**Supplemental Online Content**

**Supplementary Table 1**. Characteristics of multisystem inflammatory syndrome (MIS-C)

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**Supplementary Table 1**. Characteristics of multisystem inflammatory syndrome (MIS-C)

|  |  |  |  |
| --- | --- | --- | --- |
|  | RCPCHa  (1st May 2020)3  Paediatric multisystem inflammatory syndrome temporally associated with COVID-19 | US/CDCb  (14th May 2020)2  Multisystem Inflammatory Syndrome in Children (MIS-C) | WHOc  (15th May 2020)1  Multisystem Inflammatory Syndrome in children and adolescents temporally related to COVID-19 |
| Characteristic | Fever >38.5 | Fever, laboratory evidence of  inflammation | Fever >3 days AND elevated markers of  inflammation (ESR, CRP or procalcitonin) |
| Age | Child | <21 years | 0-19 years |
| Main features | persistent fever, inflammation (neutrophilia, elevated CRP and lymphopaenia) and evidence of single or multi-organ dysfunction (shock, cardiac, respiratory, renal, gastrointestinal or neurological disorder) with additional features. This may include children fulfilling full or partial criteria for Kawasaki disease. | Evidence of clinically severe illness requiring hospitalization, with multisystem (>2) organ involvement (cardiac, renal respiratory, hematologic, gastrointestinal, dermatologic or neurological) | At least Two of the following:  -Rash or bilateral non-purulent conjunctivitis or muco-cutaneous inflammation signs (oral, hands or feet).  -Hypotension or shock.  -Features of myocardial dysfunction, pericarditis, valvulitis, or coronary abnormalities (including ECHO findings or elevated Troponin/NT-proBNP),  -Evidence of coagulopathy (by PT, PTT, elevated d-Dimers).  -Acute gastrointestinal problems (diarrhea, vomiting, or abdominal pain). |
| Exclusion criteria | Exclusion of any other microbial cause, including bacterial sepsis, staphylococcal or streptococcal shock syndromes, infections associated with myocarditis such as enterovirus (waiting for results of these investigations should not delay seeking expert advice). | No alternative plausible diagnoses | No other obvious microbial cause of inflammation, including bacterial sepsis, staphylococcal or streptococcal shock syndromes. |
| SARS-CoV2  status | SARS-CoV-2 PCR testing may be positive or negative | Positive for current or recent SARS-CoV2 infection by RT- PCR, serology or antigen test or COVID-19 exposure within the 4 weeks prior to the onset of symptoms | Evidence of COVID-19 (RT-PCR, antigen test or serology positive), or likely contact with patients with COVID-19. |

aRCPCH: Royal College of Paediatrics and Child Health; b. US-CDC: United States -Centers for Disease Control and Prevention; c. WHO: World Health Organization; MAS: macrophage activation syndrome; ESR: Erythrocyte sedimentation rate; CRP: C reactive protein.

**Supplementary Table 2.** Quality and bias assessments of included studiesa,b

aGeneral analysis: Some methodological components were evaluated: The study had clear objectives; detailed description of the study participants; adequate description of signs, symptoms, and clinical outcomes; the presence of SARS-CoV-2 determined by PCR and/or serology; and use of appropriate statistical methods to address the study issue. A study received a score of 2 if the criteria were fully met, a score of 1 if the criteria were partly met, and 0 if none of the criteria was met. Only studies that reached a total score of ≥7 were included in this systematic review.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Articles  2020/2021 | Did the study have clear objectives for the characterization of MIS-C / PIMS-TS? | Does the study present a detailed ethnic and physical description of the patients? | Does the study present an adequate clinical description of the patients? | Does the study report the presence of SARS-CoV-2 by PCR and / or serology in all patients? | Does the study present the data using appropriate statistical methods? | Risk of bias in data analysis? | Inclusion in study  (Qualitative or Meta-analysis/Quantitative) | Total |
| Abdel-Mannan et al 2020 | 2 | 1 | 2 | 2 | 1 | Medium | Qualitative | 8 |
| Abdel-Haq et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Acharrya et al 2020. | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Alkan et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Bahrami et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Balasubramanian et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Bapst et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Bektaş et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Belhadjer et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Belot et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Meta-analysis | 7 |
| Blondiaux et al 2020 | 2 | 1 | 2 | 2 | 1 | Medium | Qualitative | 8 |
| Blumfield et al 2021 | 2 | 1 | 2 | 2 | 1 | Medium | Meta-analysis | 8 |
| Buonsenso et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Capone et al 2020 | 2 | 2 | 2 | 1 | 2 | Low | Meta-analysis | 9 |
| Carter et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Cattalini et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Cheung et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Chiotos et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Cogan et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Dallan et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Dasgupta and Finch | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Davies et al 2020 | 2 | 2 | 2 | 1 | 2 | Low | Meta-analysis | 9 |
| De Paulis et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Deza Leon et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Dhanalakshmi et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Dionne et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Diorio et al 2020 | 2 | 2 | 2 | 1 | 2 | Low | Meta-analysis | 9 |
| Dolhnikoff et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Dolinger et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Domico et al 2020. | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Dufort et al 2020 | 2 | 2 | 2 | 1 | 2 | Low | Meta-analysis | 9 |
| Farias et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Farias et al 2020 | 2 | 2 | 2 | 1 | 1 | Medium | Qualitative | 8 |
| Feldstein et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Flood et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Giannattasio et al 2021 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Godfred-Cato et al 2020 | 2 | 2 | 2 | 1 | 2 | Low | Meta-analysis | 9 |
| Greene et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Grimaud et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Gruber et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Gupta et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Hameed et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Heidemann et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Hutchison et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Jain et al 2020 | 2 | 1 | 2 | 1 | 2 | Medium | Meta-analysis | 8 |
| Joshi et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Kashyap et al 2021 | 2 | 2 | 2 | 1 | 1 | Medium-High | Meta-analysis | 8 |
| Kaushik et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Kest et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Khesrani et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Klocperk et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Lang et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Lee and Margolskee | 2 | 1 | 2 | 1 | 1 | Medium | Qualitative | 8 |
| Lee et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Lee et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Licciardi et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Lin et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Mamishi et al 2020 | 2 | 1 | 2 | 2 | 1 | Medium | Meta-analysis | 8 |
| Mehler et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Meredith et al 2021 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Miller et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Mills et al 2021 | 2 | 2 | 2 | 1 | 2 | Low | Qualitative | 9 |
| Moghadam et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Moraleda et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Nathan et al 2020 | 2 | 1 | 2 | 2 | 1 | Medium | Qualitative | 8 |
| Ng et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Nguyen et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Okarska-Napierała et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Paolino and Willians | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Patnaik et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Penner et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Pereira et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Perez-Toledo et al 2020 | 2 | 1 | 2 | 1 | 2 | Medium | Meta-analysis | 8 |
| Pouletty et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Prata-Barbosa et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Prieto et al 2021 | 2 | 2 | 2 | 1 | 1 | Medium | Meta-analysis | 8 |
| Ramcharan et al 2020 | 2 | 2 | 2 | 1 | 2 | Low | Meta-analysis | 9 |
| Rauf et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Regev et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Riollano-Cruz et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Riphagen et al 2020 | 2 | 2 | 2 | 1 | 2 | Low | Meta-analysis | 9 |
| Roberts et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Rodriguez-gonzalez et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Rogo et al 2020 | 2 | 1 | 2 | 1 | 1 | Medium-High | Qualitative | 7 |
| Sadiq et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Saeed and Shorofa | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Sandoval et al 2021 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Schupper et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Shenker et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Torres et al 2020 | 2 | 1 | 2 | 1 | 2 | Medium | Meta-analysis | 8 |
| Toubiana et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Vari et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Verdoni et al 2020 | 2 | 1 | 2 | 2 | 2 | Low | Meta-analysis | 9 |
| Verkuil et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |
| Webb et al 2020 | 2 | 2 | 2 | 2 | 2 | Low | Meta-analysis | 10 |
| Whittaker et al 2020 | 2 | 2 | 2 | 1 | 2 | Low | Meta-analysis | 9 |
| Yonker et al 2020 | 2 | 2 | 2 | 1 | 1 | Medium | Meta-analysis | 8 |
| Yozgat et al 2020 | 2 | 1 | 2 | 2 | 0 | Medium-High | Qualitative | 7 |

bObservational cohort studies and case reports were evaluated using some aspects of the Newcastle-Ottawa Scale (NOS). This assessment confirmed the inclusion of the study and the risk of bias in this systematic review. Aspects evaluated included selection and definition of controls, representativeness of the cases, comparability of cases and controls based on design or analysis, assessment of outcome, and risk of bias in data analysis. Each aspect can be answered with yes, no, or partially.

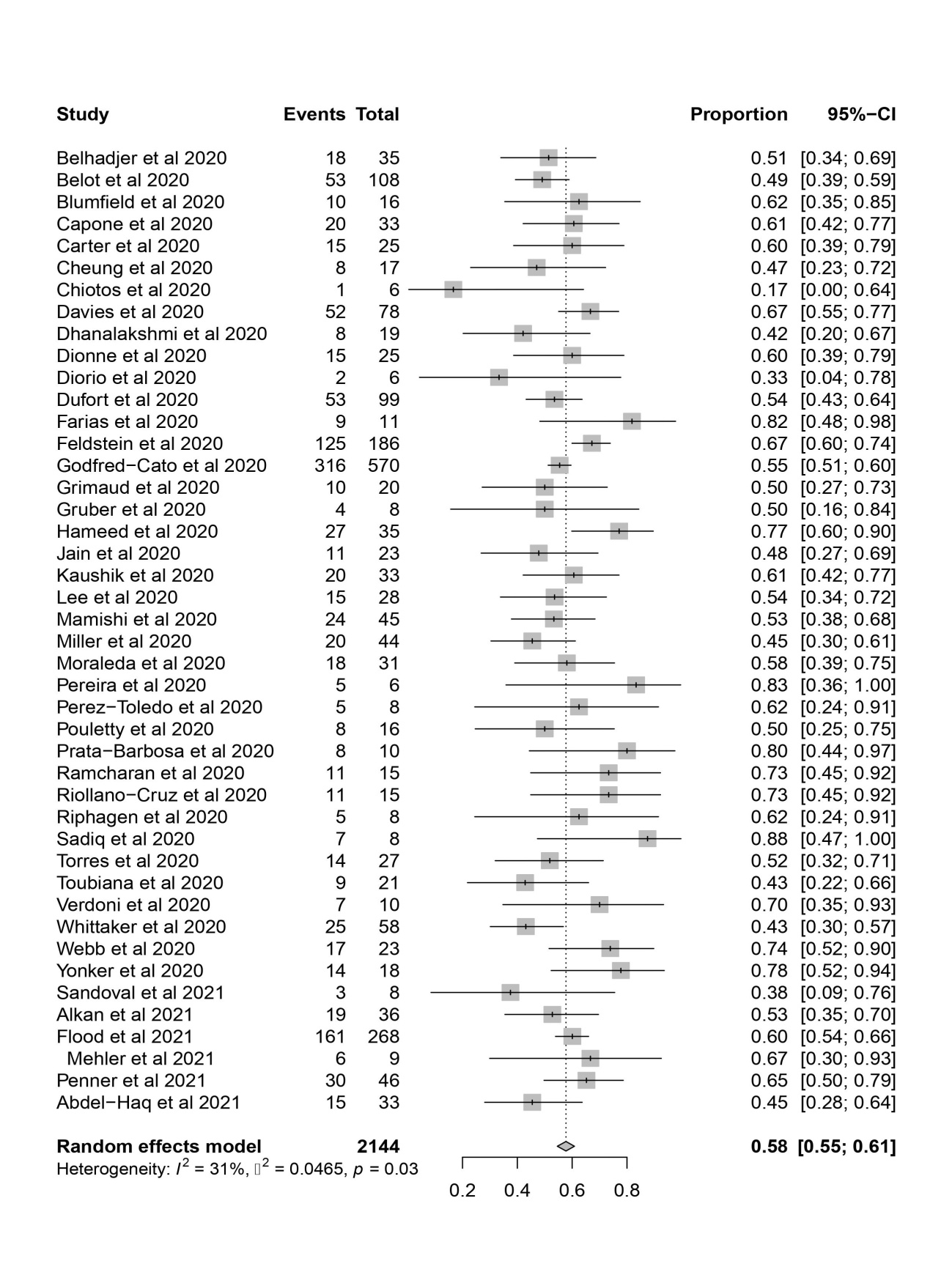
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Articles  2020/2021 | Selection and definition of controls | | Representativeness of the cases | Comparability of cases and controls on the basis of the design or analysis | Assessment of outcome | Risk of bias in data analysis? |
| **Abdel-Mannan et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Acharrya et al 2020.** | | Yes | Yes | Yes | Yes | Low |
| **Bahrami et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Balasubramanian et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Bapst et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Bektaş et al 2021** | | Yes | Yes | Yes | Yes | Low |
| **Blondiaux et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Buonsenso et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Cogan et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Dallan et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Dasgupta and Finch** | | Yes | Yes | Yes | Yes | Low |
| **De Paulis et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Deza Leon et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Dolhnikoff et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Dolinger et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Domico et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Farias et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Giannattasio et al 2021** | | Yes | Yes | Yes | Yes | Low |
| **Greene et al 2020** | | Yes | Yes | Yes | Partially | Medium |
| **Gupta et al 2020** | | Yes | Yes | Yes | Partially | Medium |
| **Heidemann et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Hutchison et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Joshi et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Kest et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Khesrani et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Klocperk et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Lang et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Lee and Margolskee 2020** | | Yes | Yes | Yes | Yes | Low |
| **Lee et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Licciardi et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Lin et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Maghadam et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Meredith et al 2021** | | Yes | Yes | Yes | Yes | Low |
| **Mills et al 2021** | | Yes | Yes | Yes | Yes | Low |
| **Nathan et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Ng et al 2020** | | Yes | Yes | Yes | Partially | Medium |
| **Nguyen et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Okarska-Napierała et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Paolino and Willians** | | Yes | Yes | Yes | Yes | Low |
| **Rauf et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Regev et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Rodriguez-gonzalez et al 2020** | | Yes | Yes | Yes | Partially | Medium |
| **Rogo et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Saeed and Shorofa** | | Yes | Yes | Yes | Partially | Medium |
| **Schupper et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Shenker et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Vari et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Verkuil et al 2020** | | Yes | Yes | Yes | Yes | Low |
| **Yozgat et al 2020** | | Yes | Yes | Yes | Yes | Low |

