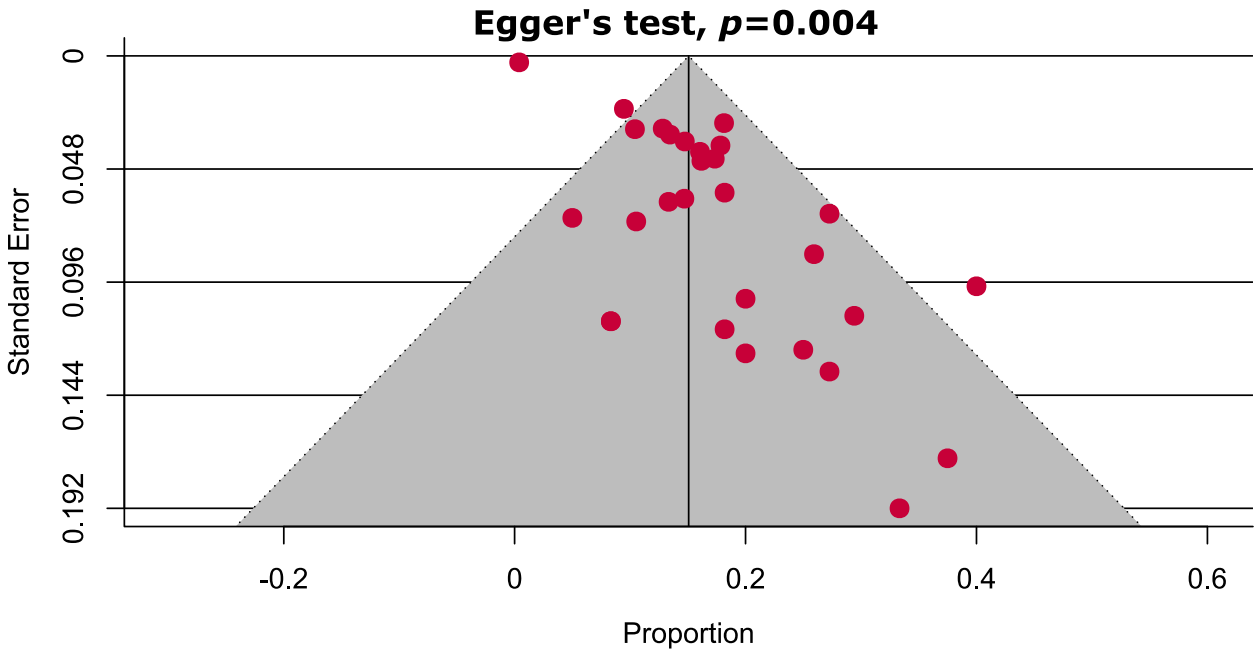
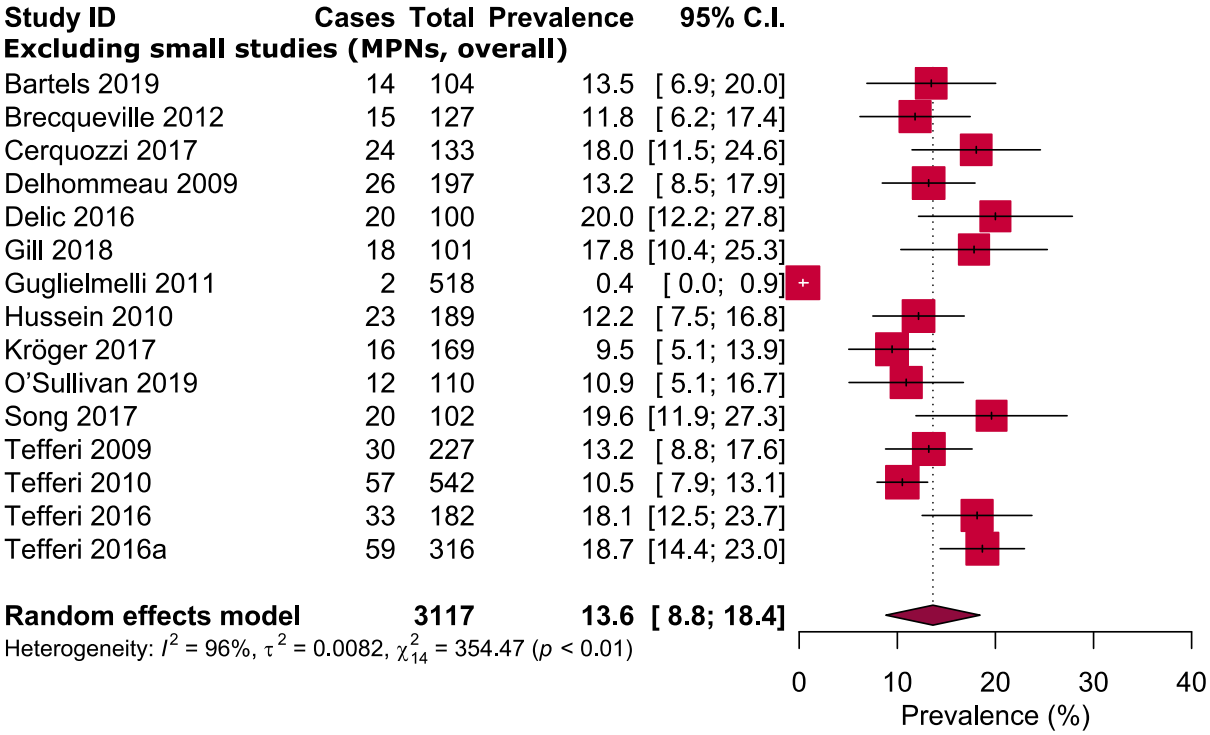
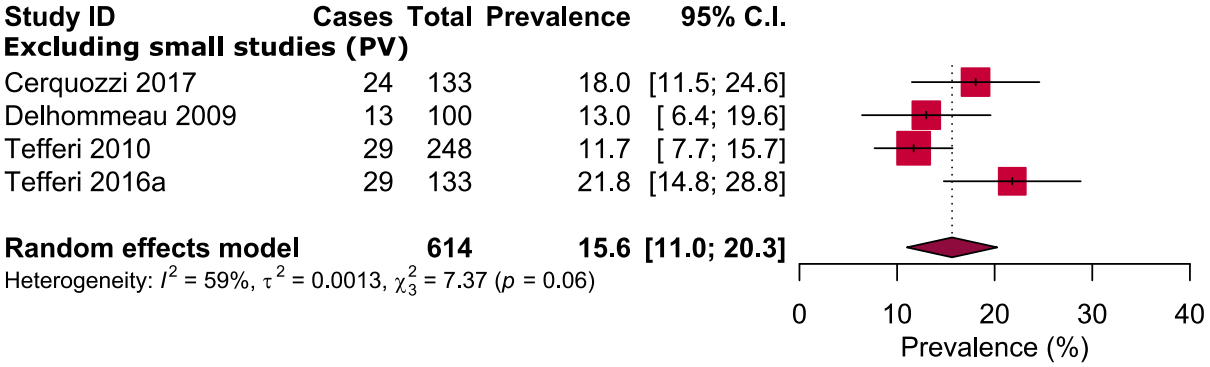


