Prothrombin Time Behavior Across Coronavirus Disease 2019 Severity with Emphasis on Mild Disease

Comportamento do Tempo de Protrombina ao Longo da Gravidade da Doença por Coronavírus 2019 Leve
Comportamiento del Tiempo de Protrombina Según la Gravedad de la Enfermedad por Coronavirus 2019 Leve

RESUMO
Objetivo: Sintetizar evidências sobre o comportamento do tempo de protrombina (TP) em adultos com COVID-19 leve e suas implicações hemostáticas. **Métodos:** Revisão integrativa segundo Whittemore e Knafl, com relato orientado pelo PRISMA, incluindo estudos observacionais (2020–2025) no PubMed/MEDLINE que avaliaram o TP na COVID-19 leve. **Resultados:** 14 estudos foram incluídos; na maioria, o TP permaneceu dentro da normalidade. As variações foram discretas, inconsistentes e sem relevância clínica ou prognóstica independente, associando-se mais à gravidade da doença. **Conclusão:** A COVID-19 leve não se associa tipicamente a alterações clinicamente relevantes do TP; as mudanças observadas são sutis e subclínicas, não sustentando decisões clínicas baseadas apenas no TP.
DESCRITORES: COVID-19; Tempo de protrombina; Coagulação; Hemostasia; Endotélio vascular.

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DESCRIPTORES: COVID-19; Prothrombin Time; Coagulation; Hemostasis; Vascular Endothelium.

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INTRODUCTION

COVID-19 is characterized by systemic inflammation, endothelial dysfunction, and hemostatic imbalance, contributing to disease severity and adverse outcomes[1–6]. In severe cases, immune-mediated endothelial injury, platelet activation, and coagulation dysregulation drive a prothrombotic state with frequent thrombotic complications and hemostatic abnormalities[7–13].

In contrast, the hemostatic profile of mild COVID-19 remains less defined. Although typically self-limited, without pneumonia, hypoxia, or oxygen desaturation[14–16], mild disease may still involve low-grade inflammation[17], raising questions about subtle coagulation changes. Prothrombin time (PT), a key assay of the extrinsic pathway, may reflect early coagulation activation or factor consumption; however, available evidence indicates largely preserved values with minor or inconsistent variations[18]. Clarifying PT behavior in mild COVID-19 is relevant for laboratory interpretation and clinical decision-making in outpatient settings.

This integrative review synthesizes current evidence on PT alterations in adults with mild COVID-19, highlighting gaps in non-severe disease and clinical and laboratory implications. This study was conducted as part of a postgraduate research project in clinical pathology and laboratory medicine that aimed to critically evaluate hemostatic biomarkers in non-severe COVID-19. The integrative review was designed to address a knowledge gap identified during this academic investigation, particularly regarding the clinical interpretation of prothrombin time in mild outpatient cases, and to support evidence-based laboratory decision-making.

METHODS

This integrative literature review followed the framework proposed by Whittemore and Knafl[19], encompassing problem identification, literature search, data evaluation, analysis, and synthesis, with reporting guided by relevant PRISMA 2020 items[20] to enhance transparency. The research question was: What evidence exists on prothrombin time (PT) alterations in adults with mild COVID-19?

A structured search was conducted in PubMed/MEDLINE (September–November 2025) for studies published between January 2020 and November 2025, using the terms (COVID-19 OR SARS-CoV-2) AND coagulation AND "prothrombin time" NOT (review OR animal), limited to English-language human studies. Eligible studies were original observational research in adults (≥18 years) with mild COVID-19 reporting PT in seconds, percentage activity, or International Normalized Ratio (INR). Studies focusing on moderate–critical disease, pediatric or pregnant populations, animal models, reviews, editorials, case reports, or lacking PT data were excluded.

Study selection followed PRISMA guidance: 42 records were identified, 19 underwent full-text assessment, and 14 were included. Data were extracted using a standardized form capturing study characteristics and PT findings. No formal risk-of-bias assessment was performed, consistent with integrative review methodology; instead, methodological characteristics, consistency of findings, and biological plausibility were critically appraised during qualitative analysis, synthesized narratively and supported by descriptive tables and figures.

As this study is an integrative literature review using publicly available data, approval by a Research Ethics Committee was not required.