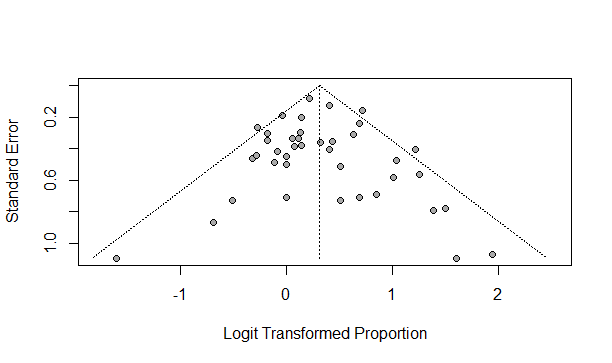
**Supplementary Table 3**. Links to all studies included in this systematic review

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| --- |
| Abdel-mannan et al 2020. https://jamanetwork.com/journals/jamaneurology/fullarticle/2767979.doi:10. |
| Abdel-Haq et al 2021. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7810600/pdf/431\_2021\_Article\_3935.pdf |
| Acharrya et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/pmc7444159/pdf/13312\_2020\_article\_1924.pdf |
| Alkan et al 2021. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8100744/pdf/10067\_2021\_Article\_5754.pdf |
| Akhmerov and Marbán. https://www.ahajournals.org/doi/epub/10.1161/circresaha.120.317055 |
| American Academy of Pediatrics, 2020. https://www.aappublications.org/news/2020/07/13/covid19miscguidance |
| Bahrami et al 2020. https://onlinelibrary.wiley.com/doi/full/10.1111/jpc.15048 |
| Balasubramanian et al 2020. Https://www.ncbi.nlm.nih.gov/pmc/articles/pmc7387261/pdf/13312\_2020\_article\_1901.pdf |
| Bapst et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/pmc7358104/pdf/bcr-2020-236986.pdf |
| Bektaş et al 2021. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7553133/pdf/main.pdf |
| Belhadjer et al 2020. https://www.ahajournals.org/doi/epub/10.1161/circulationaha.120.048360 |
| Belot et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/pmc7336112/pdf/eurosurv-25-22-1.pdf |
| Binstadt et al 2020. https://pediatrics.aappublications.org/content/pediatrics/116/1/e89.full.pdf |
| Blondiaux et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/pmc7294821/pdf/radiol.2020202288.pdf |
| Blumfield et al 2021. https://www.ajronline.org/doi/full/10.2214/AJR.20.24032 |
| Buonsenso et al 2020. https://journals.lww.com/pidj/fulltext/2020/08000/cytokine\_profile\_in\_an\_adolescent\_with\_pediatric.39.aspx |
| Burns, 2007. https://www.nejm.org/doi/full/10.1056/NEJMp068268?query=TOC |
| Capone et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/pmc7293762/pdf/main.pdf |
| Carter et al 2020. https://www.nature.com/articles/s41591-020-1054-6 |
| Cattalini et al 2021. https://ped-rheum.biomedcentral.com/track/pdf/10.1186/s12969-021-00511-7.pdf |
| CDC. 2020. https://emergency.cdc.gov/han/2020/han00432.asp |
| Cheung et al 2020. https://jamanetwork.com/journals/jama/fullarticle/10.1001/jama.2020.10374 |
| Chiotos et al 2020. https://academic.oup.com/jpids/article/9/3/393/5848127 |
| Cogan et al 2020. https://europepmc.org/article/med/32760733#free-full-text |
| Colomba et al 2020. https://kopernio.com/viewer?Doi=10.1016/j.jpeds.2018.06.034&route=2 |
| Dallan et al 2020. https://www.thelancet.com/action/showpdf?Pii=s2352-4642%2820%2930164-4 |
| Dasgupta and Finch. https://www.ncbi.nlm.nih.gov/research/coronavirus/publication/32580256 |
| Davies et al 2020. https://www.thelancet.com/action/showPdf?pii=S2352-4642%2820%2930215-7 |
| De Paulis et al 2020. https://journals.lww.com/pidj/Fulltext/2020/10000/Multisystem\_Inflammatory\_Syndrome\_Associated\_With.27.aspx |
| Deza Leon et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7313914/pdf/piaa061.pdf |
| Dhanalakshmi et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7678572/pdf/13312\_2020\_Article\_2025.pdf |
| Dionne et al 2020. https://pediatrics.aappublications.org/content/pediatrics/early/2020/10/28/peds.2020-009704.full.pdf |
| Diorio et al 2020. https://www.jci.org/articles/view/140970/pdf |
| Dolhnikoff et al 2020. https://www.thelancet.com/action/showPdf?pii=S2352-4642%2820%2930257-1 |
| Dolinger et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7268863/pdf/jpga-publish-ahead-of-print-10.1097.mpg.0000000000002809.pdf |
| Domico et al 2020. https://www.heartrhythmcasereports.com/action/showPdf?pii=S2214-0271%2820%2930189-5 |
| Dufort et al 2020. https://www.nejm.org/doi/full/10.1056/NEJMoa2021756 |
| Duval and Tweedie, 2000. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.0006-341X.2000.00455.x?sid=nlm%3Apubmed |
| Farias et al 2020. https://patua.iec.gov.br/handle/iec/4192 |
| Farias et al 2020. https://www.scielo.br/pdf/rpp/v38/pt\_1984-0462-rpp-38-e2020165.pdf |
| Feldstein et al 2020. https://www.nejm.org/doi/full/10.1056/NEJMoa2021680 |
| Flood et al 2021. https://www.sciencedirect.com/science/article/pii/S2666776221000521?via%3Dihub |
| Giannattasio et al 2020. https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.26189 |
| Godfred-Cato et al 2020. https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6932e2-H.pdf |
| Gordon et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/pmc2870533/pdf/nihms160351.pdf |
| Greene et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7274960/pdf/main.pdf |
| Grimaud et al 2020. https://annalsofintensivecare.springeropen.com/articles/10.1186/s13613-020-00690-8 |
| Gruber et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7359537/pdf/nihpp-2020.07.04.20142752.pdf |
| Gupta et al 2020. https://www.nature.com/articles/s41591-020-0968-3 |
| Hameed et al 2020. https://pubs.rsna.org/doi/pdf/10.1148/radiol.2020202543 |
| Heidemann et al 2020. https://www.amjcaserep.com/download/index/idArt/925779 |
| Higgins et al 2020. 2003. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC192859/pdf/3270557.pdf |
| Hutchison et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7324340/pdf/main.pdf |
| Inciardi et al 2020. https://jamanetwork.com/journals/jamacardiology/article-abstract/2763843 |
| Jain et al 2020. https://congenitalcardiologytoday.com/2020/08/04/cardiovascular-magnetic-resonance-in-myocarditis-related-to-multisystem-inflammatory-syndrome-in-children-associated-with-covid-19/ |
| Jenco M 2020. https://www.aappublications.org/news/aapnewsmag/2020/07/13/covid19miscguidance.full.pdf |
| Joshi et al 2020. https://www.sciencedirect.com/science/article/pii/s2666084920306707#bib6 |
| Kashyap et al 2021. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8284036/ |
| Kaushik et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7293760/pdf/main.pdf |
| Kest et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7383305/pdf/CRIPE2020-8875987.pdf |
| Khesrani et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7439099/pdf/main.pdf |
| Klocperk et al 2020. https://www.frontiersin.org/articles/10.3389/fimmu.2020.01665/full |
| Lang et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7543556/pdf/piaa117.pdf |
| Lee and Margolskee. https://ashpublications.org/blood/article/136/7/914/461742/Leukoerythroblastosis-and-plasmacytoid-lymphocytes |
| Lee et al 2020. https://www.jacionline.org/action/showPdf?pii=S0091-6749%2820%2931170-2 |
| Lee et al 2020. https://www.jci.org/articles/view/141113/pdf |
| Licciardi et al 2020. https://pediatrics.aappublications.org/content/pediatrics/146/2/e20201711.full.pdf |
| Lin et al 2020. http://www.ajnr.org/content/ajnr/early/2020/08/20/ajnr.A6755.full.pdf |
| Maghadam et al 2020. https://www.amjmed.com/article/S0002-9343(20)30608-2/fulltext |
| Makino et al 2020. https://onlinelibrary.wiley.com/doi/full/10.1111/ped.13809 |
| Mamishi et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7484297/pdf/S095026882000196Xa.pdf |
| Mehler et al 2021. https://www.ijidonline.com/action/showPdf?pii=S1201-9712%2821%2900355-6 |
| Meredith et al 2021. https://www.preprints.org/manuscript/202006.0118/v1 |
| Miller et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7270806/pdf/main.pdf |
| Mills et al 2021. https://journals.lww.com/pidj/Fulltext/2021/09000/Hyponatremia\_in\_Patients\_With\_Multisystem.19.aspx |
| Moher et al 2020, 2009. https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000097 |
| Moraleda et al 2020. https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa1042/5876334 |
| Nathan et al 2020. https://europepmc.org/articles/pmc7564665/bin/jcm-09-02950-s001.pdf |
| Ng et al 2020. https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.26206 |
| Nguyen et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7389873/pdf/cureus-0012-00000008915.pdf |
| Oba et al 2020. https://www.scielo.br/pdf/eins/v18/2317-6385-eins-18-eRW5774.pdf |
| Okarska-Napierała et al 2020. https://www.gastrojournal.org/article/S0016-5085(20)35118-0/pdf |
| Paolino and Williams. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7404579/pdf/PBC-9999-e28551.pdf |
| Patnaik et al 2021. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8278175/ |
| Penner et al 2021. https://www.thelancet.com/action/showPdf?pii=S2352-4642%2821%2900138-3 |
| Pereira et al 2020. https://www.scielo.br/pdf/clin/v75/1807-5932-clin-75-e2209.pdf |
| Perez-toledo et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7302282/pdf/nihpp-2020.06.05.20123117.pdf |
| Pouletty et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7299653/pdf/annrheumdis-2020-217960.pdf |
| Prata-barbosa et al 2020. https://www.sciencedirect.com/science/article/pii/S225555362030080X |
| Prieto et al 2021. https://www.clinicalmicrobiologyandinfection.com/action/showPdf?pii=S1198-743X%2820%2930616-9 |
| Ramcharan et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7289638/ |
| Rauf et al 2020. https://link.springer.com/article/10.1007/s12098-020-03357-1 |
| RCPCH, 2020. https://www.rcpch.ac.uk/resources/guidance-paediatric-multisystem-inflammatory-syndrome-temporally-associated-covid-19 |
| Regev et al 2020. https://journals.lww.com/pidj/Fulltext/2020/08000/Pediatric\_Inflammatory\_Multisystem\_Syndrome\_With.32.aspx |
| Riollano-cruz et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7361761/pdf/JMV-9999-na.pdf |
| Riphagen et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7204765/pdf/main.pdf |
| Roberts et al 2021. https://adc.bmj.com/content/archdischild/early/2021/07/07/archdischild-2021-322290.full.pdf?with-ds=yes |
| Rodriguez-gonzalez et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7324758/pdf/S1047951120001857a.pdf |
| Rogo et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7454706/pdf/piaa087.pdf |
| Sadiq et al 2020. https://www.thelancet.com/cms/10.1016/S2352-4642(20)30256-X/attachment/e26166e7-6168-4d22-8ffa-67acf23303e9/mmc1.pdf |
| Saeed and Shorofa. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7468313/pdf/main.pdf |
| Sandoval et al 2021. https://journals.sagepub.com/doi/pdf/10.1177/0883073821989164 |
| Schupper et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7314616/pdf/381\_2020\_Article\_4755.pdf |
| Shenker et al 2020. https://europepmc.org/article/med/32712284#free-full-text |
| Tavazzi et al 2020. https://onlinelibrary.wiley.com/doi/full/10.1002/ejhf.1828 |
| Tissières P, Teboul JL. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7376531/pdf/13613\_2020\_Article\_717.pdf |
| Torres et al 2020. https://www.sciencedirect.com/science/article/pii/S1201971220306913 |
| Toubiana et al 2020. https://www.bmj.com/content/bmj/369/bmj.m2094.full.pdf |
| Vari et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7329651/pdf/main.pdf |
| Verdoni et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7220177/pdf/main.pdf |
| Verkuil et al 2020. https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2931725-6 |
| Webb et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7442431/ |
| Wei X et al 2020. H. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7188134/pdf/ehaa333.pdf |
| Wells et al 2020. http://www.ohri.ca/programs/clinical\_epidemiology/oxford.asp |
| Whittaker et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7281356/ |
| WHO. https://www.who.int/news-room/commentaries/detail/multisystem-inflammatory-syndrome-in-children-and-adolescents-with-covid-19 |
| Xia et al 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7168071/pdf/PPUL-55-1169.pdf |
| Yonker et al 2020. https://www.jpeds.com/action/showPdf?pii=S0022-3476%2820%2931023-4 |
| Yozgat et al 2020. https://onlinelibrary.wiley.com/doi/10.1111/dth.13770 |