Figure S6. Funnel plots estimating the prevalence of *TET2* gene mutations in patients with (**A**) polycythaemia vera, (**B**) essential thrombocythaemia and (**C**) myelofibrosis.

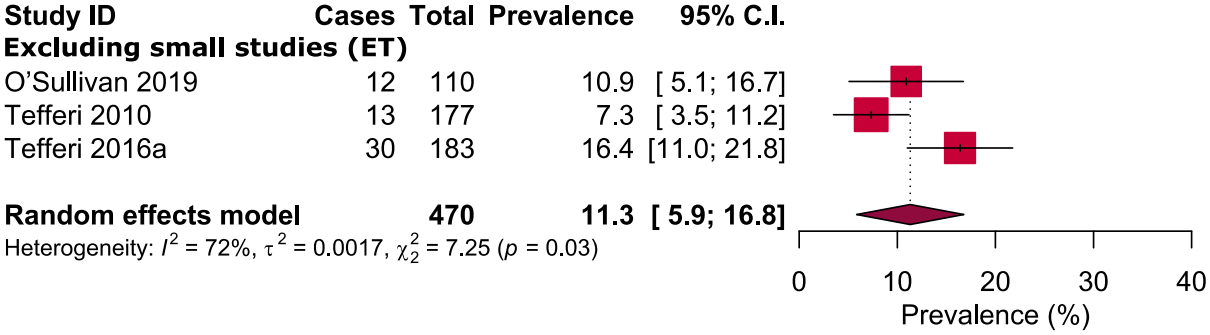
A


Study ID Cases Total Prevalence 95% C.I.
Excluding small studies (MPNs, overall)
Bartels 2019 14 104 13.5 [6.9; 20.0]
Brecqueville 2012 15 127 11.8 [6.2; 17.4]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Delhommeau 2009 26 197 13.2 [8.5; 17.9]
Delic 2016 20 100 20.0 [12.2; 27.8]
Gill 2018 18 101 17.8 [10.4; 25.3]
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Hussein 2010 23 189 12.2 [7.5; 16.8]
Kröger 2017 16 169 9.5 [5.1; 13.9]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Song 2017 20 102 19.6 [11.9; 27.3]
Tefferi 2009 30 227 13.2 [8.8; 17.6]
Tefferi 2010 57 542 10.5 [7.9; 13.1]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Tefferi 2016a 59 316 18.7 [14.4; 23.0]
Random effects model 3117 13.6 [8.8; 18.4]
Heterogeneity: I^2 = 96%, τ^2 = 0.0082, χ^2_{14} = 354.47 (p < 0.01)
0 10 20 30 40
Prevalence (%)

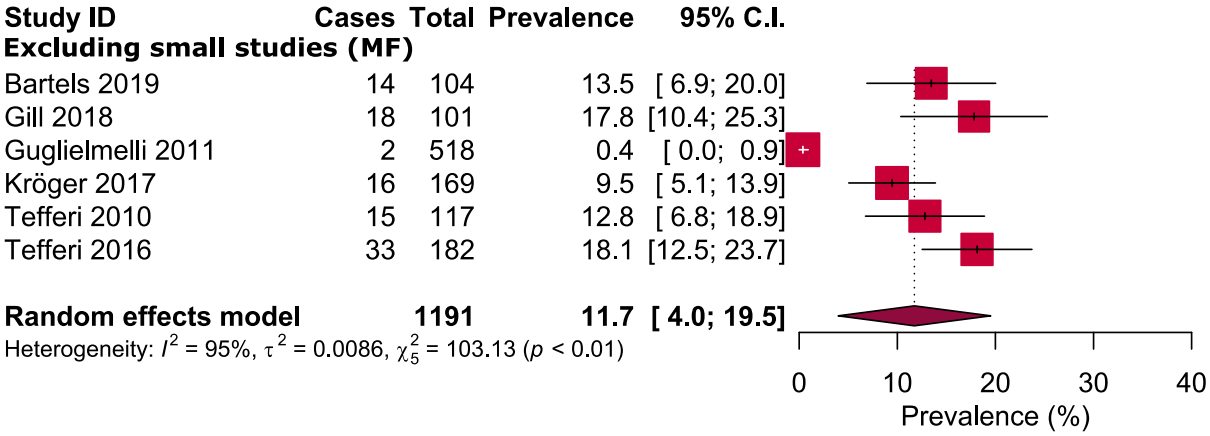
B


Study ID Cases Total Prevalence 95% C.I.
Excluding small studies (PV)
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Delhommeau 2009 13 100 13.0 [6.4; 19.6]
Tefferi 2010 29 248 11.7 [7.7; 15.7]
Tefferi 2016a 29 133 21.8 [14.8; 28.8]
Random effects model 614 15.6 [11.0; 20.3]
Heterogeneity: I^2 = 59%, τ^2 = 0.0013, χ^2_3 = 7.37 (p = 0.06)
0 10 20 30 40
Prevalence (%)

