**Supplementary**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Study | Sensitivity | Specificity | Positive LR | Negative LR | DOR |
| Agullo et al. (27)  | 0.576 (0.487- 0.661)  | 0.998 (0.989 - 1.000)  | 299.39 (42.023 -2133.1)  | 0.425 (0.348 - 0.519)  | 704.36 (96.091 - 5163.0)  |
| Abdelrazik et al. (37)  | 0.431 (0.359- 0.505)  | 1.000 (0.989 - 1.000)  | 286.33 (17.860 -4590.3)  | 0.570 (0.503 - 0.645)  | 502.65(30.910 - 8173.8)  |
| Albert et al. (21)  | 0.796 (0.665- 0.894)  | 1.000 (0.990 - 1.000)  | 567.87 (35.470 -9091.7)  | 0.209 (0.125 - 0.350)  | 2712.1 (157.06 - 46833.5) |
| Ciotti et al.(6)  | 0.308 (0.170- 0.476) | 1.000 (0.715 - 1.000)  | 7.500 (0.478 -117.57)  | 0.717 (0.564 - 0.912)  | 10.455 (0.570 - 191.78)  |
| Kohmer et al.(7)  | 0.290 (0.204 - 0.389)  | 0.250 (0.169 - 0.347)  | 0.387 (0.279 -0.536)  | 2.840 (1.978 - 4.078)  | 0.136 (0.073 - 0.255)  |
| Kohmer et al.(7)  | 0.320 (0.230 - 0.421)  | 0.260 (0.177 - 0.357)  | 0.432 (0.318 -0.589)  | 2.615 (1.830 - 3.737)  | 0.165 (0.090 - 0.305)  |
| Kohmer et al.(7)  | 0.180 (0.110 - 0.269)  | 0.260 (0.177 - 0.357)  | 0.243 (0.158 -0.375)  | 3.154 (2.238 - 4.445)  | 0.077 (0.039 - 0.152)  |
| Kohmer et al.(7)  | 0.370 (0.276 - 0.472)  | 0.260 (0.177 - 0.357)  | 0.500 (0.378 -0.662)  | 2.423 (1.685 - 3.484)  | 0.206 (0.113 - 0.377)  |
| Linares et al. (22)  | 0.157 (0.114 - 0.207)  | 0.922 (0.881 - 0.951)  | 2.000 (1.203 -3.324)  | 0.915 (0.858 - 0.975)  | 2.186 (1.239- 3.857)  |
| Nalumansia et al.(23)  | 0.700 (0.594 - 0.792)  | 0.924 (0.874 - 0.959)  | 9.262 (5.398 -15.891)  | 0.325 (0.236 - 0.446)  | 28.538 (13.848 - 58.814)  |
| Pilarowski et al.(34)  | 0.023 (0.008 - 0.053)  | 0.960 (0.925 - 0.982)  | 0.576 (0.196 -1.691)  | 1.018 (0.984 - 1.052)  | 0.566 (0.187 - 1.717)  |
| Pilarowski et al.(34)  | 0.556 (0.212- 0.863)  | 0.503 (0.462 - 0.545)  | 1.119 (0.620 -2.018)  | 0.883 (0.423 - 1.841)  | 1.267 (0.337 - 4.767)  |
| Salvagno et al. (31)  | 0.340 (0.288-0.394)  | 0.994 (0.978 - 0.999)  | 54.500 (13.575 -218.81)  | 0.665 (0.614 - 0.719)  | 82.007(20.035- 335.66)  |
| Scohy et al. (24)  | 0.378 (0.291-0.472)  | 1.000 (0.916 - 1.000)  | 32.608 (2.053 -517.87)  | 0.628 (0.544 - 0.725)  | 51.913 (3.118- 864.30)  |
| Toptan et al.(25)  | 0.500 (0.319 -0.681)  | 1.000 (0.907 - 1.000)  | 39.000 (2.432 -625.53)  | 0.506 (0.359 - 0.714)  | 77.000 (4.357 - 1360.8)  |
| Torres et al.(26)  | 0.060 (0.043-0.081)  | 1.000 (0.994 - 1.000)  | 77.000 (4.741 -1250.6)  | 0.940 (0.922 - 0.959)  | 81.905 (5.021- 1336.2)  |
| Prince-Guerra et al.(35)  | 0.525 (0.467-0.583)  | 0.999 (0.997 - 1.000)  | 409.57 (152.91 -1097.0)  | 0.476 (0.422 - 0.536)  | 861.29 (314.78 - 2356.6)  |
| Courtellemont et al. (9)  | 0.967 (0.918-0.991)  | 1.000 (0.971 - 1.000)  | 246.56 (15.502 -3921.4)  | 0.037 (0.015 - 0.092)  | 6658.3 (354.65 - 125004.7) |
| Courtellemont et al. (9)  | 0.706 (0.525-0.849)  | 1.000 (0.897 - 1.000)  | 49.000 (3.100 -774.56)  | 0.304 (0.183 - 0.506)  | 161.00 (9.002 - 2879.3)  |
| Cerutti et al. (36)  | 0.706 (0.612- 0.790)  | 1.000 (0.983 - 1.000)  | 312.82(19.576 - 4998.8)  | 0.296 (0.222 - 0.395)  | 1056.4 (63.918 - 17459.1) |