RESULTS

Study characteristics

Fourteen observational studies published between 2020 and 2023 were included; no eligible studies

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published in 2024–2025 met the inclusion criteria (Figure 1). Study characteristics are summarized in Table 1, with detailed methodological and laboratory data in Supplementary Tables S1–S2.

Table 1. Main characteristics of included studies. Detailed data are in Supplementary Tables S1–S2.

Author (year)	Country	Study design	Population severity
Bao et al. (2020)	China	Prospective observational	Hospitalized
Chen et al. (2020)	China	Retrospective observational	Mixed severity
Chen et al. (2023)	China	Retrospective observational	Hospitalized (Delta variant)
Esmaeel et al. (2022)	Egypt	Prospective observational	Hospitalized
Karabulut & Sahin (2023)	Türkiye	Prospective case–control	Mild–moderate
Li et al. (2020)	China	Cross-sectional	Non-severe
Liu et al. (2021)	China	Retrospective observational	Mixed severity
Moya-Salazar et al. (2023)	Peru	Cross-sectional	Mixed severity
Saurabh et al. (2021)	India	Retrospective observational	Mixed severity
Srivastava et al. (2022)	India	Retrospective observational	Mixed severity
Tekle et al. (2022)	Ethiopia	Retrospective observational	Mixed severity
Yoo et al. (2022)	South Korea	Retrospective observational	Hospitalized
Yessenbayeva et al. (2023)	Kazakhstan	Retrospective observational	Hospitalized
Zou et al. (2020)	China	Retrospective observational	Mixed severity

Source: Elaborated by the authors.

The studies were conducted in Asia (China, South Korea, Kazakhstan), Africa (Egypt, Ethiopia), Europe (Türkiye), South America (Peru) and South Asia (India) (**Figure 2**). Retrospective observational designs predominated[21–28], followed by prospective cohorts[29–31], cross-sectional analyses[32,33], and one prospective case–control study[18]. Most studies were hospital-based and included mixed severity populations, few incorporated non-severe or outpatient cases. No study was primarily designed to evaluate PT alterations in mild COVID-19, and severity definitions varied across studies.

Prothrombin time findings

PT prolongation was primarily associated with disease severity and adverse outcomes, particularly in moderate to severe cohorts[21–27]. In mild or non-severe populations, PT values were generally preserved or only minimally altered [32,19,33]. Methodological heterogeneity, including differences in severity definitions, sampling timing, and PT reporting formats, as well as the inclusion of PT within broader coagulation profiles limits direct comparisons and the assessment of PT behavior in mild disease[22,23,29,30]. This integrative synthesis is schematically summarized in **Figure 3.**

DISCUSSION

This integrative review indicates that clinically relevant prothrombin time (PT) alterations are uncommon in adults with mild COVID-19, with most studies reporting values within reference ranges or only minimal, non-significant prolongation[19,32,33]. Although SARS-CoV-2 infection can induce systemic inflammation and endothelial responses, the extrinsic coagulation pathway appears preserved in non-severe disease, suggesting that PT abnormalities reflect advanced systemic involvement rather than early hemostatic activation.

A severity-dependent pattern emerged, with PT prolongation observed in moderate to severe COVID-19, intensive care unit admission, or adverse outcomes[21,24–27]. This association is likely mediated by extensive inflammation, endothelial injury, and global coagulation derangement[29,30,22], rather than isolated PT changes.

Interpretation of these findings is limited by methodological heterogeneity across studies, including variability in severity definitions, sample timing, PT reporting formats, and the predominance of retrospective hospital-based cohorts[21,24,25,32,33]. Geographic differences in healthcare settings and pandemic phases may further restrict the generalizability of current evidence to outpatient or early-stage mild cases.

Preserved PT in mild disease suggests that any hemostatic activation is subtle, transient, and compensated, remaining below the sensitivity of routine assays[19,32,33]. Accordingly, PT alterations should be interpreted within the broader clinical and inflammatory context. Future prospec-

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tive longitudinal studies focusing on mild and outpatient populations are needed to clarify early PT dynamics and temporal trajectories.