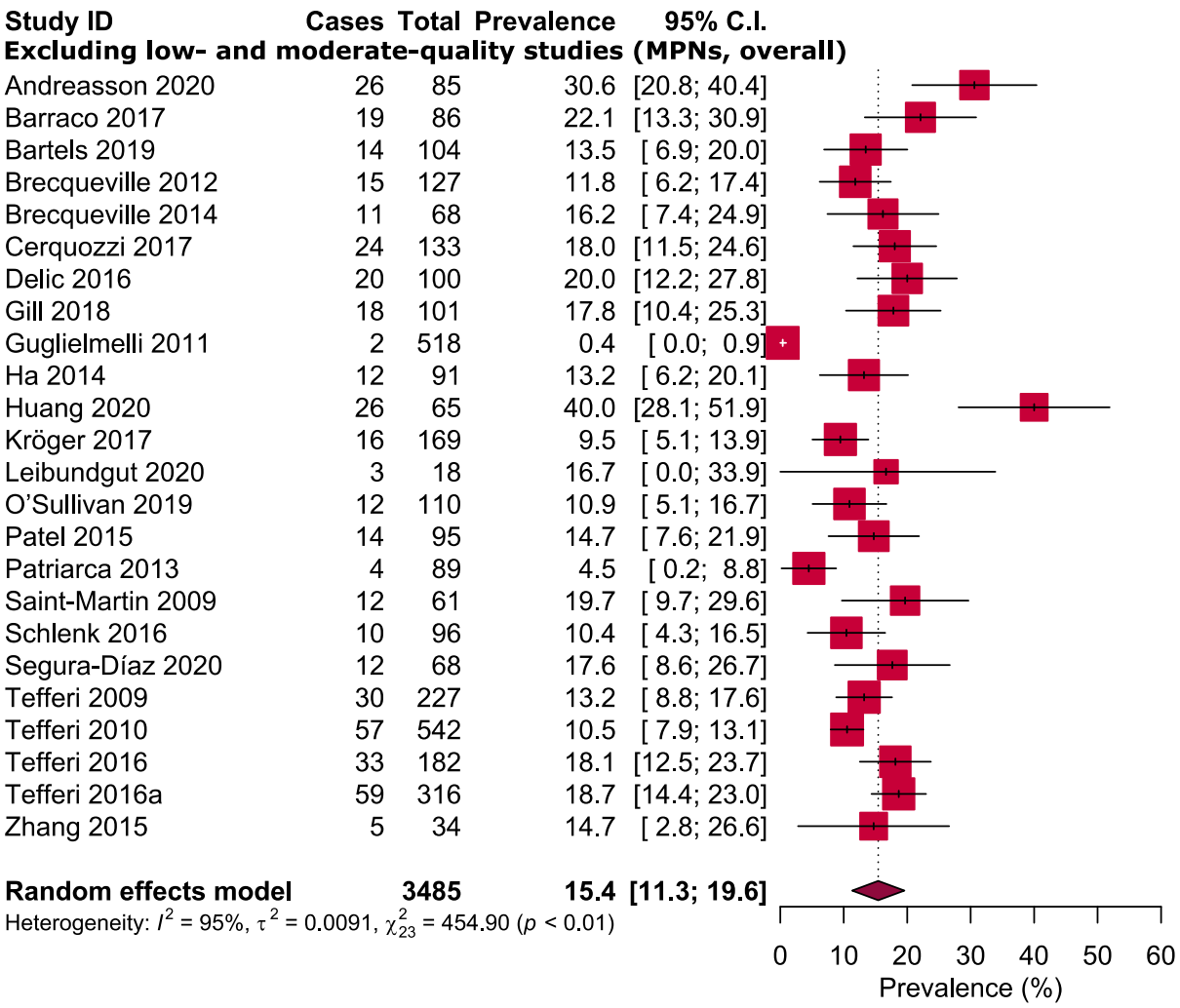
C


Study ID Cases Total Prevalence 95% C.I.
Excluding small studies (ET)
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Tefferi 2010 13 177 7.3 [3.5; 11.2]
Tefferi 2016a 30 183 16.4 [11.0; 21.8]
Random effects model 470 11.3 [5.9; 16.8]
Heterogeneity: I^2 = 72%, τ^2 = 0.0017, χ^2_2 = 7.25 (p = 0.03)
0 10 20 30 40
Prevalence (%)

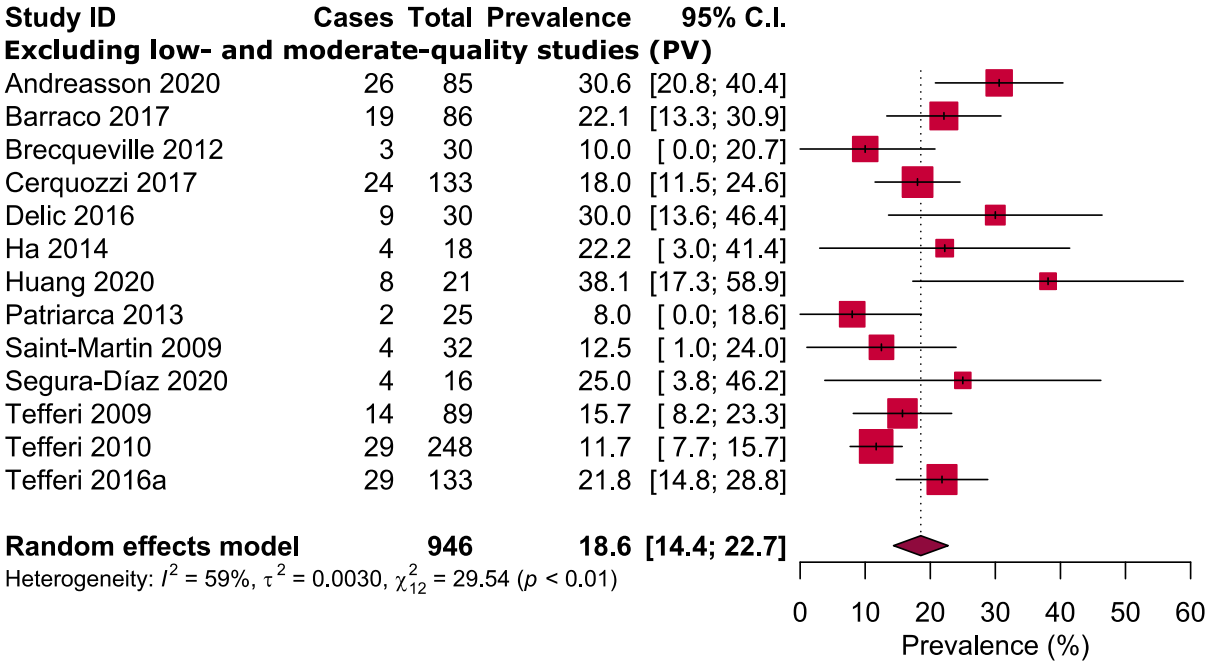
D


Study ID Cases Total Prevalence 95% C.I.
Excluding small studies (MF)
Bartels 2019 14 104 13.5 [6.9; 20.0]
Gill 2018 18 101 17.8 [10.4; 25.3]
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Kröger 2017 16 169 9.5 [5.1; 13.9]
Tefferi 2010 15 117 12.8 [6.8; 18.9]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Random effects model 1191 11.7 [4.0; 19.5]
Heterogeneity: I^2 = 95%, τ^2 = 0.0086, χ^2_5 = 103.13 (p < 0.01)
0 10 20 30 40
Prevalence (%)