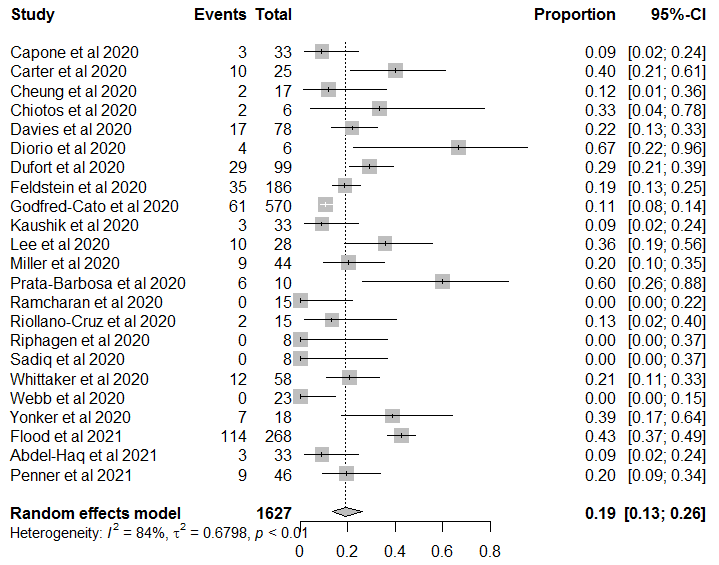
**Supplementary Figures**. Results of the meta-analyses of all characteristics from the included studies: forest plots and funnel plots.