CONCLUSION

Mild COVID-19 does not cause clinically relevant PT abnormalities, with values typically within reference ranges and only subtle, non-significant variations, reflecting compensated hemostasis rather than extrinsic pathway dysfunction. This supports a severity-dependent model in which coagulation changes scale with inflammation, endothelial injury, and disease severity, limiting PT's clinical value in mild disease and underscoring the need for prospective studies to clarify early PT dynamics and prognostic relevance. Until such evidence is available, PT changes in mild COVID-19 should be interpreted cautiously within the broader clinical and inflammatory context.

REFERÊNCIAS

1 - Organização Mundial da Saúde. Relatórios de situação da doença por coronavírus (COVID-19) [Internet]. Genebra: Organização Mundial da Saúde; 2020. Disponível em: https://www.who.int/publications/m/item/situation-report---1

2 - Ministério da Saúde (BR). COVID-19 [Internet]. Brasília: Ministério da Saúde; 2025. Disponível em: https://www.gov.br/saude/pt-br/assuntos/saude-de-a-a-z/c/covid-19

3 - Tang D, Comish P, Kang R. As características da doença COVID-19. PLoS Pathog. 2020;16(5):e1008536

4 - Parker A, Louw EH, Lalla U, Koegelenberg CFN, Allwood BW, Rabie H, Sibeko SI, Taljaard JJ, et al. Síndrome inflamatória multissistêmica em pacientes adultos com COVID-19. S Afr Med J. 2020;110(10):957-958

5 - Henry BM, Vikse J, Benoit S, Favaloro EJ, Lippi G. Hiperinflamação e desregulação do sistema renina-angiotensina-aldosterona na COVID-19: uma nova hipótese para a hipercoagulopatia clinicamente suspeita e a imunotrombose microvascular. Clin Chim Acta. 2020; 507:167-173

6 – Shaigany S, Gnirke M, Guttmann A, Chong H, Meehan S, Raabe V, Louie E, Solitar B, et al. Um adulto com síndrome inflamatória multissistêmica semelhante à doença de Kawasaki associada à COVID-19. Lancet. 2020;396(10246):e8.

7 - Han H, Yang L, Liu R, Liu F, Wu KL, Li J, Liu XH, Zhu CL. Alterações proeminentes na coagulação sanguínea de pacientes com infecção por SARS-CoV-2. Clin Chem Lab Med. 2020;58(7):1116–1120

8 - Tang N, Li D, Wang X, Sun Z. Parâmetros de coagulação anormais estão associados a mau prognóstico em pacientes com pneumonia por novo coronavírus. J Thromb Haemost. 2020;18(4):844–847

9 - Lodigiani C, Iapichino G, Carenzo L, Cecconi M, Ferrazzi P, Sebastian T, Kucher N, Studt JD, et al. Complicações tromboembólicas venosas e arteriais em pacientes com COVID-19 internados em um hospital universitário em Milão, Itália. Thromb Res. 2020;191:9–14

10 - Low RN, Low RJ, Akrami A. Uma revisão da fisiopatologia baseada em citocinas dos sintomas da COVID longa. Front Med. 2023;10:1011936

11 - Chen T, Wu D, Chen H, Yan W, Yang D, Chen G, Ma K, Xu D, et al. Características clínicas de 113 pacientes falecidos com doença coronavírus 2019: estudo retrospectivo. BMJ. 2020;368:m1091

12 - Ranucci M, Ballotta A, Di Dedda U, Baryshnikova E, Dei Poli M, Resta M, Falco M, Albano G, et al. O padrão pró-coagulante de pacientes com síndrome de dificuldade respiratória aguda por COVID-19. J Thromb Haemost. 2020;18(7):1747–1751

13 - Bulanov AY, Andreev DA, Ivashkin VT, Maev IV, Zhuravlev DV, Mikhaylov EN, Kuznetsova AV, Malkov VA, et al. Análises integrais da hemostasia em pacientes hospitalizados com COVID-19 na admissão e durante a tromboprofilaxia com heparina. PLoS One. 2023;18(6):e0282939

14 - Kalal CR, Joshi H, Kumar V, Gopal D, Rathod D, Shukla A, Gianchandani T, Bhatt C. Significado clínico da anormalidade da função hepática em pacientes com COVID-19: uma experiência de um único centro no oeste da Índia. J Clin Transl Hepatol. 2021;9(6):878-888

