Chronic anticoagulant and antiplatelet use not associated with decreased disease severity in SARS-CoV-2 infection

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| Challenge | **SARS-CoV-2 associated coagulopathy can lead to higher morbidity and mortality. It is unclear if anticoagulants or antiplatelets given in patients prior to their SARS-CoV-2 infection would influence disease severity and hospital use.** |
| Existing Evidence | Due to the SARS-CoV-2 pandemic, there has been increased interest in the empiric use of anticoagulants and antiplatelets. However , there is little data on whether patients chronically on these agents for preexisting conditions have better outcome. The data that is present is primarily in a small population of patients in single centers. |
| Target Population | Adult patients over age 18 years old with positive SARS-CoV-2 test |
| Intervention or Exposure | Patients on chronic antiplatelet and anticoagulants prior to SARS-CoV-2 positivity |
| **Outcomes/Key Findings** | **There was no association with improved outcomes of hospitalization, mortality or mechanical ventilation in patients on chronic anticoagulants or antiplatelets prior to SARS-CoV-2 infection.** Of 28,076 patients with confirmed SARS-CoV-2 infection, about 720 were on antiplatelets, 255 on anticoagulants and 49 were on both. After adjusting for sociodemographic and clinical characteristics, chronic anticoagulant or antiplatelet use was not associated with a lower risk of any primary outcome, including venous thromboembolism, emergency room visit, intensive care unit stay, invasive ventilator use or mortality. |
| **Resulting Action/Change** | **This adds data to avoiding broad empiric use of anticoagulants or antiplatelets in SARS-CoV-2 infected patients until prospective studies are done.** |
| Additional Recommendations | n/a |
| Implementation Tools | n/a |
| Implementation Measurement | n/a |
| Reference | Please see next page |

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|  | IP  N=2,863 | Invasive ventilator  N=516 | Death  N=396 | Venous thromboembolism1  N=206 | ED  N=7,724 | ICU  N=797 | Any outcome2  N=7,913 | Any severe outcome3  N=2,953 |
| Medication |  |  |  |  |  |  |  |  |
| Anticoagulants with or without antiplatelets (N=304) | 1.02  (0.77-1.35) | 0.74  (0.44-1.25) | 0.95  (0.62-1.46) | 1.12  (0.49-2.55) | 1.06  (0.82-1.37) | 0.98  (0.65-1.47) | 1.21  (0.93-1.56) | 1.01  (0.76-1.34) |
| Antiplatelets (N=720) | 0.97  (0.80-1.18) | 0.71  (0.50-1.02) | 0.89  (0.64-1.24) | 0.84  (0.46-1.52) | 0.90  (0.76-1.07) | 0.83  (0.62-1.12) | 0.96  (0.81-1.14) | 0.93  (0.76-1.13) |
| None (N=27,052) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) |
| Age |  |  |  |  |  |  |  |  |
| 18-29 | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.)4 | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) |
| 30-39 | 1.72  (1.42-2.08) | 1.78  (0.95-3.35) | 1.87  (0.83-4.22) | 1.20  (1.10-1.32) | 1.81  (1.17-2.81) | 1.19  (1.09-1.29) | 1.68  (1.39-2.03) |
| 40-49 | 2.67  (2.22-3.20) | 3.94  (2.23-6.97) | 4.13  (1.98-8.61) | 1.65  (1.51-1.80) | 3.58  (2.39-5.36) | 1.61  (1.47-1.76) | 2.62  (2.19-3.13) |
| 50-59 | 3.80  (3.17-4.55) | 8.13  (4.69-14.06) | 5.34  (3.23-8.83) | 6.16  (2.99-12.71) | 1.81  (1.65-1.99) | 5.65  (3.81-8.39) | 1.74  (1.59-1.91) | 3.70  (3.1-4.42) |
| 60-69 | 5.91  (4.89-7.14) | 13.10  (7.52-22.82) | 11.15  (6.86-18.12) | 7.08  (3.34-15.02) | 2.31  (2.07-2.58) | 8.36  (5.59-12.52) | 2.23  (2.00-2.48) | 5.69  (4.72-6.86) |
