

Supplementary Table 8.1: Mean differences for the covariates included in the analysis of the influence of colchicine prescription in COVID-19 related hospital admissions before and after using propensity score-based methods

| Covariates | Unadj | GLM | | | GBM | | | CBPS | | | NPCBPS | | | MLPS | | |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | Adj | Trim | Stab | Adj | Trim | Stab | Adj | Trim | Stab | Adj | Trim | Stab | Adj | Trim | Stab |
| Women | -0.226 | 0.009 | -0.075 | 0.009 | 0.004 | -0.101 | 0.004 | -0.002 | -0.073 | -0.002 | 0.020 | -0.072 | 0.020 | -0.084 | -0.112 | -0.084 |
| Age | 0.331 | 0.199 | 0.228 | 0.199 | 0.042 | 0.281 | 0.042 | 0.176 | 0.238 | 0.176 | 0.097 | 0.166 | 0.097 | 0.156 | 0.293 | 0.156 |
| Other inflammatory diseases | -0.102 | 0.131 | 0.094 | 0.131 | 0.158 | 0.009 | 0.158 | 0.129 | 0.083 | 0.129 | 0.022 | 0.079 | 0.022 | 0.032 | -0.032 | 0.032 |
| Rheumatoid Arthritis | -0.068 | 0.023 | 0.013 | 0.023 | -0.018 | -0.023 | -0.018 | 0.033 | 0.012 | 0.033 | -0.008 | 0.032 | -0.008 | -0.046 | -0.039 | -0.046 |
| Osteoarthritis of Knee | 0.067 | 0.047 | 0.075 | 0.047 | 0.023 | 0.061 | 0.023 | 0.048 | 0.074 | 0.048 | 0.001 | 0.048 | 0.001 | 0.049 | 0.061 | 0.049 |
| Osteoarthritis of Hand | 0.157 | 0.008 | 0.064 | 0.008 | 0.008 | 0.170 | 0.008 | 0.026 | 0.086 | 0.026 | -0.012 | 0.041 | -0.012 | 0.150 | 0.195 | 0.150 |
| Monoarthritis | 0.049 | 0.008 | 0.025 | 0.008 | 0.003 | 0.032 | 0.003 | 0.007 | 0.021 | 0.007 | -0.003 | 0.010 | -0.003 | 0.028 | 0.037 | 0.028 |
| Behçet's Disease | 0.055 | 0.001 | 0.005 | 0.001 | 0.003 | 0.018 | 0.003 | 0.002 | 0.007 | 0.002 | -0.001 | 0.004 | -0.001 | 0.024 | 0.031 | 0.024 |
| Gout | 0.458 | 0.004 | 0.045 | 0.004 | 0.022 | 0.182 | 0.022 | 0.018 | 0.062 | 0.018 | -0.010 | 0.029 | -0.010 | 0.191 | 0.250 | 0.191 |
| Analgesic | -0.071 | 0.010 | -0.031 | 0.010 | -0.074 | -0.059 | -0.074 | -0.021 | -0.040 | -0.021 | 0.052 | -0.046 | 0.052 | -0.081 | -0.063 | -0.081 |
| NSAIDs | -0.061 | -0.080 | -0.080 | -0.080 | -0.085 | -0.079 | -0.085 | -0.078 | -0.080 | -0.078 | -0.005 | -0.083 | -0.005 | -0.085 | -0.073 | -0.085 |