15 - Ministério da Saúde (BR). Covid-19: casos e óbitos [Internet]. 2025 [consultado em 15 de setembro de 2025]. Disponível em: https://infoms.saude.gov.br/extensions/covid-19_html/covid-19_html.html

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16 - Wynberg E, van Willigen HDG, Dijkstra M, Boyd A, Kootstra NA, van den Aardweg JG, van Gils MJ, Matser A, et al. Evolução dos sintomas da doença coronavírus 2019 (COVID-19) durante os primeiros 12 meses após o início da doença. Clin Infect Dis. 2022;75(1): e482-e490

17 - Maamar M, Artime A, Pariente E, Fierro P, Ruiz Y, Gutiérrez S, Tobalina M, Díaz-Salazar S, et al. Síndrome pós-COVID-19, inflamação de baixo grau e marcadores inflamatórios: um estudo transversal. Curr Med Res Opin. 2022;38(6):901-909

18 - Karabulut A, Sahin S. Marcadores inflamatórios e níveis de neopterina em relação à COVID-19 leve. Eur Rev Med Pharmacol Sci. 2023; 27:8952–8961

19 – Whittemore R, Knafl K. A revisão integrativa: metodologia atualizada. J Adv Nurs. 2005;52(5):546–53

20 - Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, Shamseer L, Tetzlaff JM, et al. A declaração PRISMA 2020: uma diretriz atualizada para a divulgação de revisões sistemáticas. BMJ. 2021;372:n71

21 - Chen X, Wang Q, Xu M, Li C. Uma análise retrospectiva da disfunção coagulativa em pacientes com COVID-19. Clin Appl Thromb Hemost. 2020; 26:1076029620964868

22 - Zou Y, Guo H, Zhang Y, Zhang Z, Liu Y, Wang J, Lu H, Qian Z. Análise dos parâmetros de coagulação em pacientes com COVID-19 em Xangai, China. Biosci Trends. 2020;14(4):285–289

23 - Liu Y, Liao W, Wan L, Xiang T, Zhang W. Correlação entre a carga relativa de RNA viral nasofaríngeo e a contagem de linfócitos com a gravidade da doença em pacientes com COVID-19. Viral Immunol. 2020;33(5):330–335

24 - Saurabh A, Dey B, Raphael V, Deb P, Khonglah Y, Tiewsoh I. Papel do perfil de coagulação na previsão da gravidade da doença entre pacientes com COVID-19. Cureus. 2021;13: e19124

25 - Yoo EH, Chang SH, Song DY, Lee CH, Cheong GY, Park S, Lee JH, Lee S, et al. Análise abrangente de dados laboratoriais para prever a gravidade clínica da doença coronavírus 2019 em 1.952 pacientes em Daegu, Coreia. Ann Lab Med. 2022;42(1):24-35

26 - Srivastava S, Garg I, Bansal A, Kumar A, Gupta R, Singla R, Gupta N. Implicações da COVID-19 no perfil trombótico de pacientes gravemente afetados. Pathobiology. 2022; 89:407-417

27 - Chen YE, Ren FL, Gu X, Zhang HJ, Li WJ, Yang H, Shang FQ. Valor clínico das plaquetas e dos parâmetros de coagulação na previsão da gravidade da variante Delta do SARS-CoV-2. Pathobiology. 2023;90(4):241–250

28 - Yessenbayeva A, Kudaibergen G, Kenzhebekova Z, Zhunussova T, Kulmanov M, Alimzhanova A, Kassenova S, Abilova A, et al. Biomarcadores de imunotrombose e polimorfismos dos genes IL2, IL6 e IL10 como preditores da gravidade da COVID-19 em uma população do Cazaquistão. PLoS One. 2023;18: e0288139

29 - Bao C, Tao X, Cui W, Yi B, Pan T, Young KH, Qian W. A trombocitopenia induzida pelo SARS-CoV-2 como um importante biomarcador significativamente correlacionado com função de coagulação anormal, aumento do risco de coágulos sanguíneos intravasculares e mortalidade em pacientes com COVID-19. Exp Hematol Oncol. 2020;9:16