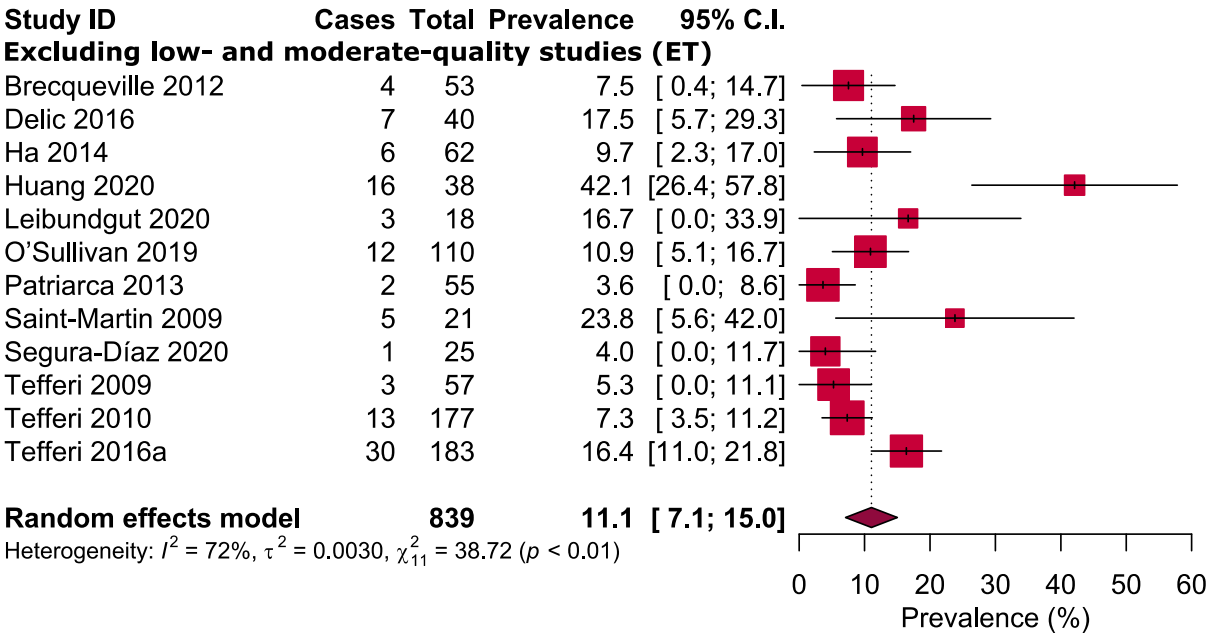
E


Study ID Cases Total Prevalence 95% C.I.
Excluding low- and moderate-quality studies (MPNs, overall)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Barraco 2017 19 86 22.1 [13.3; 30.9]
Bartels 2019 14 104 13.5 [6.9; 20.0]
Brecqueville 2012 15 127 11.8 [6.2; 17.4]
Brecqueville 2014 11 68 16.2 [7.4; 24.9]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Delic 2016 20 100 20.0 [12.2; 27.8]
Gill 2018 18 101 17.8 [10.4; 25.3]
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Ha 2014 12 91 13.2 [6.2; 20.1]
Huang 2020 26 65 40.0 [28.1; 51.9]
Kröger 2017 16 169 9.5 [5.1; 13.9]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Patel 2015 14 95 14.7 [7.6; 21.9]
Patriarca 2013 4 89 4.5 [0.2; 8.8]
Saint-Martin 2009 12 61 19.7 [9.7; 29.6]
Schlenk 2016 10 96 10.4 [4.3; 16.5]
Segura-Díaz 2020 12 68 17.6 [8.6; 26.7]
Tefferi 2009 30 227 13.2 [8.8; 17.6]
Tefferi 2010 57 542 10.5 [7.9; 13.1]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Tefferi 2016a 59 316 18.7 [14.4; 23.0]
Zhang 2015 5 34 14.7 [2.8; 26.6]
Random effects model 3485 15.4 [11.3; 19.6]
Heterogeneity: I^2 = 95%, τ^2 = 0.0091, χ^2_{23} = 454.90 (p < 0.01)
0 10 20 30 40 50 60
Prevalence (%)