| DMARDs | -0.033 | 0.039 | 0.023 | 0.039 | 0.024 | -0.008 | 0.024 | 0.054 | 0.021 | 0.054 | -0.011 | 0.029 | -0.011 | -0.011 | -0.019 | -0.011 |
| Corticosteroid oral | 0.096 | 0.057 | 0.077 | 0.057 | 0.024 | 0.061 | 0.024 | 0.054 | 0.074 | 0.054 | -0.002 | 0.058 | -0.002 | 0.045 | 0.067 | 0.045 |
| Hypertension | 0.083 | 0.038 | 0.042 | 0.038 | 0.000 | 0.039 | 0.000 | 0.041 | 0.046 | 0.041 | -0.003 | 0.029 | -0.003 | -0.002 | 0.041 | -0.002 |
| Dyslipidemia | 0.025 | 0.012 | 0.012 | 0.012 | -0.009 | 0.007 | -0.009 | 0.004 | 0.012 | 0.004 | 0.057 | -0.017 | 0.057 | -0.014 | 0.011 | -0.014 |
| Thyroid disease | -0.009 | -0.004 | 0.007 | -0.004 | -0.013 | -0.002 | -0.013 | -0.003 | 0.008 | -0.003 | -0.011 | 0.002 | -0.011 | -0.011 | -0.003 | -0.011 |
| Diabetes Mellitus | 0.007 | 0.013 | -0.002 | 0.013 | -0.021 | 0.005 | -0.021 | 0.003 | -0.005 | 0.003 | -0.012 | -0.005 | -0.012 | -0.015 | -0.001 | -0.015 |
| Cancer | 0.015 | -0.013 | -0.004 | -0.013 | -0.004 | 0.011 | -0.004 | -0.012 | -0.002 | -0.012 | -0.028 | -0.009 | -0.028 | -0.002 | 0.008 | -0.002 |
| Vascular disease | 0.032 | 0.017 | 0.021 | 0.017 | 0.035 | 0.028 | 0.035 | 0.020 | 0.024 | 0.020 | -0.015 | 0.003 | -0.015 | 0.010 | 0.021 | 0.010 |
| Lung disease | 0.018 | 0.027 | 0.042 | 0.027 | -0.004 | 0.025 | -0.004 | 0.026 | 0.040 | 0.026 | -0.002 | 0.040 | -0.002 | 0.006 | 0.020 | 0.006 |
| Cardiovascular disease | 0.057 | 0.021 | 0.047 | 0.021 | 0.016 | 0.052 | 0.016 | 0.030 | 0.050 | 0.030 | -0.004 | 0.048 | -0.004 | 0.022 | 0.040 | 0.022 |
| Days from visit until the start of the study | -0.132 | -0.013 | -0.178 | -0.013 | -0.030 | -0.032 | -0.030 | -0.044 | -0.162 | -0.044 | 0.065 | -0.185 | 0.065 | -0.080 | -0.048 | -0.080 |
| Number of unbalanced covariates | 14 | 4 | 8 | 4 | 3 | 9 | 3 | 5 | 10 | 5 | 4 | 6 | 4 | 7 | 8 | 7 |
| Coefficient of variation | - | 4.151 | 2.284 | 0.417 | 3.903 | 0.775 | 0.296 | 3.499 | 1.982 | 0.324 | 0.834 | 0.225 | 0.256 | 0.792 | 0.484 | 0.202 |