30 - Esmaeel HM, Ahmed HA, Elbadry MI, Khalaf AR, Mohammed NA, Mahmoud HA, Taha EM. Anomalias nos parâmetros de coagulação e sua relação com os resultados clínicos em pacientes hospitalizados com COVID-19 grave: estudo prospectivo. Sci Rep. 2022;12:13155

31 - Tekle E, Gelaw Y, Dagnew M, Gelaw A, Negash M, Kassa EK, Bizuneh S, Wudineh D, et al. Estratificação de risco e valor prognóstico do tempo de protrombina e do tempo de tromboplastina parcial ativada em pacientes com COVID-19. PLoS One. 2022;17(8):e0272216

32 - Li T, Wang L, Wang H, Gao Y, Hu X, Li X, Zhang S, Xu Y, et al. Características dos índices laboratoriais em pacientes com COVID-19 com sintomas não graves na cidade de Hefei, província de , China: valor diagnóstico em lesões orgânicas. Eur J Clin Microbiol Infect Dis. 2020;39(12):2447–2455

33 - Moya-Salazar J, Cóndor LY, Zuñiga N, Jaime-Quispe A, Moya-Salazar B, Chicoma-Flores K, Cañari B, Contreras-Pulache H. As alterações nos marcadores de coagulação não apresentaram diferenças em relação à gravidade da COVID-19 em pacientes peruanos: um estudo transversal unicêntrico. Health Sci Rep. 2023;6(3):e1105

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Supplementary Table S1 - Study characteristics

DOI	Authors	Year of Publication	Article Title	Journal Name	Country of Study	Study Design	Study Objective
10.1177/10760296209 64868	Chen et al., (2020)	2020	A Retrospective Analysis of the Coagulation Dysfunction in COVID-19 Patients	Clinical and Applied Thrombosis/ Hemostasis	China	Retrospective observational study	To analyze and compare coagulation function between patients with mild and severe COVID-19, seeking coagulation parameters that distinguish severity.
10.1371/journal.pone.0272216	Tekle et al., (2022)	2022	Risk stratification and prognostic value of prothrombin time and activated partial thromboplastin time among COVID-19 patients	PLoS One	Ethiopia	Follow-up observational cohort study	To assess the prognostic and risk stratification value of basic coagulation parameters (PT and APTT) and factors associated with disease severity among COVID-19 patients
10.1038/s41598-022-16915-8	Esmaeel et al., (2022)	2022	Coagulation parameters abnormalities and their relation to clinical outcomes in hospitalized and severe COVID-19 patients: prospective study	Scientific Reports - Nature	Egypt	Prospective observational study	To evaluate the role of coagulation parameters (PC, aPTT, D-dimer, AT-III, fibrinogen) and their relationship with clinical severity and evolution in COVID-19 patients.
10.7759/cureus.19124	Saurabh et al., (2021)	2021	Role of Coagulation Profile in Predicting Disease Severity Among Patients of COVID-19	Cureus	India	Retrospective observational study	To analyze the association of coagulation parameters (D-dimer, fibrinogen, prothrombin time [PT], and activated partial thromboplastin time [aPTT]) with disease severity in COVID-19 patients and to determine predictive cut-off values.
10.1159/000522543	Srivastava et al., (2022)	2022	Implications of COVID-19 on Thrombotic Profile of Severely Affected Patients	Pathobiology	India	Retrospective observational study	To evaluate alterations in thrombotic and anticoagulant parameters in COVID-19 patients and correlate them with disease severity and mortalit
10.26355/eurrev_202309_33816	Karabulut; Sahin (2023)	2023	Inflammatory markers and neopterin levels in relation to mild COVID-19	European Review for Medical and Pharmacological Sciences	Turkiye	Prospective case-control study	To evaluate neopterin levels together with inflammatory, coagulation, and biochemical parameters in patients with mild/moderate COVID-19 compared to healthy controls
10.1371/journal.pone.0288139	Yessenbayeva et al., (2023)	2023	Biomarkers of immunothrombosis and polymorphisms of IL2, IL6, and IL10 genes as predictors of the severity of COVID-19 in a Kazakh population	PLoS One	Kazakhstan	Retrospective case-control study	To evaluate biomarkers of immunothrombosis and cytokine gene polymorphisms (IL2, IL6, IL10) and their association with COVID-19 severity.