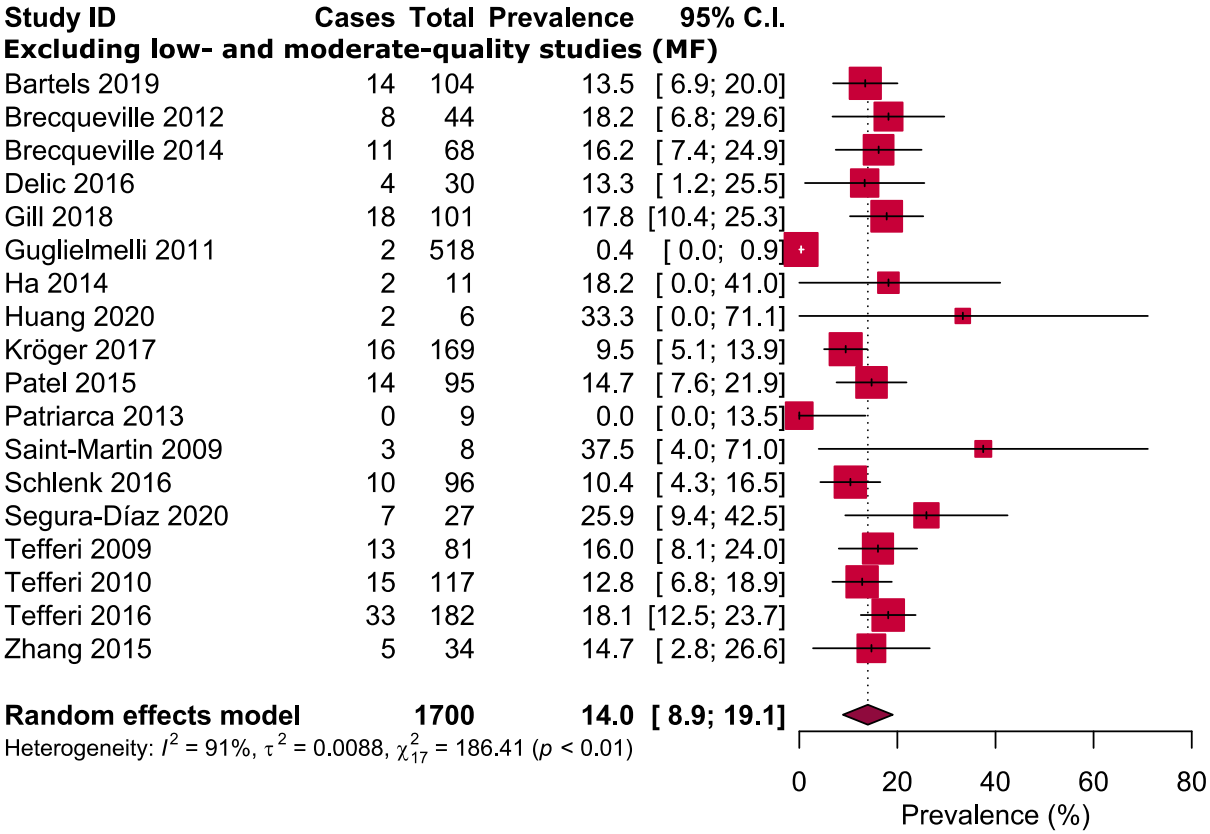
F


Study ID Cases Total Prevalence 95% C.I.
Excluding low- and moderate-quality studies (PV)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Barraco 2017 19 86 22.1 [13.3; 30.9]
Brecqueville 2012 3 30 10.0 [0.0; 20.7]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Delic 2016 9 30 30.0 [13.6; 46.4]
Ha 2014 4 18 22.2 [3.0; 41.4]
Huang 2020 8 21 38.1 [17.3; 58.9]
Patriarca 2013 2 25 8.0 [0.0; 18.6]
Saint-Martin 2009 4 32 12.5 [1.0; 24.0]
Segura-Díaz 2020 4 16 25.0 [3.8; 46.2]
Tefferi 2009 14 89 15.7 [8.2; 23.3]
Tefferi 2010 29 248 11.7 [7.7; 15.7]
Tefferi 2016a 29 133 21.8 [14.8; 28.8]
Random effects model 946 18.6 [14.4; 22.7]
Heterogeneity: I^2 = 59%, τ^2 = 0.0030, χ^2_{12} = 29.54 (p < 0.01)
0 10 20 30 40 50 60
Prevalence (%)