Adj: Adjusted; CBPS: Covariate balancing method; DMARDs: Disease modifying antirheumatic drugs; GBM: Generalized boosted models; GLM: Generalized linear models; MLPS: machine learning-based PS methods; NPCBPS: Non-parametric covariate balancing method; NSAIDs: Non-steroidal antiinflammatory drugs; Stab: Stabilized; Trim: Trimmed; Unadj: Unadjusted

Supplementary Table 8.2: Mean differences for the covariates included in the analysis of the influence of colchicine prescription in COVID-19 related hospital admissions before and after using non-propensity score-based methods

| Covariates | Unadj | EBAL | | | EBCW | | | OBW | | |
|--|--------|-----------|----------|-----------|-----------|----------|-----------|-----------|--------|-----------|
| | | Adj | Trim | Stab | Adj | Trim | Stab | Adj | Trim | Stab |
| Women | -0.226 | -3.25E-05 | -0.097 | -3.25E-05 | 4.28E-10 | -0.097 | 4.28E-10 | -1.03E-07 | -0.056 | -1.03E-07 |
| Age | 0.331 | 7.89E-06 | 0.149 | 7.89E-06 | 1.42E-09 | 0.149 | 1.42E-09 | 1.52E-07 | 0.031 | 1.52E-07 |
| Other inflammatory diseases | -0.102 | -1.66E-05 | 0.043 | -1.66E-05 | -5.78E-10 | 0.043 | -5.78E-10 | -5.69E-08 | 0.063 | -5.69E-08 |
| Rheumatoid Arthritis | -0.068 | -1.06E-05 | 2.13E-04 | -1.06E-05 | -3.48E-10 | 2.43E-04 | -3.48E-10 | -3.35E-08 | 0.031 | -3.35E-08 |
| Osteoarthritis of Knee | 0.067 | -1.02E-07 | 0.042 | -1.02E-07 | -1.89E-10 | 0.042 | -1.89E-10 | 4.02E-08 | 0.023 | 4.02E-08 |
| Osteoarthritis of Hand | 0.157 | -1.31E-06 | 0.080 | -1.31E-06 | -1.58E-10 | 0.080 | -1.58E-10 | 3.80E-08 | 0.017 | 3.80E-08 |
| Monoarthritis | 0.049 | 6.56E-06 | 0.012 | 6.56E-06 | 3.42E-12 | 0.012 | 3.42E-12 | 4.24E-08 | 0.006 | 4.24E-08 |
| Behçet's Disease | 0.055 | 6.04E-06 | 0.012 | 6.04E-06 | -1.43E-11 | 0.012 | -1.43E-11 | 2.22E-08 | 0.004 | 2.22E-08 |
| Gout | 0.458 | 5.89E-05 | 0.113 | 5.89E-05 | -5.34E-11 | 0.113 | -5.34E-11 | 2.32E-07 | 0.034 | 2.32E-07 |
| Analgesic | -0.071 | -2.69E-07 | -0.041 | -2.69E-07 | 1.85E-09 | -0.041 | 1.85E-09 | -2.51E-08 | -0.023 | -2.51E-08 |
| NSAIDs | -0.061 | 1.35E-05 | -0.001 | 1.35E-05 | -4.37E-10 | -0.001 | -4.37E-10 | -3.68E-08 | 0.031 | -3.68E-08 |
| DMARDs | -0.033 | -5.79E-06 | 0.016 | -5.79E-06 | -2.69E-10 | 0.016 | -2.69E-10 | -1.88E-08 | 0.025 | -1.88E-08 |
| Corticosteroid oral | 0.096 | -1.49E-06 | 0.037 | -1.49E-06 | -2.10E-11 | 0.037 | -2.10E-11 | 6.50E-08 | 0.011 | 6.50E-08 |
| Hypertension | 0.083 | 8.20E-06 | 0.023 | 8.20E-06 | -2.51E-11 | 0.023 | -2.51E-11 | 5.51E-08 | 0.008 | 5.51E-08 |
| Dyslipidemia | 0.025 | 1.49E-06 | 0.002 | 1.49E-06 | -5.79E-10 | 0.002 | -5.79E-10 | 1.59E-08 | 0.001 | 1.59E-08 |
| Thyroid disease | -0.009 | -5.77E-06 | 0.001 | -5.77E-06 | -2.94E-10 | 0.001 | -2.94E-10 | -9.36E-09 | -0.011 | -9.36E-09 |
| Diabetes Mellitus | 0.007 | 7.33E-06 | 0.009 | 7.33E-06 | -2.02E-10 | 0.009 | -2.02E-10 | -4.79E-09 | 0.010 | -4.79E-09 |
| Cancer | 0.015 | 1.13E-06 | -0.002 | 1.13E-06 | -2.11E-10 | -0.002 | -2.11E-10 | 3.25E-09 | -0.017 | 3.25E-09 |
| Vascular disease | 0.032 | 1.08E-07 | 1.27E-04 | 1.08E-07 | 2.95E-09 | 1.26E-04 | 2.95E-09 | 1.47E-08 | -0.007 | 1.47E-08 |
| Lung disease | 0.018 | -3.22E-06 | 0.025 | -3.22E-06 | -8.29E-12 | 0.025 | -8.29E-12 | 7.04E-09 | 0.009 | 7.04E-09 |
| Cardiovascular disease | 0.057 | -1.85E-06 | 0.040 | -1.85E-06 | 1.63E-10 | 0.040 | 1.63E-10 | 2.63E-08 | 0.022 | 2.63E-08 |
| Days from visit until the start of the study | -0.132 | -1.09E-05 | -0.209 | -1.09E-05 | 2.24E-09 | -0.209 | 2.24E-09 | -2.41E-08 | -0.167 | -2.41E-08 |
| Number of unbalanced covariates | 14 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 3 | 0 |
| Coefficient of variation | - | 5.706 | 1.475 | 0.476 | 5.706 | 1.475 | 0.476 | 0.442 | 0.255 | 0.255 |