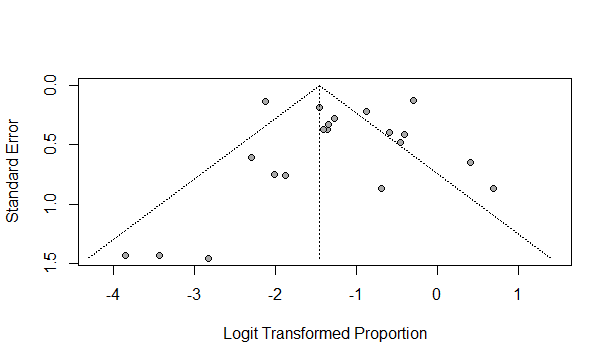
Male gender



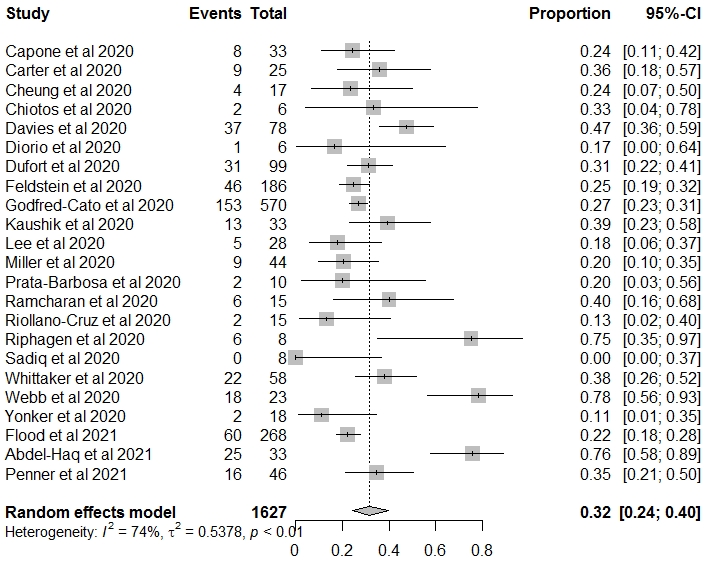


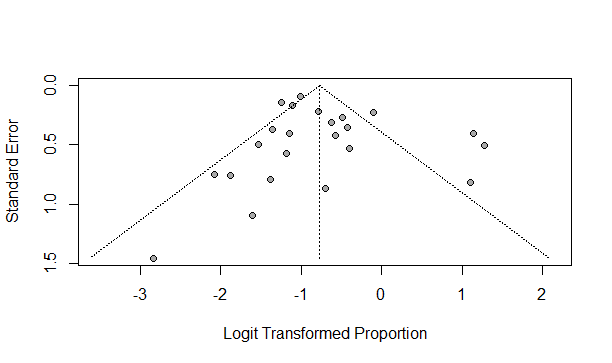
Caucasian/white ethnicity

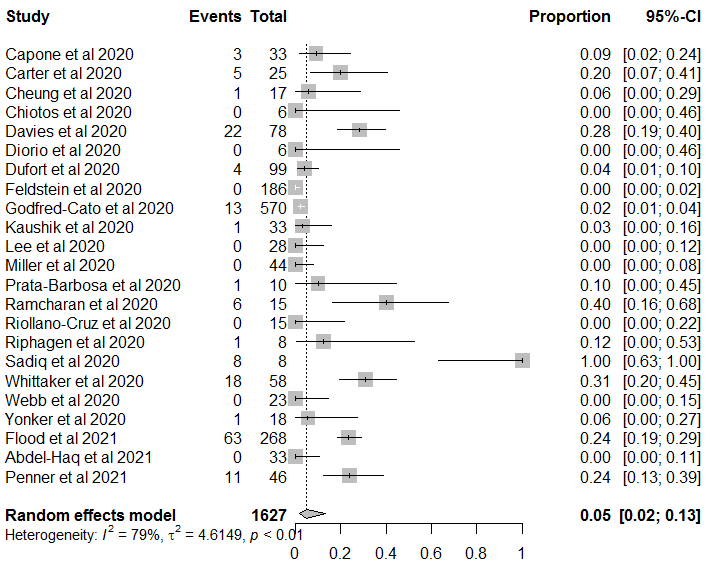


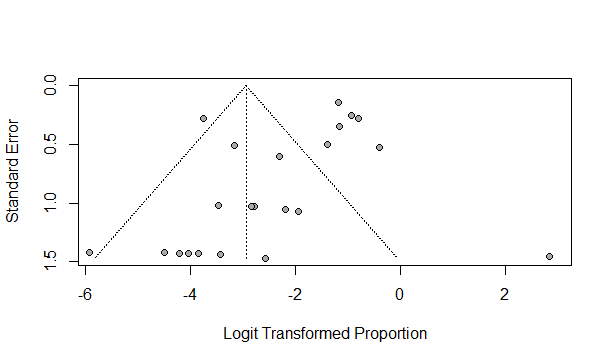


African American/Black ethnicity

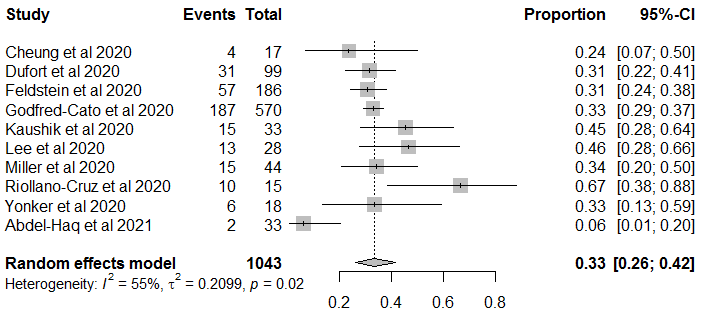


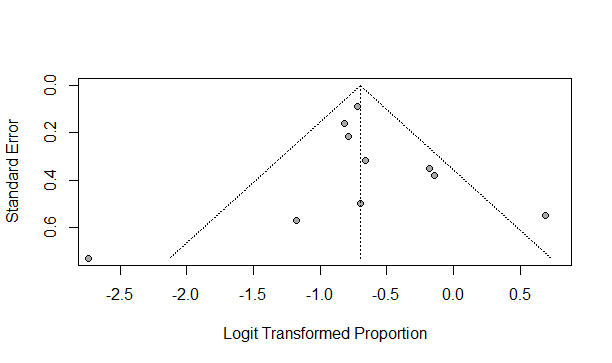


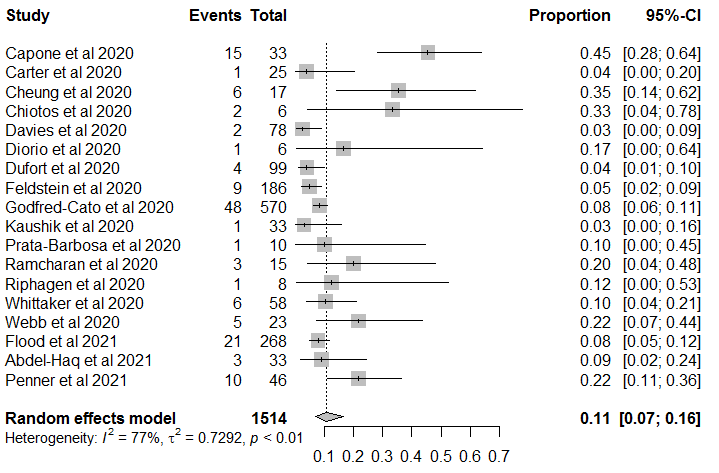
Asian ethnicity

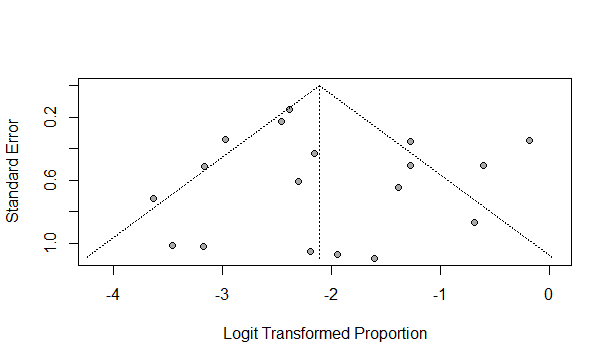


Hispanic ethnicity



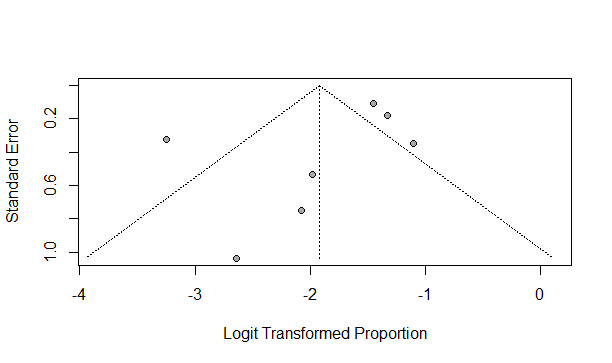


multiracial or others

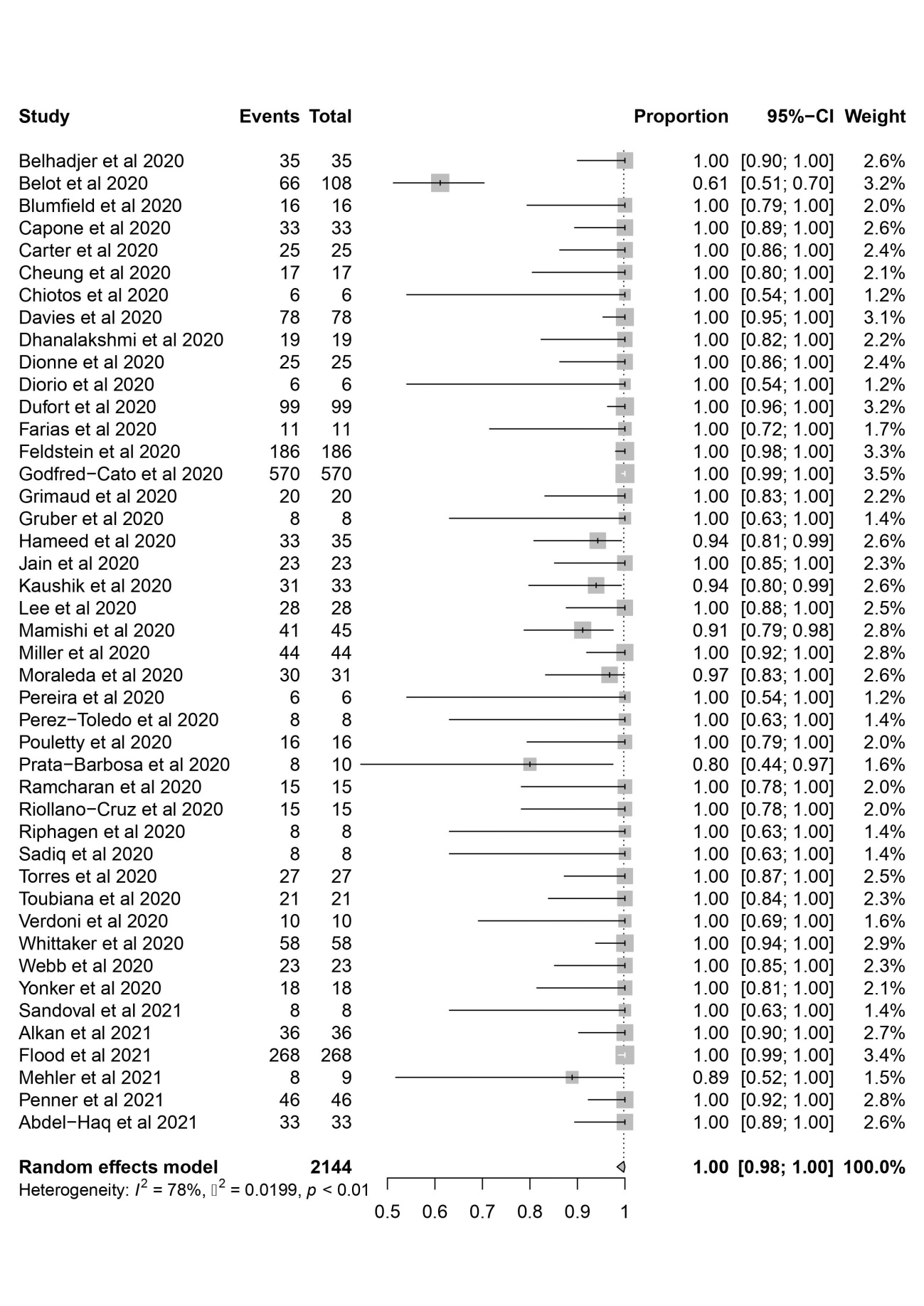


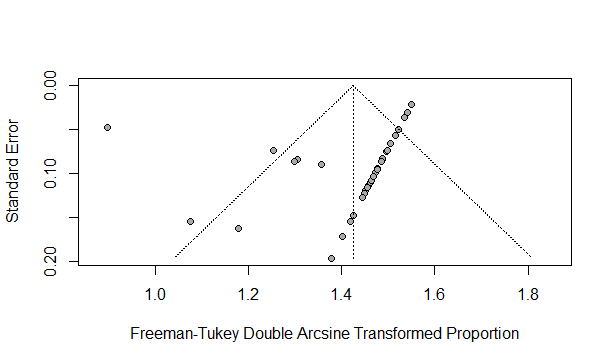
unreported or specified ethnicity



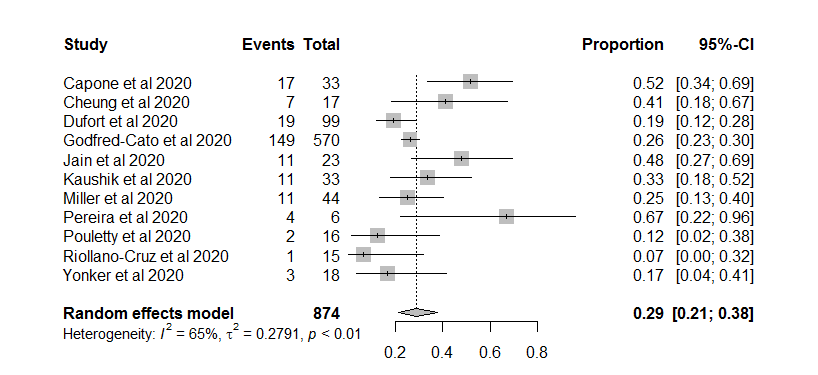


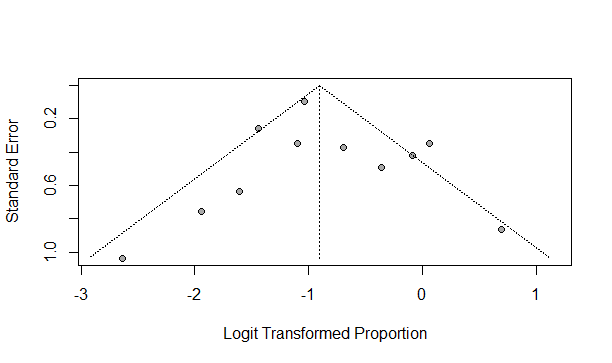
**Symptoms - fever**



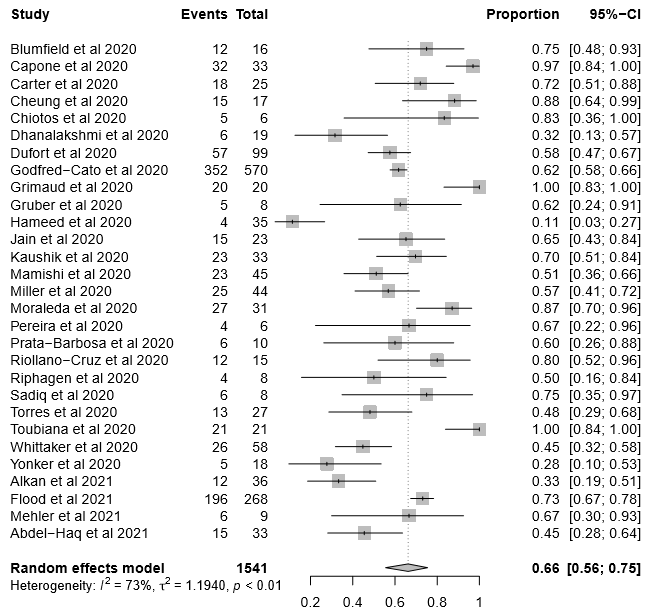


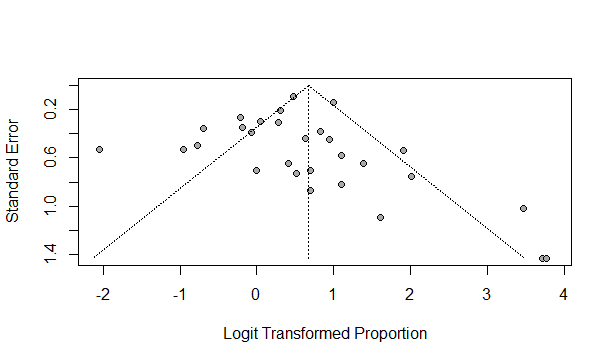
**Symptoms - dyspnea**



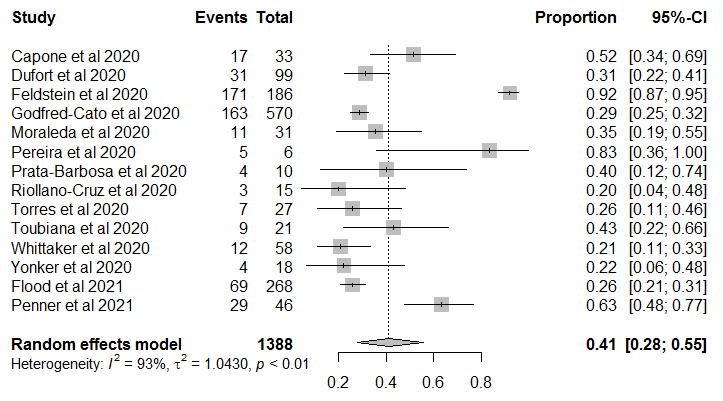


Symptoms – vomiting

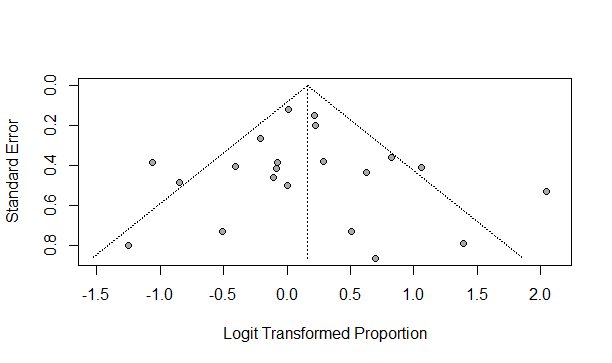
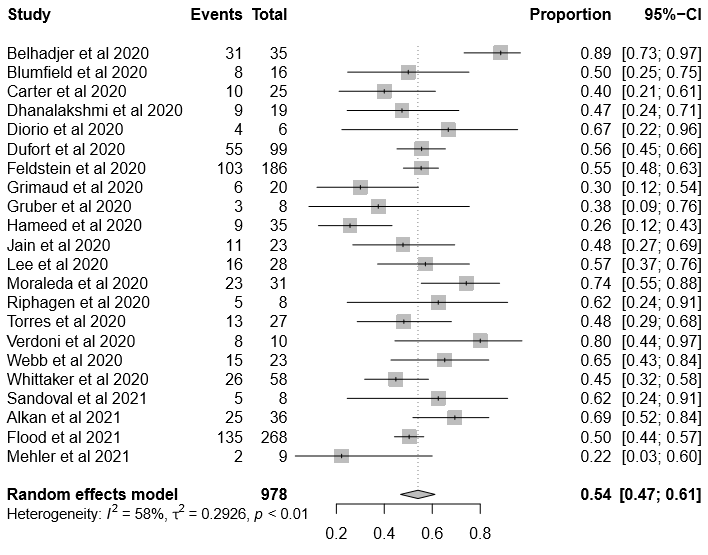