| 70-79 | 11.41  (9.14-14.25) | 21.22  (11.79-38.17) | 26.84  (16.19-44.49) | 11.26  (5.01-25.32) | 3.46  (2.96-4.05) | 14.01  (9.07-21.63) | 3.47  (2.97-4.06) | 11.41  (9.16-14.20) |
| 80+ | 16.50  (12.8-21.28) | 15.29  (8.02-29.14) | 85.96  (51.45-143.62) | 8.79  (3.51-21.99) | 4.51  (3.71-5.47) | 11.41  (7.04-18.49) | 5.28  (4.33-6.43) | 21.07  (16.40-27.07) |
| Sex |  |  |  |  |  |  |  |  |
| Male | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) |
| Female | 0.64  (0.59-0.7) | 0.43  (0.35-0.52) | 0.52  (0.41-0.65) | 0.44  (0.33-0.60) | 0.92  (0.87-0.97) | 0.46  (0.39-0.54) | 0.94  (0.88-0.99) | 0.64  (0.59-0.70) |
| Race/ethnicity |  |  |  |  |  |  |  |  |
| African American | 1.59  (1.33-1.90) | 1.67  (1.17-2.37) | 0.97  (0.66-1.43) | 1.85  (1.12-3.06) | 2.22  (1.97-2.49) | 1.65  (1.23-2.23) | 2.18  (1.94-2.45) | 1.53  (1.28-1.83) |
| Asian | 1.77  (1.51-2.08) | 1.78  (1.29-2.46) | 0.91  (0.63-1.33) | 1.14  (0.68-1.90) | 1.31  (1.18-1.47) | 1.82  (1.39-2.39) | 1.30  (1.17-1.45) | 1.68  (1.44-1.96) |
| Hispanic | 1.54  (1.36-1.74) | 1.53  (1.18-1.97) | 1.02  (0.77-1.34) | 1.41  (0.97-2.06) | 1.53  (1.42-1.66) | 1.73  (1.40-2.14) | 1.50  (1.38-1.62) | 1.46  (1.29-1.64) |
| White | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) |
| Missing/other | 1.13  (0.94-1.36) | 1.22  (0.82-1.81) | 1.10  (0.73-1.68) | 0.62  (0.31-1.28) | 0.73  (0.65-0.83) | 1.35  (0.97-1.86) | 0.72  (0.64-0.81) | 1.09  (0.91-1.32) |
| Body mass index5 |  |  |  |  |  |  |  |  |
| Underweight | 1.64  (1.06-2.54) | 0.54  (0.16-1.82) | 1.48  (0.81-2.74) | 0.97  (0.22-4.17) | 1.66  (1.20-2.31) | 1.49  (0.73-3.07) | 1.74  (1.25-2.42) | 1.83  (1.20-2.80) |
| Healthy weight | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) |
| Overweight | 1.15  (0.99-1.33) | 1.06  (0.79-1.42) | 0.73  (0.54-1.00) | 0.74  (0.48-1.14) | 1.13  (1.03-1.24) | 1.18  (0.92-1.50) | 1.15  (1.05-1.26) | 1.11  (0.96-1.28) |
| Obese | 1.85  (1.61-2.12) | 1.71  (1.29-2.27) | 1.24  (0.92-1.67) | 1.10  (0.73-1.65) | 1.38  (1.26-1.50) | 1.70  (1.34-2.15) | 1.41  (1.29-1.54) | 1.79  (1.56-2.06) |
| Charlson comorbidity index |  |  |  |  |  |  |  |  |
| 0 | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) |
| 1-2 | 1.12  (1.00-1.26) | 1.03  (0.80-1.33) | 1.50  (1.06-2.11) | 0.91  (0.62-1.33) | 1.25  (1.16-1.35) | 1.04  (0.84-1.28) | 1.25  (1.15-1.35) | 1.13  (1.00-1.27) |
| ≥3 | 1.29  (1.09-1.53) | 1.12  (0.80-1.56) | 2.39  (1.63-3.51) | 0.75  (0.44-1.29) | 1.43  (1.25-1.64) | 1.18  (0.90-1.56) | 1.47  (1.28-1.68) | 1.38  (1.16-1.63) |
| Hypertension |  |  |  |  |  |  |  |  |
| Yes | 2.88  (2.53-3.26) | 2.53  (2.00-3.20) | 1.98  (1.54-2.56) | 2.24  (1.53-3.28) | 1.99  (1.78-2.23) | 2.40  (1.97-2.92) | 1.95  (1.74-2.18) | 2.72  (2.40-3.09) |
| No | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) |
| Diabetes |  |  |  |  |  |  |  |  |
| Yes | 1.87  (1.63-2.14) | 1.72  (1.33-2.22) | 1.19  (0.91-1.57) | 1.61  (1.07-2.43) | 1.41  (1.26-1.58) | 2.21  (1.79-2.73) | 1.43  (1.28-1.60) | 1.86  (1.63-2.13) |
| No | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) |
| Smoking status5 |  |  |  |  |  |  |  |  |
| Ever | 1.00  (0.91-1.11) | 1.07  (0.87-1.32) | 1.15  (0.91-1.46) | 1.07  (0.78-1.47) | 1.08  (1.01-1.16) | 1.08  (0.91-1.28) | 1.08  (1.01-1.15) | 1.01  (0.91-1.11) |
| Never | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) | 1.00 (ref.) |