Adj: Adjusted; DMARDs: Disease modifying antirheumatic drugs; EBAL: Entropy balancing; EBCW: Empirical balancing calibration weighting; NSAIDs: Non-steroidal anti-inflammatory drugs; OBW: Optimization-based weighting; Stab: Stabilized; Trim: Trimmed; Unadj: Unadjusted

Supplementary Table 8.3: Cox models showing the association of colchicine prescription and unbalanced covariates in the hazard of COVID-19 related hospital admission after balancing covariates using several PS and non-PS based methods

| Method | Adj | | | | Trim | | | | Stab | | | |
|--|-------|--------------|--------|---------|-------|-------------|--------|---------|-------|-------------|--------|---------|
| | HR | 95% CI | pvalue | pvalue* | HR | 95% CI | pvalue | pvalue* | HR | 95% CI | pvalue | pvalue* |
| GLM | | | | | | | | | | | | |
| Colchicine Prescription | 3.324 | 1.101-10.035 | 0.033 | 0.869 | 2.587 | 0.946-7.081 | 0.064 | 0.868 | 2.67 | 0.944-7.55 | 0.064 | 0.84 |
| Knee Osteoarthritis | - | - | - | - | 0.975 | 0.25-3.797 | 0.971 | 0.029 | - | - | - | - |
| Hand Osteoarthritis | - | - | - | - | 0.096 | 0.022-0.411 | 0.002 | 0.949 | - | - | - | - |
| Oral Corticosteroids | 0.278 | 0.095-0.818 | 0.02 | 0.206 | 0.584 | 0.268-1.274 | 0.176 | 0.332 | 1.039 | 0.618-1.745 | 0.885 | 0.523 |
| Age | 1.017 | 0.968-1.068 | 0.504 | 0.203 | 1.025 | 0.995-1.057 | 0.104 | 0.211 | 1.031 | 1.017-1.046 | 0 | 0.19 |
| Other inflammatory diseases | 0.23 | 0.078-0.684 | 0.008 | 0.068 | 0.581 | 0.263-1.283 | 0.179 | 0.205 | 1.535 | 1.001-2.354 | 0.05 | 0.334 |
| AINEs | 0.274 | 0.091-0.825 | 0.021 | 0.131 | 0.488 | 0.204-1.167 | 0.107 | 0.197 | 0.869 | 0.452-1.67 | 0.673 | 0.276 |
| Women | - | - | - | - | 0.58 | 0.238-1.416 | 0.232 | 0.517 | - | - | - | - |
| Days from visit until the start of the study | - | - | - | - | 1.011 | 0.999-1.023 | 0.067 | 0.217 | - | - | - | - |
| GLOBAL MODEL | NA | NA | NA | 0.139 | NA | NA | NA | 0.315 | NA | NA | NA | 0.562 |
| GBM | | | | | | | | | | | | |
| Colchicine Prescription | 2.77 | 0.755-10.159 | 0.124 | 0.854 | 2.152 | 0.887-5.222 | 0.09 | 0.834 | 2.368 | 0.642-8.728 | 0.195 | 0.82 |
| Knee Osteoarthritis | - | - | - | - | 1.178 | 0.505-2.746 | 0.705 | 0.031 | - | - | - | - |
| Hand Osteoarthritis | - | - | - | - | 0.167 | 0.046-0.609 | 0.007 | 0.958 | - | - | - | - |
| Cardiovascular disease | - | - | - | - | 1.567 | 0.736-3.336 | 0.244 | 0.892 | - | - | - | - |
| Oral Corticosteroids | - | - | - | - | 0.922 | 0.526-1.618 | 0.778 | 0.486 | - | - | - | - |
| Age | - | - | - | - | 1.032 | 1.014-1.05 | 0 | 0.197 | - | - | - | - |
| Other inflammatory diseases | 0.277 | 0.084-0.912 | 0.035 | 0.122 | - | - | - | - | 1.512 | 0.983-2.325 | 0.06 | 0.338 |
| Gout | - | - | - | - | 0.789 | 0.33-1.891 | 0.596 | 0.139 | - | - | - | - |
| AINEs | 0.348 | 0.14-0.867 | 0.023 | 0.158 | 0.816 | 0.416-1.601 | 0.555 | 0.25 | 0.614 | 0.325-1.159 | 0.133 | 0.277 |
| Analgesic | 0.428 | 0.168-1.089 | 0.075 | 0.041 | 0.683 | 0.407-1.144 | 0.148 | 0.099 | 0.994 | 0.612-1.615 | 0.981 | 0.116 |
| Women | - | - | - | - | 0.65 | 0.383-1.101 | 0.109 | 0.506 | - | - | - | - |
| GLOBAL MODEL | NA | NA | NA | 0.052 | NA | NA | NA | 0.222 | NA | NA | NA | 0.26 |