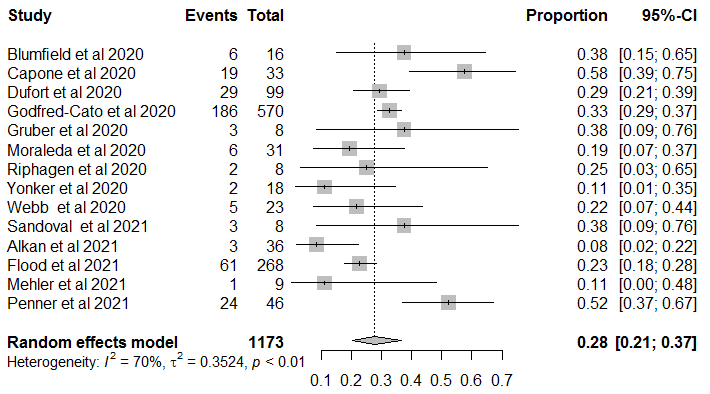
**Symptoms – cough**

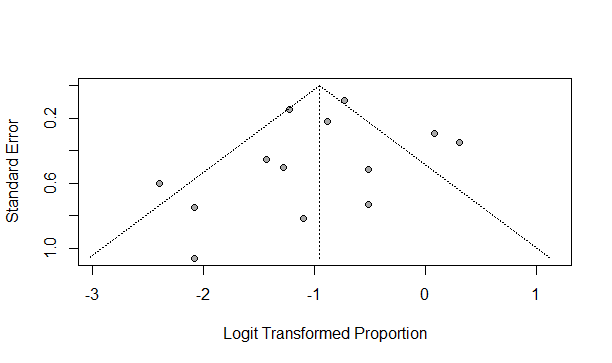




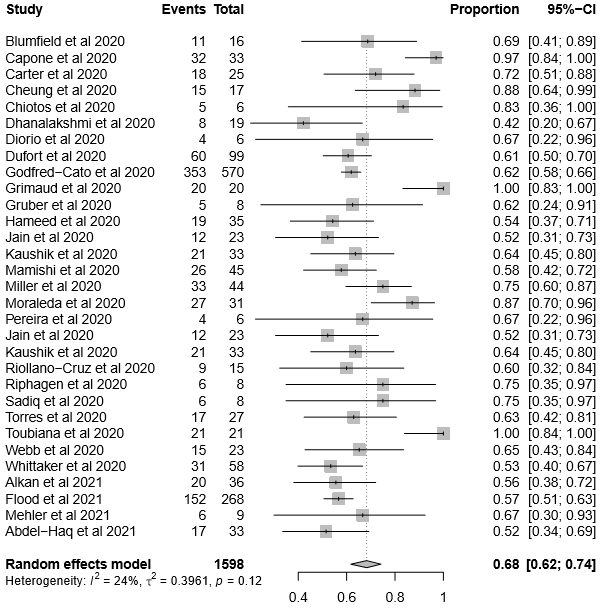
**Symptoms - cojunctivitis**

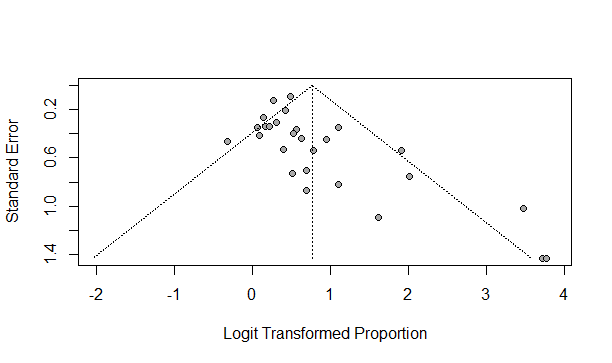
**Symptoms – headache**



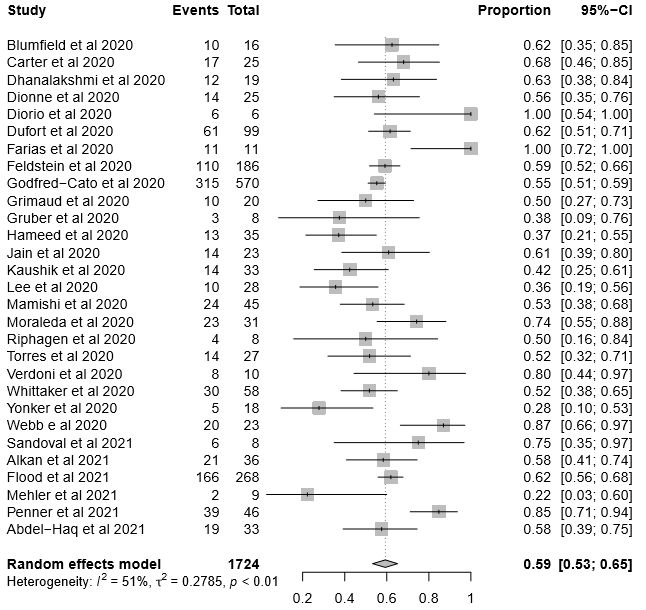


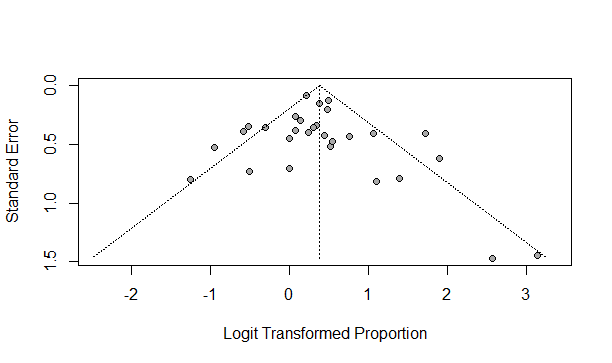
**Symptoms - abdominal pain**



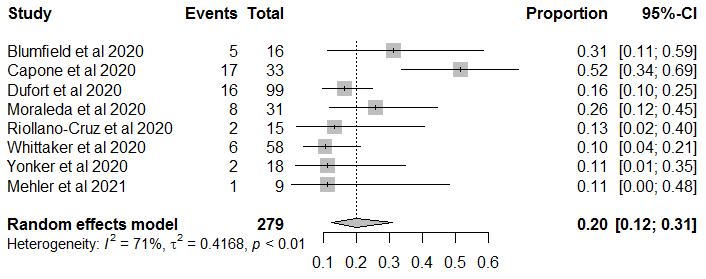


**Symptoms - rash/erythema**



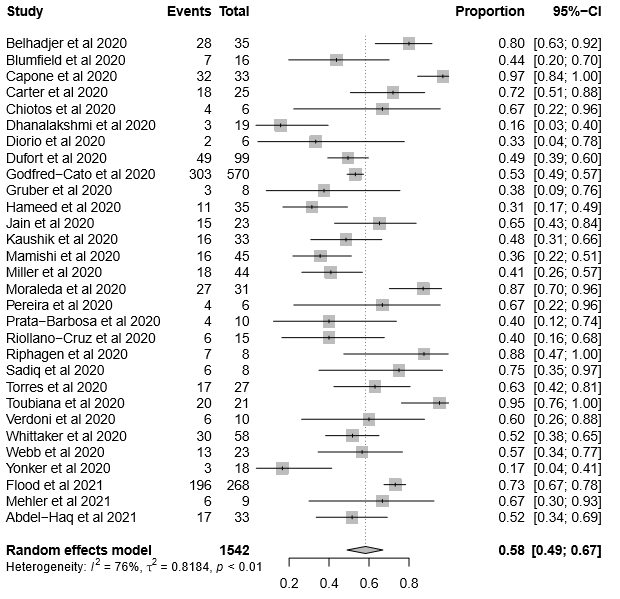


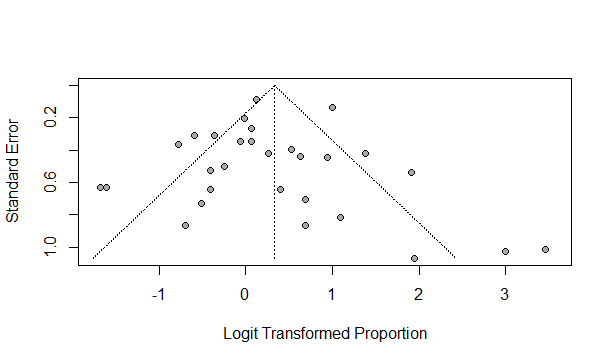
**Symptoms - sore throat**



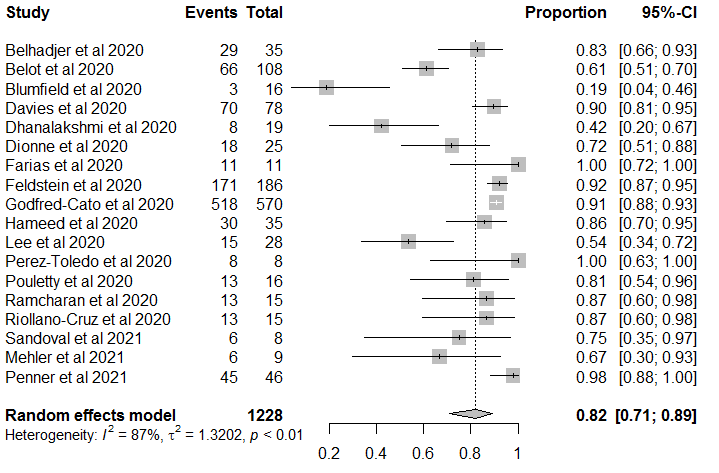


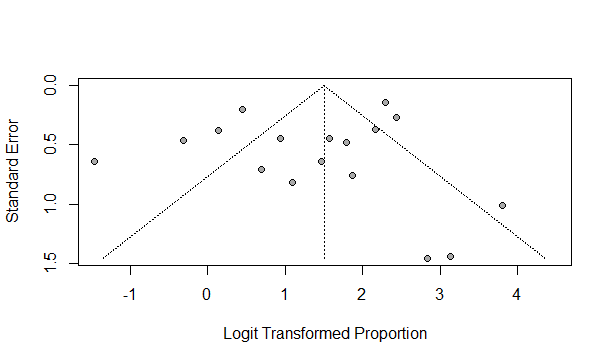
**Symptoms - diarrhoea**



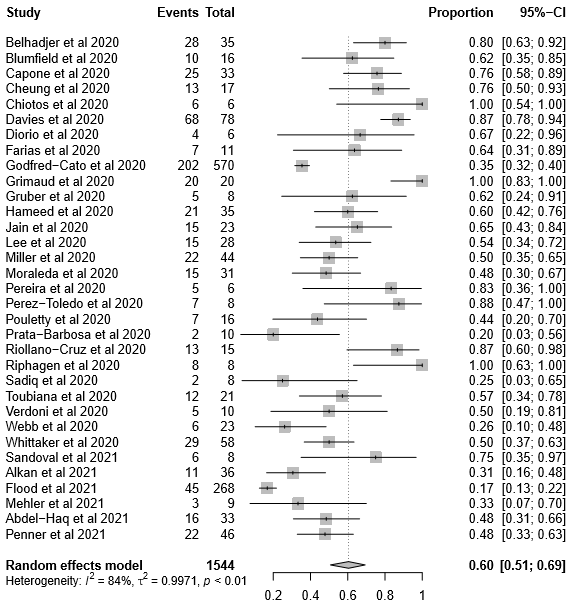


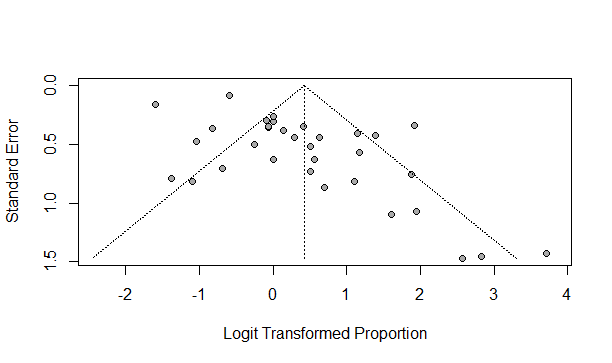
**Non-specific gastrointestinal symptoms (GI symptoms)**