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10.1002/hsr2.1105	Moya-Salazar et al., (2023)	2023	Alterations in the coagulation markers did not show differences with the severity of COVID-19 in Peruvian patients: A cross-sectional single-center study	Health Science Reports	Peru	Cross-sectional observational study	To assess coagulation markers (PT, aPTT, fibrinogen, D-dimer, platelets) according to COVID-19 severity in Peruvian adults and explore their association with oxygen function and lung involvement.
10.1159/000528318	Chen et al., (2023)	2023	Clinical Value of Platelets and Coagulation Parameters in Predicting the Severity of Delta Variant SARS-CoV-2	Pathobiology	China	Retrospective observational study	To analyze clinical characteristics, platelet indices, and coagulation parameters in patients infected with the Delta variant of SARS-CoV-2 and to evaluate their value in predicting disease severity.
10.1186/s40164-020-00172-4	Bao et al., (2020)	2020	SARS-CoV-2 induced thrombocytopenia as an important biomarker significantly correlated with abnormal coagulation function, increased intravascular blood clot risk and mortality in COVID-19 patients	Experimental Hematology & Oncology	China	Prospective observational cohort study	To investigate thrombocytopenia and coagulation abnormalities in COVID-19 patients and evaluate their association with disease severity, disseminated intravascular coagulation (DIC), and mortality.
10.1007/s10096-020-03967-9	Li et al., (2020)	2020	Characteristics of laboratory indexes in COVID-19 patients with non-severe symptoms in Hefei City, China: diagnostic value in organ injuries	European Journal of Clinical Microbiology & Infectious Diseases	China	Cross-sectional observational study with repeated laboratory measurements	To characterize laboratory abnormalities in patients with non-severe COVID-19 and evaluate their diagnostic value for organ injuries, including effects on coagulation and hemostasis.
10.5582/bst.2020.03086	Zou et al., (2020)	2020	Analysis of coagulation parameters in patients with COVID-19 in Shanghai, China	BioScience Trends	China	Retrospective observational cohort study	To investigate coagulation abnormalities in COVID-19 patients and evaluate the correlation between coagulation parameters and disease severity, as well as dynamic changes during recovery.
10.1089/vim.2020.0062	Liu et al., (2020)	2020	Correlation Between Relative Nasopharyngeal Virus RNA Load and Lymphocyte Count Disease Severity in Patients with COVID-19	Viral Immunology	China	Retrospective observational study	To analyze the correlation between dynamic changes in nasopharyngeal SARS-CoV-2 RNA load and disease severity, as reflected by lymphocyte count and other laboratory markers.
10.3343/alm.2022.42.1.24	Yoo et al., (2022)	2022	Comprehensive Laboratory Data Analysis to Predict the Clinical Severity of Coronavirus Disease 2019 in 1,952 Patients in Daegu, Korea	Annals of Laboratory Medicine	South of Corea	Retrospective multicenter cohort study	To assess prevalence, characteristics, and clinical impact of laboratory parameters in hospitalized COVID-19 patients and evaluate their correlation with clinical severity on admission.

Source: Elaborated by the authors.

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Supplementary Table S2 - Study characteristics