**Table 2.** Sub analysis of sensitivity and specificity for nasopharyngeal swab with 95% confidence interval.

**Figure 3.** A forest plot showing the estimates for sensitivity (A) and specificity (B) for nasopharyngeal swab.



**Table 3.** Sub analysis of sensitivity and specificity for throat washing and broncho-alveolar fluids with 95% confidence interval.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Study | Sensitivity | Specificity | Positive LR | Negative LR | DOR |
| Schildgen et al. (32) | 0.329 (0.223- 0.449) | 0.877 (0.779- 0.942) | 2.667 (1.332 - 5.338) | 0.766 (0.638 - 0.919) | 3.483(1.486- 8.162) |
| Schildgen et al. (32) | 0.500 (0.381- 0.619) | 0.781 (0.669- 0.869) | 2.281 (1.399 - 3.721) | 0.640 (0.495- 0.829) | 3.563 (1.738 - 7.302) |
| Schildgen et al. (32) | 0.877 (0.779- 0.942) | 0.795 (0.684- 0.880) | 4.267 (2.696- 6.753) | 0.155(0.083 - 0.289) | 27.496(11.184- 67.599) |
| CK Mak et al. (18) | 0.400 (0.257- 0.557) | 1.000 (0.921- 1.000) | 37.000 (2.297 - 595.89) | 0.604 (0.476- 0.768) | 61.218 (3.546- 1056.9) |

 A



 B



**Figure 4.** A forest plot showing the estimates for sensitivity (A) and specificity (B) for Throat washing and Bronchoalveolar fluids.

**Table 4.** Sub analysis of sensitivity and specificity for finger-stick whole-blood with 95% confidence interval.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Study | Sensitivity | Specificity | Positive LR | Negative LR | DOR |
| Pere et al. (10) | 0.958 (0.857- 0.995) | 0.981 (0.897 - 1.000) | 49.833 (7.147- 347.45) | 0.042 (0.011- 0.165) | 1173.0 (102.92- 13368.3) |
| Pere et al. (10) | 0.917 (0.800- 0.977) | 0.865 (0.742 - 0.944) | 6.810 (3.401 - 13.636) | 0.096 (0.037- 0.248) | 70.714 (19.333- 258.66) |
| Pere et al. (10) | 0.923 (0.749- 0.991) | 1.000 (0.858 - 1.000) | 45.370 (2.910- 707.30) | 0.094 (0.029- 0.308) | 480.20 (21.903- 10527.9) |
| Pere et al. (10) | 0.979 (0.889- 0.999) | 0.981 (0.897- 1.000) | 50.917 (7.306 - 354.84) | 0.021 (0.003- 0.148) | 2397.0 (145.76- 39418.0) |
| Pere et al. (10) | 0.915 (0.796- 0.976) | 0.846 (0.719 - 0.931) | 5.947 (3.125 - 11.316) | 0.101 (0.039- 0.259) | 59.125 (16.576- 210.89) |