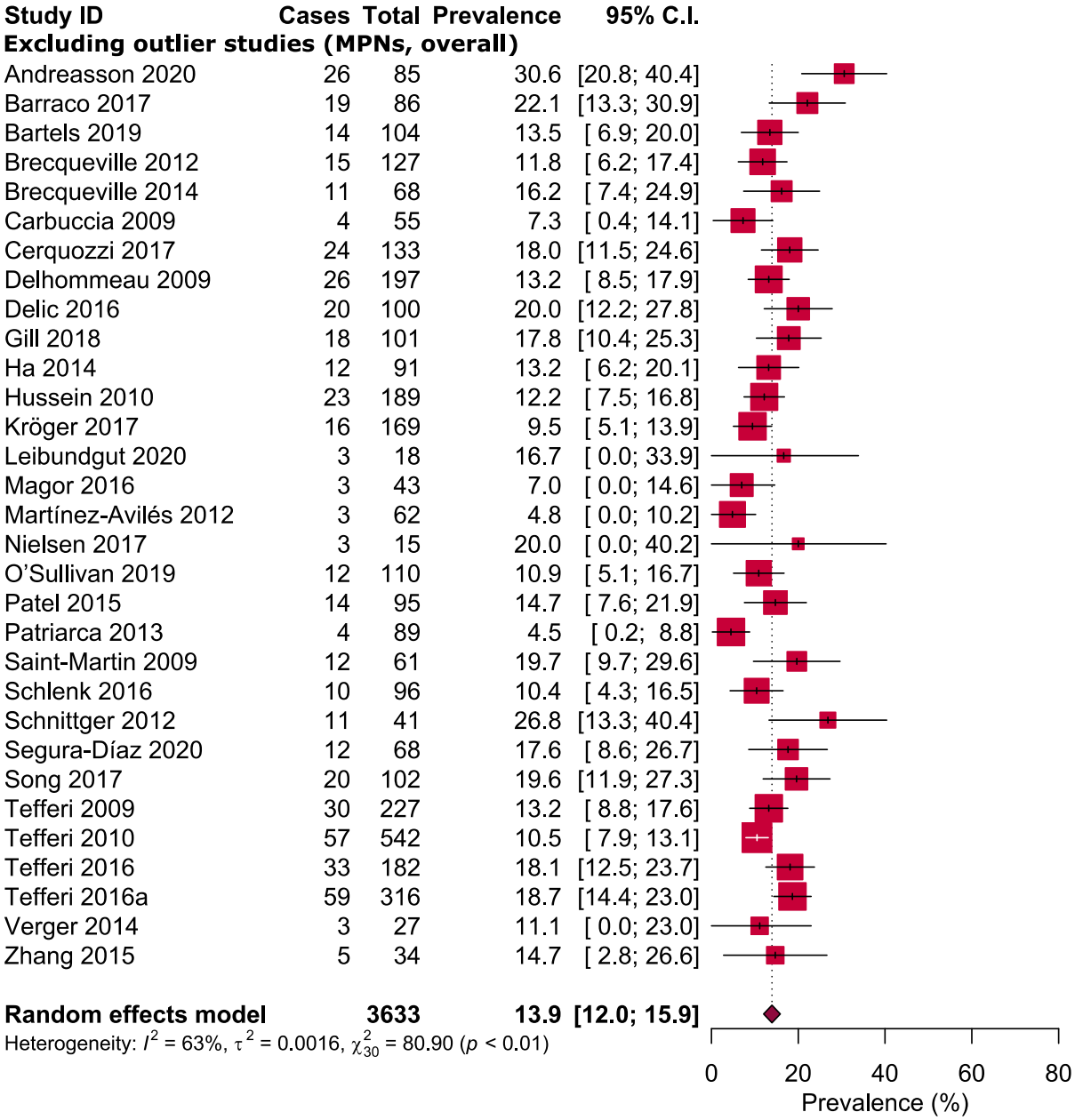
G


Study ID Cases Total Prevalence 95% C.I.
Excluding low- and moderate-quality studies (ET)
Brecqueville 2012 4 53 7.5 [0.4; 14.7]
Delic 2016 7 40 17.5 [5.7; 29.3]
Ha 2014 6 62 9.7 [2.3; 17.0]
Huang 2020 16 38 42.1 [26.4; 57.8]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Patriarca 2013 2 55 3.6 [0.0; 8.6]
Saint-Martin 2009 5 21 23.8 [5.6; 42.0]
Segura-Díaz 2020 1 25 4.0 [0.0; 11.7]
Tefferi 2009 3 57 5.3 [0.0; 11.1]
Tefferi 2010 13 177 7.3 [3.5; 11.2]
Tefferi 2016a 30 183 16.4 [11.0; 21.8]
Random effects model 839 11.1 [7.1; 15.0]
Heterogeneity: I^2 = 72%, τ^2 = 0.0030, χ^2_{11} = 38.72 (p < 0.01)
0 10 20 30 40 50 60
Prevalence (%)

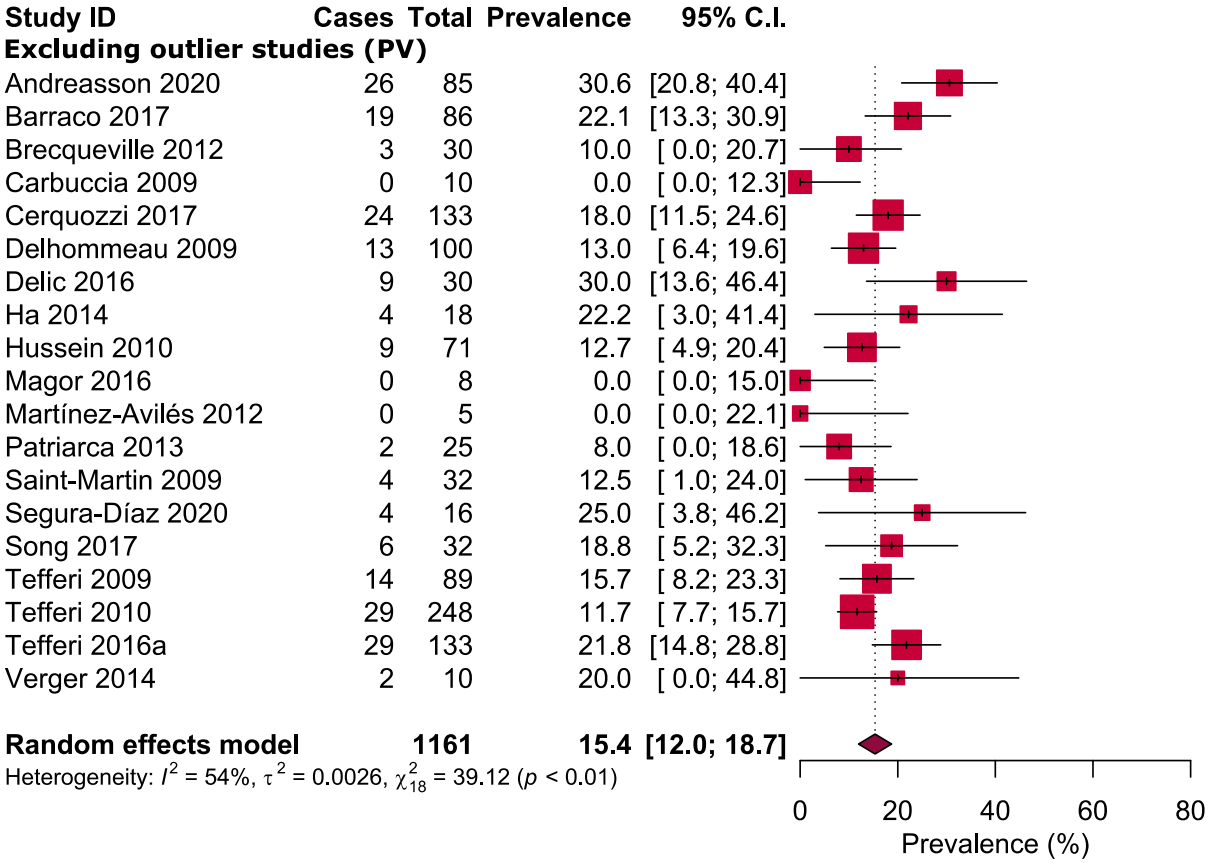
H


Study ID Cases Total Prevalence 95% C.I.
Excluding low- and moderate-quality studies (MF)
Bartels 2019 14 104 13.5 [6.9; 20.0]
Brecqueville 2012 8 44 18.2 [6.8; 29.6]
Brecqueville 2014 11 68 16.2 [7.4; 24.9]
Delic 2016 4 30 13.3 [1.2; 25.5]
Gill 2018 18 101 17.8 [10.4; 25.3]
Guglielmelli 2011 2 518 0.4 [0.0; 0.9]
Ha 2014 2 11 18.2 [0.0; 41.0]
Huang 2020 2 6 33.3 [0.0; 71.1]
Kröger 2017 16 169 9.5 [5.1; 13.9]
Patel 2015 14 95 14.7 [7.6; 21.9]
Patriarca 2013 0 9 0.0 [0.0; 13.5]
Saint-Martin 2009 3 8 37.5 [4.0; 71.0]
Schlenk 2016 10 96 10.4 [4.3; 16.5]
Segura-Díaz 2020 7 27 25.9 [9.4; 42.5]
Tefferi 2009 13 81 16.0 [8.1; 24.0]
Tefferi 2010 15 117 12.8 [6.8; 18.9]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Zhang 2015 5 34 14.7 [2.8; 26.6]
Random effects model 1700 14.0 [8.9; 19.1]
Heterogeneity: I^2 = 91%, τ^2 = 0.0088, χ^2_{17} = 186.41 (p < 0.01)
0
20
40
60
80
Prevalence (%)