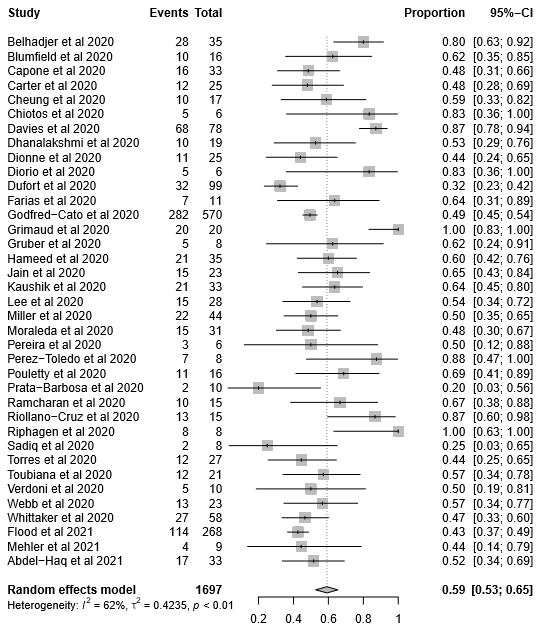


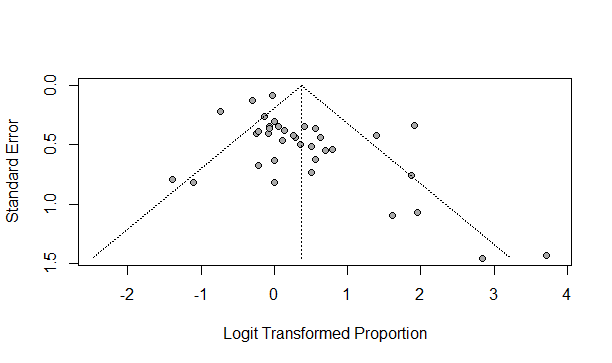
**SHOCK**



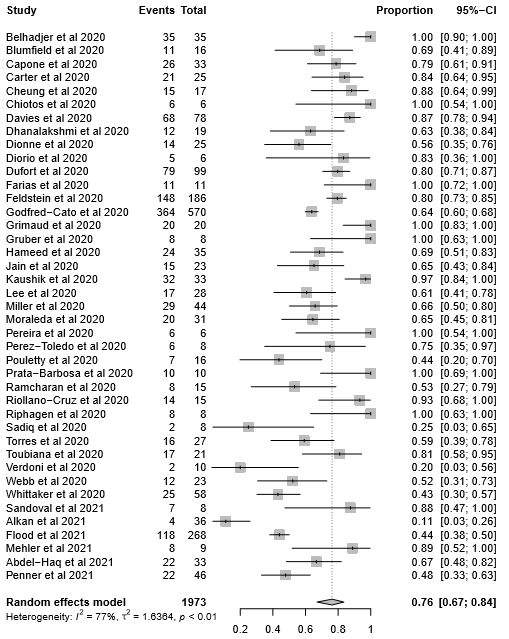


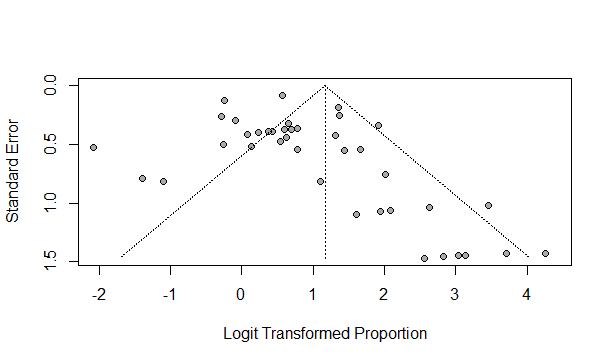
**Hypotension**

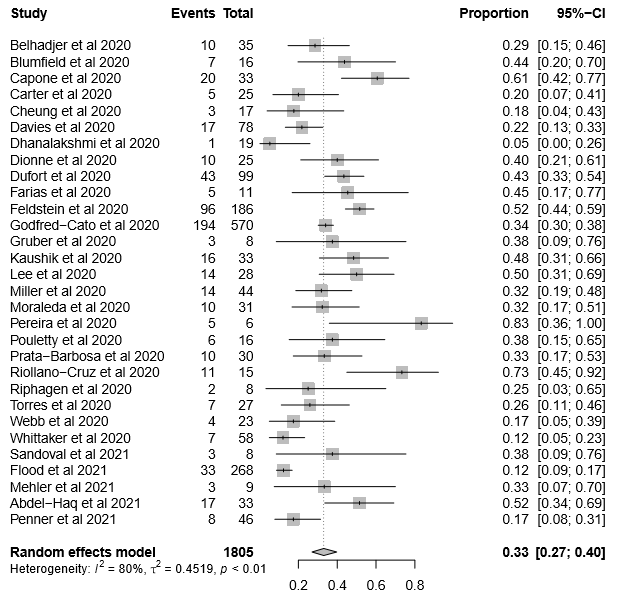


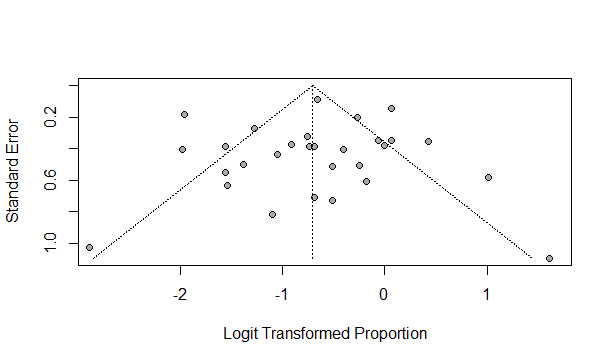


**Pediatric intensive care unit (PICU)**

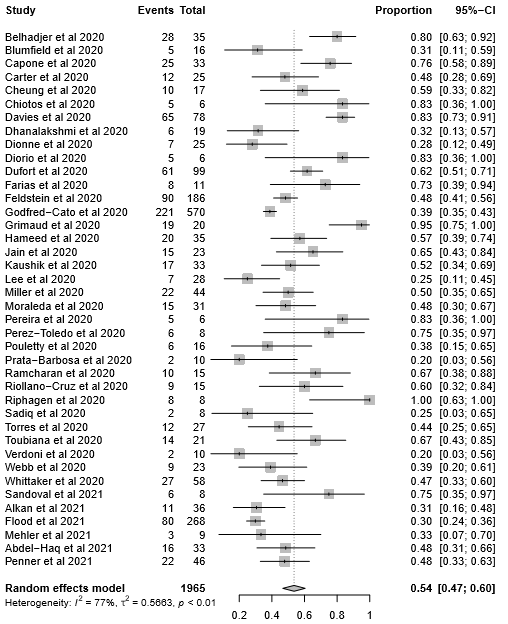


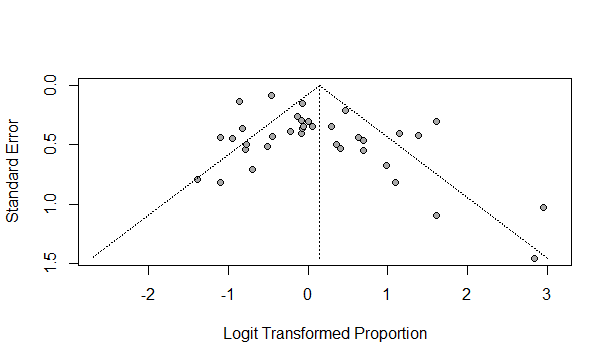


**COMORBIDITIES**

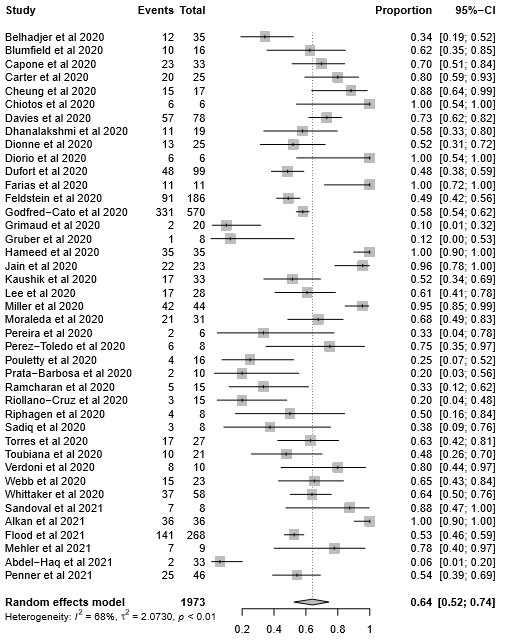
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**INOTROPICS**

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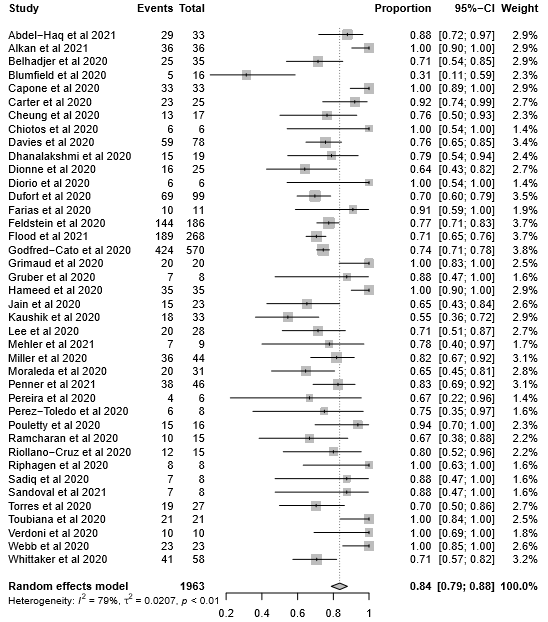
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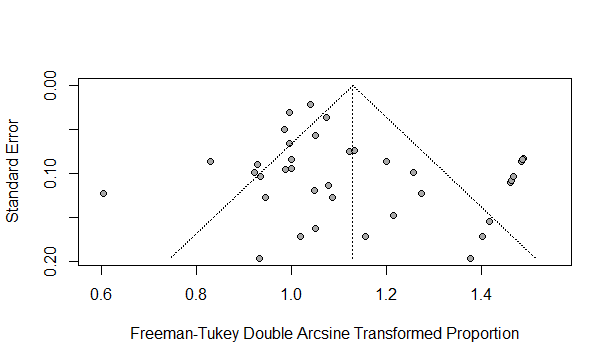
**STEROIDES**