 A B

ab 

**Figure 5.** A forest plot showing the estimates for sensitivity (A) and specificity (B) for Finger-stick whole-blood.

**Table 5.** Sub analysis of sensitivity and specificity for Symptomatic patients with 95% confidence interval.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Study | Sensitivity | Specificity | Positive LR | Negative LR | DOR |
| Agullo et al. (27) | 0.147 (0.111- 0.188) | 1.000 (0.923- 1.000) | 13.871 (0.870 - 221.04) | 0.862 (0.817- 0.908) | 16.099 (0.977- 265.36) |
| Agullo et al. (27) | 0.083 (0.054- 0.120) | 1.000 (0.944- 1.000) | 10.941 (0.675- 177.41) | 0.923 (0.886- 0.961) | 11.854 (0.712- 197.28) |
| Agullo et al. (27) | 0.166 (0.127- 0.210) | 1.000 (0.905- 1.000) | 12.667 (0.799 - 200.93) | 0.844 (0.795- 0.897) | 15.000 (0.908- 247.93) |
| Prince-Guerra et al. (35) | 0.642 (0.566- 0.713) | 1.000 (0.994- 1.000) | 836.18 (52.243- 13383.6) | 0.359 (0.295 - 0.437) | 2329.0 (143.07- 37912.1) |
| Scohy et al. (24) | 0.291 (0.198 - 0.399) | 0.395 (0.292- 0.507) | 0.481 (0.332- 0.697) | 1.794 (1.337- 2.408) | 0.268 (0.142- 0.506) |
| Schildgen et al. (32) | 0.304 (0.132- 0.529) | 0.783 (0.563- 0.925) | 1.400 (0.519- 3.773) | 0.889 (0.629- 1.256) | 1.575 (0.416 - 5.959) |
| Schildgen et al. (32) | 0.391 (0.197- 0.615) | 0.826 (0.612- 0.950) | 2.250 (0.806- 6.279) | 0.737 (0.505- 1.075) | 3.054 (0.780 - 11.959) |
| Schildgen et al. (32) | 1.000 (0.852- 1.000) | 0.087 (0.011- 0.280) | 1.093 (0.942 - 1.268) | 0.200 (0.010- 3.950) | 5.465 (0.248 - 120.37) |

 **Figure 6.** A forest plot showing the estimates for sensitivity (A) and specificity (B) for Symptomatic patients.

 A



 B



**Table 6.** Sub analysis of sensitivity and specificity for asymptomatic patients with 95% confidence interval.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Study | Sensitivity | Specificity | Positive LR | Negative LR | DOR |
| Agullo et al. (27) | 0.034 (0.015- 0.065) | 1.000 (0.872 - 1.000) | 1.992 (0.118-33.587) | 0.982 (0.929- 1.038) | 2.028 (0.114 -36.111) |
| Agullo et al. (27) | 0.014 (0.003- 0.040) | 1.000 (0.881 - 1.000) | 0.972 (0.051-18.363) | 1.000 (0.952- 1.051) | 0.972 (0.049-19.288) |
| Agullo et al. (27) | 0.041 (0.019- 0.076) | 1.000 (0.858 - 1.000) | 2.140 (0.128-35.668) | 0.977 (0.918- 1.040) | 2.191 (0.124-38.806) |
| Prince-Guerra et al. (35) | 0.358 (0.273- 0.449) | 0.998 (0.996 - 1.000) | 220.80 (80.629-604.68) | 0.643 (0.564- 0.734) | 343.23 (120.37-978.66) |
| Scohy et al. (24) | 0.089 (0.025- 0.212) | 0.689 (0.534 - 0.818) | 0.286 (0.102-0.802) | 1.323 (1.065- 1.642) | 0.216 (0.065-0.721) |
| Courtellemont et al. (9) | 1.000 (0.858- 1.000) | 0.886 (0.733 - 0.968) | 7.840 (3.297-18.640) | 0.023 (0.001- 0.356) | 343.00 (17.613-6679.5) |
| Schildgen et al. (32) | 0.296 (0.138- 0.502) | 0.926 (0.757- 0.991) | 4.000 (0.934-17.134) | 0.760 (0.582- 0.993) | 5.263 (1.000-27.690) |
| Schildgen et al. (32) | 0.370 (0.194- 0.576) | 0.704 (0.498- 0.862) | 1.250 (0.584-2.677) | 0.895 (0.613 - 1.307) | 1.397 (0.448- 4.355) |
| Schildgen et al. (32) | 0.852 (0.663 - 0.958) | 0.148 (0.042- 0.337) | 1.000 (0.801-1.249) | 1.000 (0.278 - 3.594) | 1.000 (0.223- 4.489) |

 A



 B



**Figure 7.** A forest plot showing the estimates for sensitivity (A) and specificity (B) for asymptomatic patients.