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|--|-------|-------------|-------|-------|-------|-------------|-------|-------|-------|-------------|-------|-------|
| CBPS | | | | | | | | | | | | |
| Colchicine Prescription | 3.272 | 1.084-9.874 | 0.035 | 0.867 | 2.496 | 0.858-7.258 | 0.093 | 0.858 | 2.608 | 0.957-7.109 | 0.061 | 0.838 |
| Knee Osteoarthritis | - | - | - | - | 1 | 0.263-3.805 | 1 | 0.03 | - | - | - | - |
| Hand Osteoarthritis | - | - | - | - | 0.099 | 0.022-0.44 | 0.002 | 0.95 | - | - | - | - |
| Cardiovascular disease | - | - | - | - | 1.595 | 0.467-5.454 | 0.457 | 0.877 | - | - | - | - |
| Oral Corticosteroids | 0.351 | 0.126-0.974 | 0.044 | 0.23 | 0.683 | 0.326-1.434 | 0.314 | 0.364 | 1.105 | 0.654-1.868 | 0.709 | 0.528 |
| Age | 1.017 | 0.972-1.065 | 0.467 | 0.204 | 1.025 | 0.997-1.053 | 0.083 | 0.213 | 1.031 | 1.018-1.045 | 0 | 0.189 |
| Other inflammatory diseases | 0.32 | 0.117-0.871 | 0.026 | 0.097 | 0.638 | 0.286-1.42 | 0.271 | 0.227 | 1.658 | 1.11-2.477 | 0.014 | 0.338 |
| Gout | - | - | - | - | 0.667 | 0.235-1.892 | 0.447 | 0.128 | - | - | - | - |
| AINEs | 0.322 | 0.116-0.888 | 0.029 | 0.159 | 0.551 | 0.239-1.268 | 0.161 | 0.215 | 0.888 | 0.465-1.698 | 0.721 | 0.277 |
| Analgesic | - | - | - | - | - | - | - | - | - | - | - | - |
| DMARDs | 0.287 | 0.098-0.842 | 0.023 | 0.013 | - | - | - | - | 0.698 | 0.385-1.264 | 0.236 | 0.179 |
| Women | - | - | - | - | 0.593 | 0.271-1.3 | 0.192 | 0.516 | - | - | - | - |
| Days from visit until the start of the study | - | - | - | - | 1.01 | 0.999-1.021 | 0.066 | 0.225 | - | - | - | - |
| GLOBAL MODEL | NA | NA | NA | 0.02 | NA | NA | NA | 0.329 | NA | NA | NA | 0.338 |
| NPCBPS | | | | | | | | | | | | |
| Colchicine Prescription | 1.975 | 0.679-5.747 | 0.212 | 0.826 | 2.706 | 1.06-6.908 | 0.037 | 0.848 | 1.968 | 0.672-5.764 | 0.217 | 0.825 |
| Oral Corticosteroids | - | - | - | - | 1.113 | 0.657-1.884 | 0.691 | 0.537 | - | - | - | - |
| Dyslipidemia | 0.747 | 0.44-1.27 | 0.282 | 0.942 | - | - | - | - | 0.685 | 0.434-1.082 | 0.105 | 0.942 |
| Age | 1.035 | 1.021-1.05 | 0 | 0.189 | 1.034 | 1.021-1.046 | 0 | 0.188 | 1.037 | 1.024-1.05 | 0 | 0.186 |
| Other inflammatory diseases | - | - | - | - | 1.684 | 1.135-2.499 | 0.01 | 0.343 | - | - | - | - |
| AINEs | - | - | - | - | 0.918 | 0.484-1.743 | 0.794 | 0.277 | - | - | - | - |
| Analgesic | 0.677 | 0.408-1.122 | 0.13 | 0.1 | - | - | - | - | 0.789 | 0.498-1.251 | 0.314 | 0.118 |
| DMARDs | - | - | - | - | - | - | - | - | - | - | - | - |
| Women | - | - | - | - | 0.684 | 0.466-1.003 | 0.052 | 0.503 | - | - | - | - |
| Days from visit until the start of the study | 1.002 | 0.997-1.006 | 0.502 | 0.227 | 1.002 | 0.998-1.006 | 0.389 | 0.228 | 1 | 0.996-1.004 | 0.979 | 0.224 |
| GLOBAL MODEL | NA | NA | NA | 0.345 | NA | NA | NA | 0.599 | NA | NA | NA | 0.369 |
| MLPS | | | | | | | | | | | | |