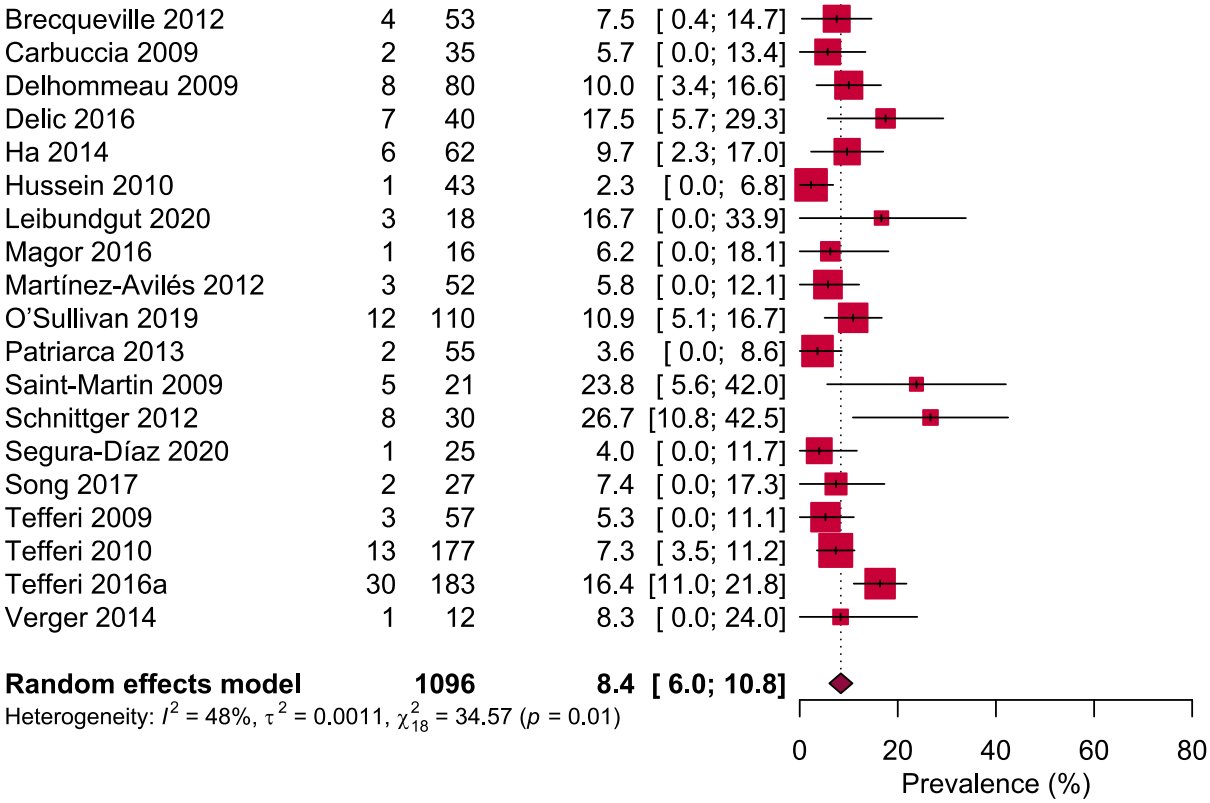
I


Study ID
Cases
Total
Prevalence
95% C.I.
Excluding outlier studies (MPNs, overall)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Barraco 2017 19 86 22.1 [13.3; 30.9]
Bartels 2019 14 104 13.5 [6.9; 20.0]
Brecqueville 2012 15 127 11.8 [6.2; 17.4]
Brecqueville 2014 11 68 16.2 [7.4; 24.9]
Carbuccia 2009 4 55 7.3 [0.4; 14.1]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Delhommeau 2009 26 197 13.2 [8.5; 17.9]
Delic 2016 20 100 20.0 [12.2; 27.8]
Gill 2018 18 101 17.8 [10.4; 25.3]
Ha 2014 12 91 13.2 [6.2; 20.1]
Hussein 2010 23 189 12.2 [7.5; 16.8]
Kröger 2017 16 169 9.5 [5.1; 13.9]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
Magor 2016 3 43 7.0 [0.0; 14.6]
Martínez-Avilés 2012 3 62 4.8 [0.0; 10.2]
Nielsen 2017 3 15 20.0 [0.0; 40.2]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Patel 2015 14 95 14.7 [7.6; 21.9]
Patriarca 2013 4 89 4.5 [0.2; 8.8]
Saint-Martin 2009 12 61 19.7 [9.7; 29.6]
Schlenk 2016 10 96 10.4 [4.3; 16.5]
Schnittger 2012 11 41 26.8 [13.3; 40.4]
Segura-Díaz 2020 12 68 17.6 [8.6; 26.7]
Song 2017 20 102 19.6 [11.9; 27.3]
Tefferi 2009 30 227 13.2 [8.8; 17.6]
Tefferi 2010 57 542 10.5 [7.9; 13.1]
Tefferi 2016 33 182 18.1 [12.5; 23.7]
Tefferi 2016a 59 316 18.7 [14.4; 23.0]
Verger 2014 3 27 11.1 [0.0; 23.0]
Zhang 2015 5 34 14.7 [2.8; 26.6]
Random effects model 3633 13.9 [12.0; 15.9]
Heterogeneity: I^2 = 63%, τ^2 = 0.0016, χ^2_{30} = 80.90 (p < 0.01)
0
20
40
60
80
Prevalence (%)

J


Study ID Cases Total Prevalence 95% C.I.
Excluding outlier studies (PV)
Andreasson 2020 26 85 30.6 [20.8; 40.4]
Barraco 2017 19 86 22.1 [13.3; 30.9]
Brecqueville 2012 3 30 10.0 [0.0; 20.7]
Carbuccia 2009 0 10 0.0 [0.0; 12.3]
Cerquozzi 2017 24 133 18.0 [11.5; 24.6]
Delhommeau 2009 13 100 13.0 [6.4; 19.6]
Delic 2016 9 30 30.0 [13.6; 46.4]
Ha 2014 4 18 22.2 [3.0; 41.4]
Hussein 2010 9 71 12.7 [4.9; 20.4]
Magor 2016 0 8 0.0 [0.0; 15.0]
Martínez-Avilés 2012 0 5 0.0 [0.0; 22.1]
Patriarca 2013 2 25 8.0 [0.0; 18.6]
Saint-Martin 2009 4 32 12.5 [1.0; 24.0]
Segura-Díaz 2020 4 16 25.0 [3.8; 46.2]
Song 2017 6 32 18.8 [5.2; 32.3]
Tefferi 2009 14 89 15.7 [8.2; 23.3]
Tefferi 2010 29 248 11.7 [7.7; 15.7]
Tefferi 2016a 29 133 21.8 [14.8; 28.8]
Verger 2014 2 10 20.0 [0.0; 44.8]
Random effects model 1161 15.4 [12.0; 18.7]
Heterogeneity: I^2 = 54%, τ^2 = 0.0026, χ^2_{18} = 39.12 (p < 0.01)
0 20 40 60 80
Prevalence (%)