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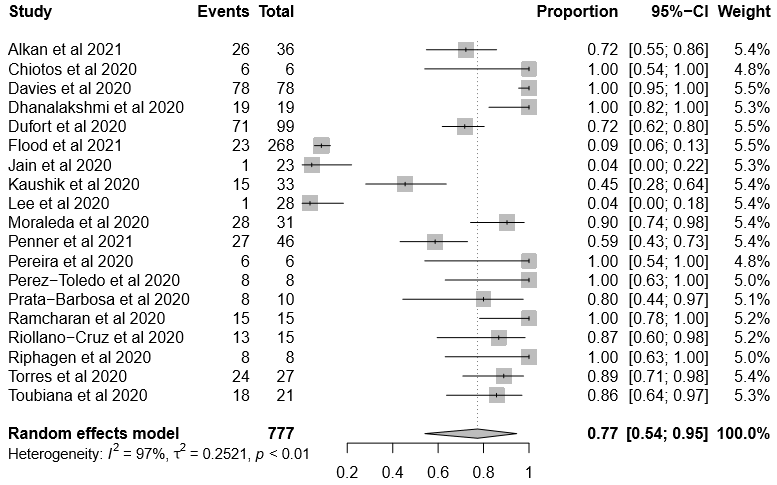


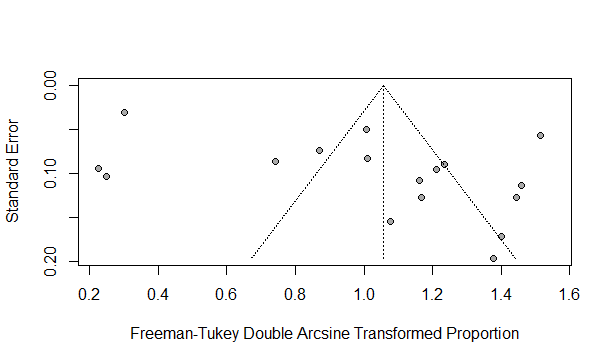
**IVIG**



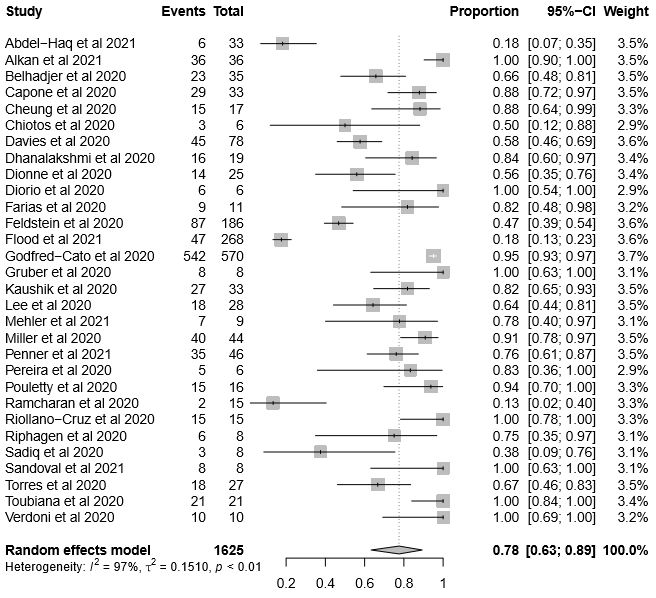


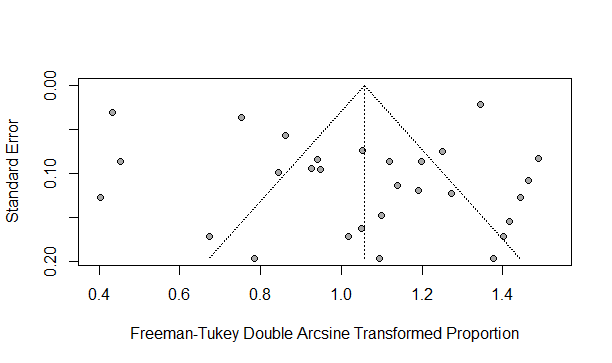
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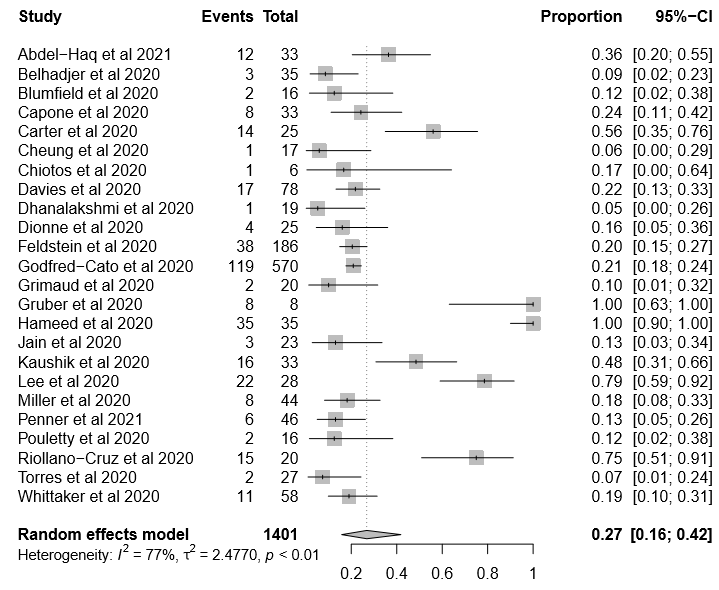


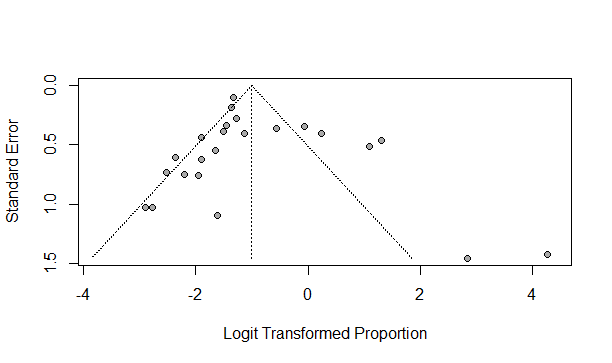
**Antiplatelet/ Anticoagulation**

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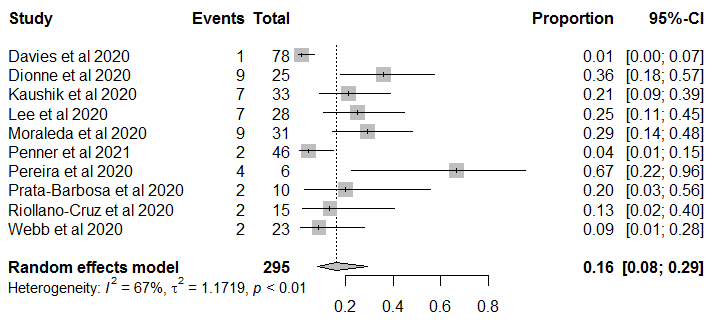
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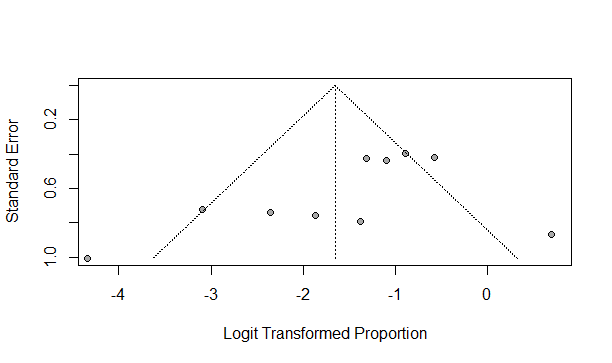
**Biologic immunomodulation**

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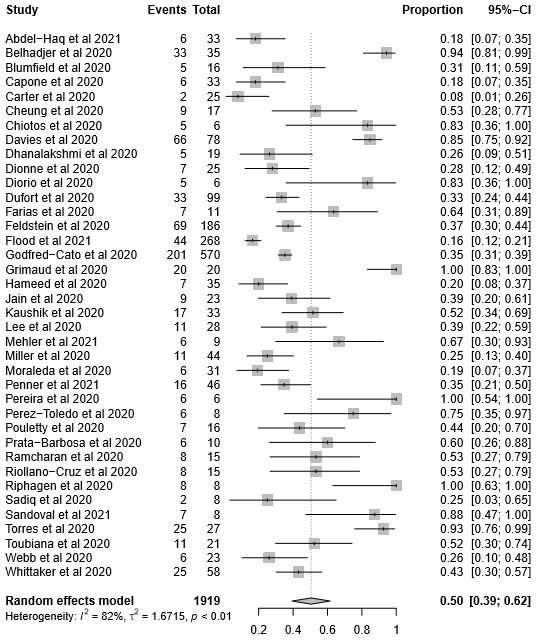
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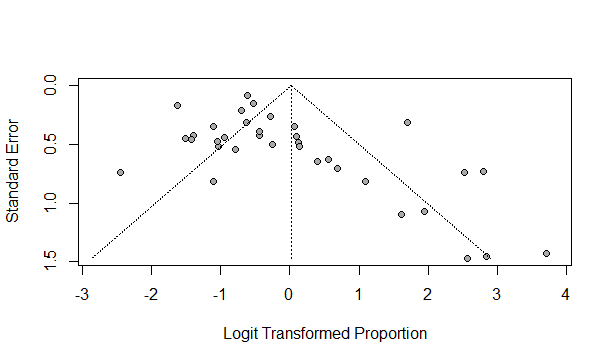
**ANTIVIRAL THERAPY**

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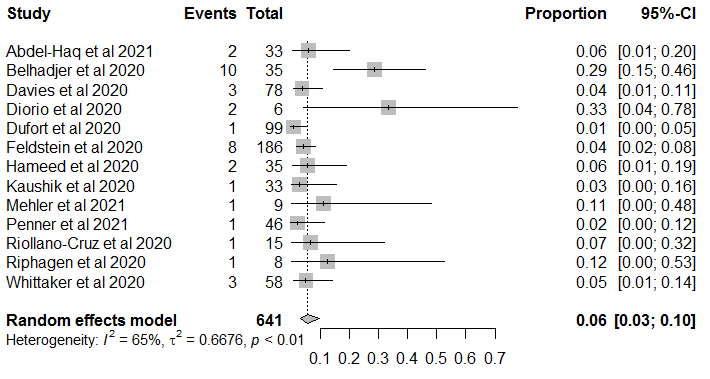
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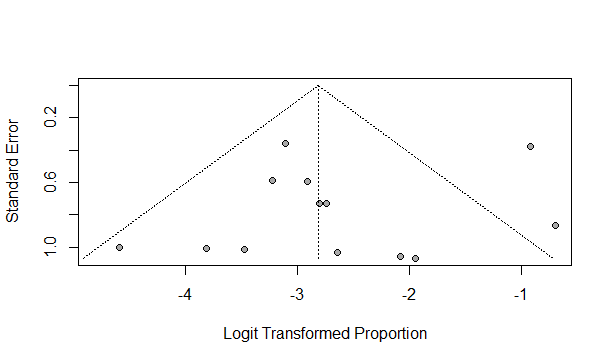
**RESPIRATORY SUPPORT (MV/NIV/ HFNC)**

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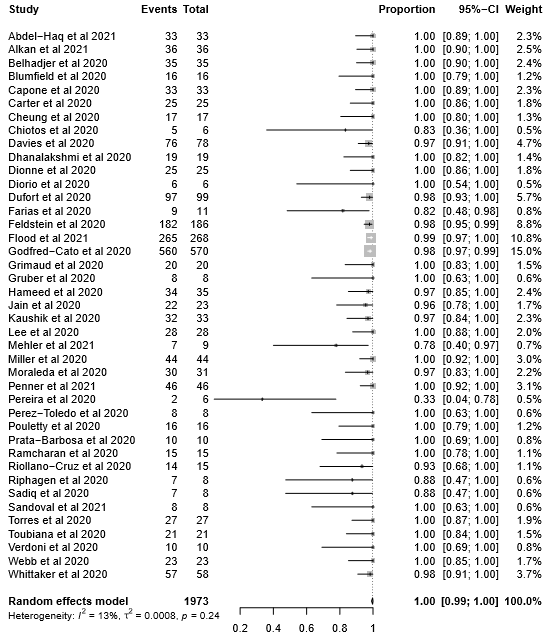
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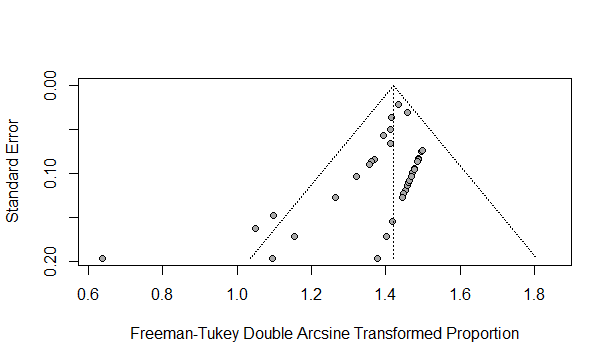
**ECMO**