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|---|-------|--------------|-------|-------|-------|-------------|-------|-------|-------|--------------|-------|-------|
| Colchicine Prescription | 1.964 | 0.808-4.776 | 0.137 | 0.828 | 1.982 | 0.842-4.666 | 0.117 | 0.827 | 1.945 | 0.882-4.286 | 0.099 | 0.818 |
| Knee Osteoarthritis | - | - | - | - | 1.009 | 0.517-1.969 | 0.979 | 0.023 | - | - | - | - |
| Hand Osteoarthritis | 0.179 | 0.049-0.647 | 0.009 | 0.959 | 0.185 | 0.051-0.663 | 0.01 | 0.959 | 0.412 | 0.131-1.294 | 0.129 | 0.968 |
| Oral Corticosteroids | - | - | - | - | 1.026 | 0.607-1.735 | 0.924 | 0.503 | - | - | - | - |
| Age | 1.034 | 1.018-1.05 | 0 | 0.195 | 1.035 | 1.02-1.05 | 0 | 0.191 | 1.035 | 1.022-1.049 | 0 | 0.19 |
| Gout | 0.954 | 0.4-2.279 | 0.916 | 0.155 | 0.946 | 0.409-2.186 | 0.897 | 0.155 | 0.786 | 0.273-2.264 | 0.655 | 0.121 |
| AINEs | 0.83 | 0.43-1.605 | 0.581 | 0.257 | 0.838 | 0.436-1.61 | 0.595 | 0.258 | 0.93 | 0.481-1.798 | 0.83 | 0.287 |
| Analgesic | 0.755 | 0.464-1.227 | 0.256 | 0.108 | 0.751 | 0.458-1.231 | 0.256 | 0.11 | 0.813 | 0.503-1.314 | 0.398 | 0.121 |
| Women | 0.674 | 0.421-1.079 | 0.1 | 0.505 | 0.697 | 0.45-1.081 | 0.107 | 0.502 | 0.676 | 0.467-0.978 | 0.038 | 0.501 |
| Days from visit until the start of the study | 1.003 | 0.997-1.01 | 0.256 | 0.231 | - | - | - | - | 1 | 0.996-1.004 | 0.966 | 0.224 |
| GLOBAL MODEL | NA | NA | NA | 0.307 | NA | NA | NA | 0.172 | NA | NA | NA | 0.3 |
| EBAL | | | | | | | | | | | | |
| Colchicine Prescription | 3.11 | 0.956-10.117 | 0.059 | 0.844 | 2.558 | 0.974-6.722 | 0.057 | 0.842 | 3.102 | 0.959-10.035 | 0.059 | 0.843 |
| Hand Osteoarthritis | - | - | - | - | 0.154 | 0.04-0.585 | 0.006 | 0.958 | - | - | - | - |
| Gout | - | - | - | - | 0.628 | 0.233-1.692 | 0.358 | 0.116 | - | - | - | - |
| Women | - | - | - | - | 0.554 | 0.265-1.161 | 0.118 | 0.514 | - | - | - | - |
| Age | - | - | - | - | 1.033 | 1.009-1.058 | 0.007 | 0.201 | - | - | - | - |
| Days from visit until the start of the study | - | - | - | - | 1.009 | 1-1.019 | 0.054 | 0.229 | - | - | - | - |
| GLOBAL MODEL | NA | NA | NA | 0.844 | NA | NA | NA | 0.403 | NA | NA | NA | 0.843 |
| EBCW | | | | | | | | | | | | |
| Colchicine Prescription | 3.11 | 0.956-10.118 | 0.059 | 0.844 | 2.558 | 0.974-6.722 | 0.057 | 0.842 | 3.102 | 0.959-10.035 | 0.059 | 0.843 |
| Hand Osteoarthritis | - | - | - | - | 0.154 | 0.04-0.586 | 0.006 | 0.958 | - | - | - | - |
| Gout | - | - | - | - | 0.628 | 0.233-1.692 | 0.357 | 0.116 | - | - | - | - |
| Women | - | - | - | - | 0.554 | 0.265-1.161 | 0.118 | 0.514 | - | - | - | - |
| Age | - | - | - | - | 1.033 | 1.009-1.058 | 0.007 | 0.201 | - | - | - | - |
| Days from visit until the start of the study | - | - | - | - | 1.009 | 1-1.019 | 0.054 | 0.229 | - | - | - | - |
| GLOBAL MODEL | NA | NA | NA | 0.844 | NA | NA | NA | 0.403 | NA | NA | NA | 0.843 |