K


Study ID Cases Total Prevalence 95% C.I.
Excluding outlier studies (ET)
Brecqueville 2012 4 53 7.5 [0.4; 14.7]
Carbuccia 2009 2 35 5.7 [0.0; 13.4]
Delhommeau 2009 8 80 10.0 [3.4; 16.6]
Delic 2016 7 40 17.5 [5.7; 29.3]
Ha 2014 6 62 9.7 [2.3; 17.0]
Hussein 2010 1 43 2.3 [0.0; 6.8]
Leibundgut 2020 3 18 16.7 [0.0; 33.9]
Magor 2016 1 16 6.2 [0.0; 18.1]
Martínez-Avilés 2012 3 52 5.8 [0.0; 12.1]
O'Sullivan 2019 12 110 10.9 [5.1; 16.7]
Patriarca 2013 2 55 3.6 [0.0; 8.6]
Saint-Martin 2009 5 21 23.8 [5.6; 42.0]
Schnittger 2012 8 30 26.7 [10.8; 42.5]
Segura-Díaz 2020 1 25 4.0 [0.0; 11.7]
Song 2017 2 27 7.4 [0.0; 17.3]
Tefferi 2009 3 57 5.3 [0.0; 11.1]
Tefferi 2010 13 177 7.3 [3.5; 11.2]
Tefferi 2016a 30 183 16.4 [11.0; 21.8]
Verger 2014 1 12 8.3 [0.0; 24.0]
Random effects model 1096 8.4 [6.0; 10.8]
Heterogeneity: I^2 = 48%, τ^2 = 0.0011, χ^2_{18} = 34.57 (p = 0.01)
0 20 40 60 80
Prevalence (%)

L

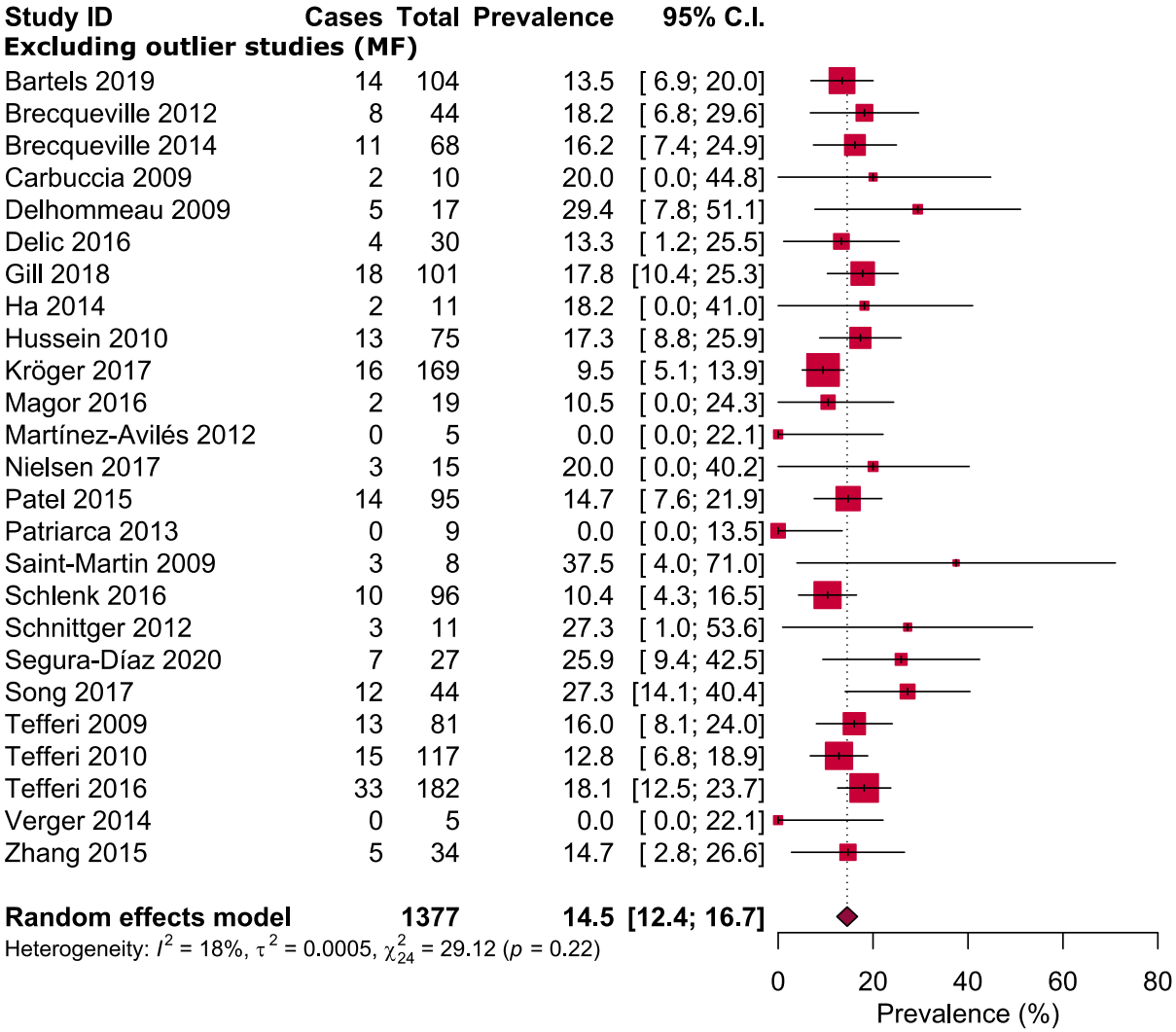


Figure S7. Sensitivity analyses.

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