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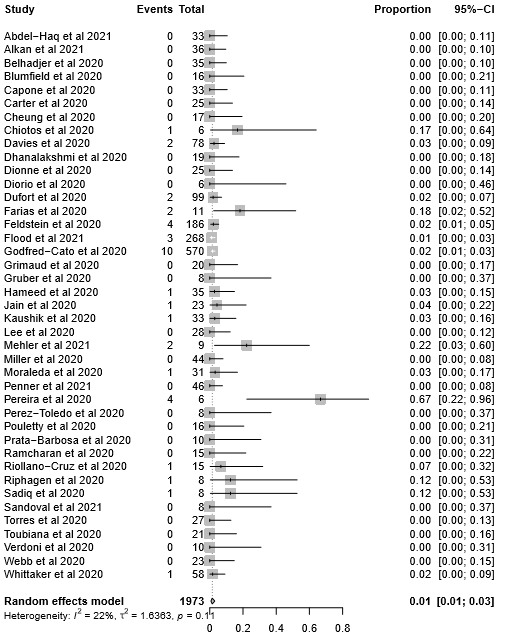
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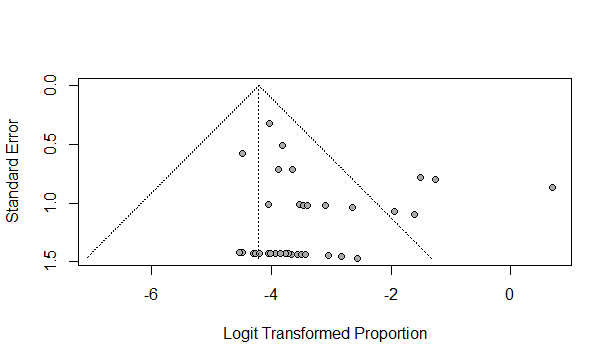
**RECOVERED PATIENTS**

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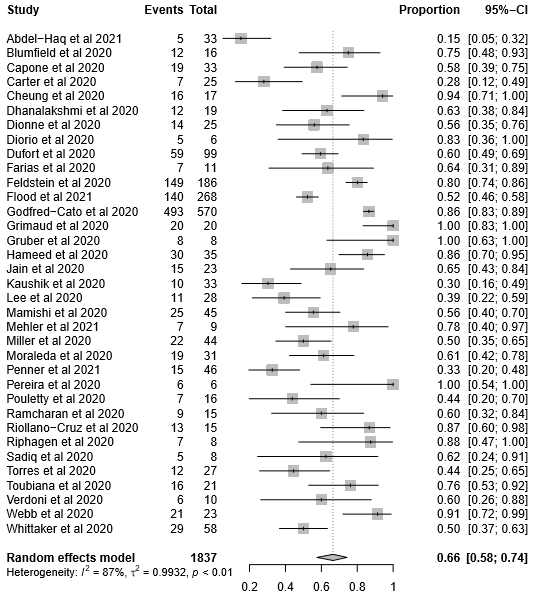
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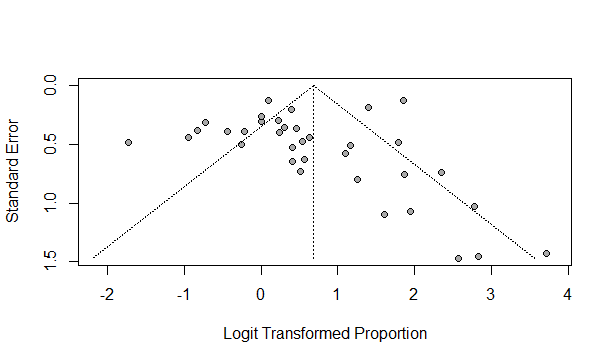
**DEATH**

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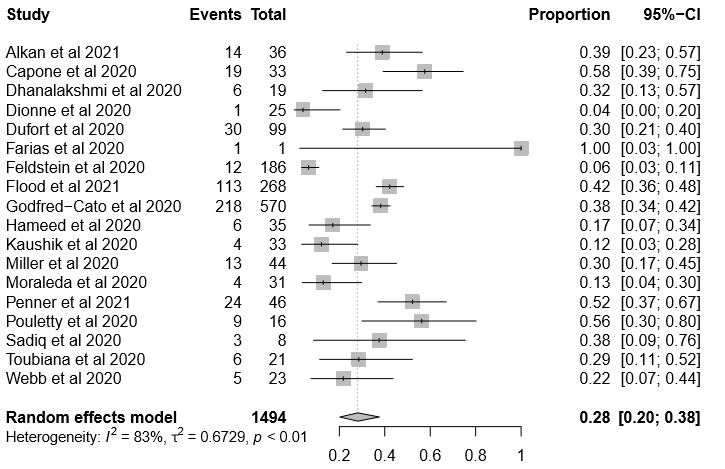
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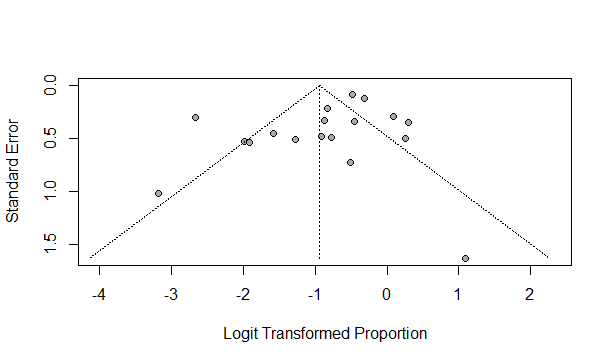
**CARDIAC SYMPTOMS**

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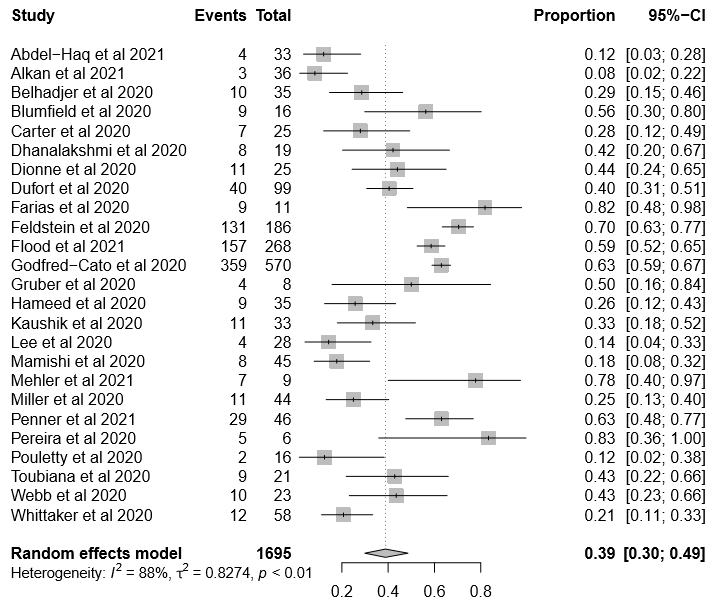
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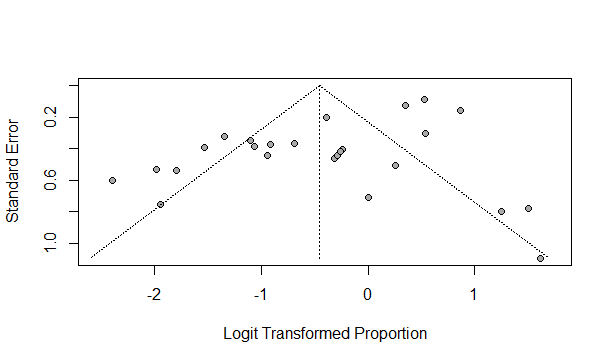
**NEUROLOGIC SYMPTOMS**

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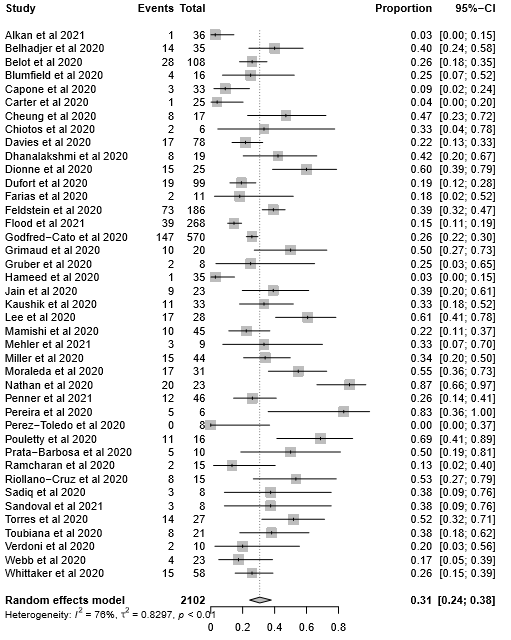
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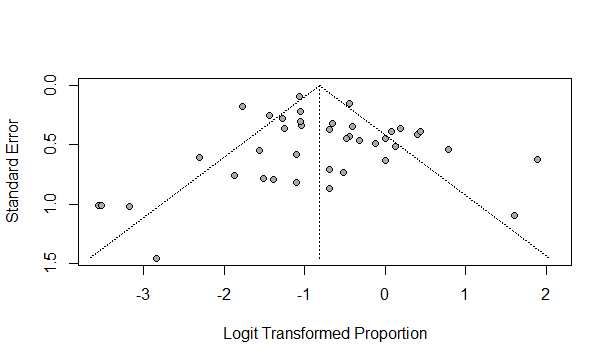
**RESPIRATORY SYMPTOMS**

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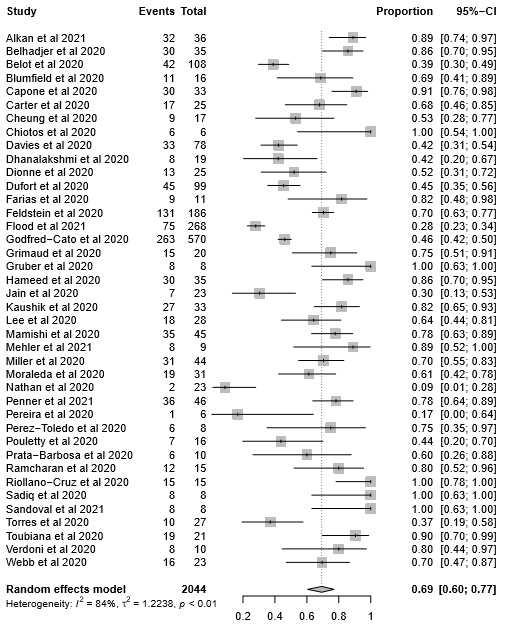
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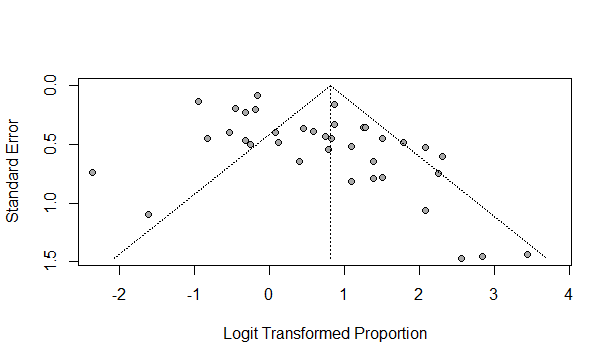
**Exams RT-PCR**

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**Exams SOROLOGY**

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