| | | | | | | | | | | | | |
|---|-------|-------------|-------|-------|-------|-------------|-------|-------|-------|--------------|-------|-------|
| OBW | | | | | | | | | | | | |
| Colchicine Prescription | 3.296 | 1.06-10.247 | 0.039 | 0.848 | 2.677 | 0.961-7.463 | 0.06 | 0.832 | 3.294 | 1.061-10.222 | 0.039 | 0.848 |
| Women | - | - | - | - | 0.718 | 0.49-1.052 | 0.089 | 0.499 | - | - | - | - |
| Days from visit until the start of the study | - | - | - | - | 1.002 | 0.998-1.007 | 0.244 | 0.23 | - | - | - | - |
| Other inflammatory diseases | - | - | - | - | 1.679 | 1.152-2.448 | 0.007 | 0.342 | - | - | - | - |
| GLOBAL MODEL | NA | NA | NA | 0.848 | NA | NA | NA | 0.614 | NA | NA | NA | 0.848 |

Adj: Adjusted; DMARDs: Disease modifying antirheumatic drugs; EBAL: Entropy balancing; EBCW: Empirical balancing calibration weighting; CBPS: Covariate balancing method; GBM: Generalized boosted models; CI: Confidence interval; GLM: Generalized linear models; HR: Hazard ratio; MLPS: machine learning-based PS methods; NPCBPS: Non-parametric covariate balancing method; NSAIDs: Non-steroidal antiinflammatory drugs; OBW: Optimization-based weighting; Stab: Stabilized; Trim: Trimmed; Unadj: Unadjusted. * Schoenfeld test p value

Supplementary Table 8.4: Mean differences for the covariates included in the analysis of the influence of colchicine prescription in COVID-19 related mortality before and after using propensity score-based methods (in orange, unbalanced covariates)

| Covariates | GLM | | | | GBM | | | NPCBPS | | | MLPS | | |
|--|--------|--------|--------|--------|-----------|--------|-----------|--------|--------|--------|--------|--------|--------|
| | Unadj | Adj | Trim | Stab | Adj | Trim | Stab | Adj | Trim | Stab | Adj | Trim | Stab |
| Women | -0.242 | -0.242 | -0.242 | -0.242 | -0.298 | -0.227 | -0.298 | -0.239 | -0.261 | -0.239 | -0.243 | -0.243 | -0.243 |
| Age | 0.388 | 0.388 | 0.388 | 0.388 | -4.49E-04 | 0.184 | -4.49E-04 | 0.173 | 0.158 | 0.173 | 0.385 | 0.388 | 0.385 |
| Rheumatoid Arthritis | -0.100 | -0.100 | -0.100 | -0.100 | 0.135 | -0.007 | 0.135 | -0.158 | -0.164 | -0.158 | -0.097 | -0.099 | -0.097 |
| Knee Osteoarthritis | 0.058 | 0.058 | 0.058 | 0.058 | 0.075 | 0.112 | 0.075 | 0.003 | -0.001 | 0.003 | 0.058 | 0.059 | 0.058 |
| Osteoarthritis | 0.167 | 0.167 | 0.167 | 0.167 | 0.184 | 0.240 | 0.184 | 0.059 | 0.055 | 0.059 | 0.166 | 0.166 | 0.166 |
| Tendinitis (Lower Extremities) | 0.042 | 0.042 | 0.042 | 0.042 | -0.004 | 0.004 | -0.004 | 0.057 | 0.056 | 0.057 | 0.041 | 0.041 | 0.041 |
| Osteoporosis | 0.042 | 0.042 | 0.042 | 0.042 | -0.003 | 0.005 | -0.003 | 0.062 | 0.061 | 0.062 | 0.041 | 0.041 | 0.041 |
| Monoarthritis | 0.250 | 0.250 | 0.250 | 0.250 | 0.111 | 0.134 | 0.111 | 0.231 | 0.231 | 0.231 | 0.248 | 0.249 | 0.248 |
| Gout | 0.633 | 0.633 | 0.633 | 0.633 | 0.255 | 0.319 | 0.255 | 0.771 | 0.802 | 0.771 | 0.631 | 0.632 | 0.631 |
| DMARDs | -0.025 | -0.025 | -0.025 | -0.025 | -0.069 | -0.062 | -0.069 | 0.035 | 0.032 | 0.035 | -0.025 | -0.025 | -0.025 |
| SYSADOA | 0.083 | 0.083 | 0.083 | 0.083 | 0.142 | 0.171 | 0.142 | 0.072 | 0.072 | 0.072 | 0.083 | 0.083 | 0.083 |
| Hypertension | 0.242 | 0.242 | 0.242 | 0.242 | 0.347 | 0.285 | 0.347 | 0.202 | 0.223 | 0.202 | 0.243 | 0.242 | 0.243 |
| Dyslipidemia | 0.133 | 0.133 | 0.133 | 0.133 | 0.064 | 0.118 | 0.064 | 0.331 | 0.323 | 0.331 | 0.131 | 0.132 | 0.131 |
| Lung disease | 0.017 | 0.017 | 0.017 | 0.017 | -0.024 | 0.002 | -0.024 | -0.055 | -0.060 | -0.055 | 0.016 | 0.016 | 0.016 |
| Diabetes Mellitus | -0.075 | -0.075 | -0.075 | -0.075 | -0.020 | 0.010 | -0.020 | -0.150 | -0.156 | -0.150 | -0.074 | -0.074 | -0.074 |
| Vascular disease | 0.025 | 0.025 | 0.025 | 0.025 | -0.020 | -0.013 | -0.020 | 0.019 | 0.018 | 0.019 | 0.024 | 0.025 | 0.024 |
| Cancer | -0.117 | -0.117 | -0.117 | -0.117 | -0.130 | -0.130 | -0.130 | -0.095 | -0.099 | -0.095 | -0.117 | -0.117 | -0.117 |
| Thyroid disease | 0.017 | 0.017 | 0.017 | 0.017 | -0.028 | -0.020 | -0.028 | 0.051 | 0.048 | 0.051 | 0.016 | 0.016 | 0.016 |
| Cardiovascular disease | 0.325 | 0.325 | 0.325 | 0.325 | 0.198 | 0.258 | 0.198 | 0.233 | 0.229 | 0.233 | 0.324 | 0.325 | 0.324 |
| Obesity | 0.025 | 0.025 | 0.025 | 0.025 | -0.025 | -0.018 | -0.025 | 0.014 | 0.013 | 0.014 | 0.025 | 0.025 | 0.025 |
| Gastroesophageal reflux disease | 0.133 | 0.133 | 0.133 | 0.133 | 0.097 | 0.126 | 0.097 | 0.268 | 0.266 | 0.268 | 0.133 | 0.133 | 0.133 |
| Days from inclusion visit until the start of the study | 0.047 | 0.047 | 0.047 | 0.047 | -0.082 | 0.035 | -0.082 | 0.410 | 0.373 | 0.410 | 0.044 | 0.045 | 0.044 |
| Number of unbalanced covariates | 14 | 14 | 14 | 14 | 14 | 13 | 14 | 18 | 17 | 18 | 14 | 14 | 14 |

Adj: Adjusted; DMARDs: Disease modifying antirheumatic drugs; GBM: Generalized boosted models; GLM: Generalized linear models; MLPS: machine learning-based PS methods; NPCBPS: Non-parametric covariate balancing method; Stab: Stabilized; SYSADOA: Symptomatic Slow Acting Drug for OsteoArthritis; Trim: Trimmed; Unadj: Unadjusted