DOI	Authors	Total Sample Size	Number of Participants with Mild COVID-19	Age	Sex	Criteria Used to Define Mild COVID-19	PT Measurement Format	PT Value in Mild COVID-19 Group	Laboratory Reference Range	Timing of PT Measurement
10.1177/10760296209064868	Chen et al., (2020)	88 patients with COVID-19 (58 mild, 30 severe)	58 (mild cases)	Not reported	Not reported	Patients diagnosed with COVID-19 who did not meet criteria for severe disease according to the Chinese National Health Commission guidelines (Trial Version 7); severe criteria included respiratory distress ≥30/min, oxygen saturation ≤93%, PaO_2/FiO_2 ≤300 mmHg, or lung imaging progression >50% within 24–48 hours	Prothrombin Time (PT), measured in seconds (plasma samples analyzed using ACL TOP automatic coagulation analyzer)	11.34 ± 1.35 seconds	*Not reported*	*At hospital admission (baseline laboratory testing upon enrollment)*
10.1371/journal.pone.0272216	Tekle et al., (2022)	117 COVID-19 patients	Exact number not explicitly separated in mild vs moderate vs severe in overall total sample	Not reported	77 (65.8%) male overall (not broken down by mild vs severe here)	Clinical classification into mild, moderate, and severe groups (detailed severity definitions not explicitly excerpted, likely per WHO/clinical criteria but not stated verbatim)	Prothrombin Time measured in seconds (baseline and follow-up)	Median PT in mild group: 13.8 seconds (IQR 13.45–15.1)	*Reference ranges used (PT 10–14 sec) applied in definitions of abnormal PT in this setting*	*At hospital admission (baseline) and follow-up at day 7 for prognostic analysis*
10.1038/s41598-022-16915-8	Esmaeel et al., (2022)	267 patients with COVID-19	Not reported separately as "mild"; patients were categorized as non-severe (including non-hospitalized and moderate) and severe (71 cases).	37 (18–87) age	56.2% men	Not described as isolated "mild"; use of NIH COVID-19 Treatment Guidelines for severity classification and separation of "non-severe" vs. "severe" groups (including hospitalized and ICU patients).	Prothrombin concentration (PC, which is the inverse measure of PT; values derived from clotting time)	There is no typical PT value reported solely for "mild" cases. PC (prothrombin concentration) data were reported by severity, but not separately for isolated mild groups.	*Normal PC values are not explicitly provided in the available text.*	*Blood is collected upon admission, before starting any medication, to avoid interference with coagulation tests.*
10.7759/cureus.19124	Saurabh et al., (2021)	90 patients with COVID-19 confirmed by PCR.	48 non-severe patients (includes mild/moderate cases without severity criteria).	Overall: 51.3 ± 16.8 years, Non-severe group: 46.0 ± 16.41 years	53 males / 37 females (M:F ratio = 1.43)	Non-severe COVID-19 defined as absence of severe symptoms; severe cases defined by respiratory rate > 30/min, breathlessness, or oxygen saturation < 90% on room air	Prothrombin Time (PT), measured in seconds from citrated plasma using an automated coagulation analyzer	12.8 ± 1.4 seconds	*Not reported*	*At hospital admission (baseline), prior to initiation of treatment*
10.1159/000522543	Srivastava et al., (2022)	383 COVID-19 patients	104 (overall cohort); coagulation data available for 7 mild patients	NR (age distribution mentioned qualitatively; older age higher in non-survivors)	251 males; 132 females	Ministry of Health and Family Welfare (MoHFW), Government of India clinical severity guidelines	Prothrombin Time (seconds), measured using mechanical clot detection method (DESTINY PLUS analyzer)	Mean PT within normal reference range; significantly lower than moderate and severe groups (exact numeric mean not reported)	*Reported as standard laboratory reference range (exact PT range not numerically specified)*	*At hospital admission; for severe cases, repeated measurements averaged for analysis*
10.26355/eurrev_202309_33816	Karabulut; Sahin (2023)	88 participants	50 patients with mild/moderate COVID-19 (no stratification between mild and moderate)	COVID-19 group: 42.84 ± 16.67 years; Controls: 38.71 ± 12.65 years	COVID-19 group: 58% male (29), 42% female (21); Controls: 50% male (19), 50% female (19)	WHO criteria for COVID-19; patients hospitalized with symptomatic mild/moderate disease; ICU and critically ill patients excluded	Prothrombin Time (seconds), venous blood sample, routine coagulation assay	Median 9.95 s (min–max: 8.66–26.3); mean 10.89 ± 3.04 s	*NR (standard laboratory reference range used; specific numeric range not stated)*	*At hospital admission*
10.1371/journal.pone.0288139	Yessenbayeva et al., (2023)	301 participants	159	Median age reported by age groups; no significant age difference between mild and severe groups. Overall: patients ≥18 years; detailed mean ± SD not reported separately for mild group.	No significant difference by sex between mild and severe COVID-19 groups (p = 0.573). Exact male/female counts per group not specified.	Mild symptoms, No lung damage SpO_2 > 95%, Managed on an outpatient basis, Defined according to Kazakhstan Ministry of Health Clinical Protocol No. 130 (April 1, 2021)	Prothrombin Time (PT), measured in seconds (s)	Reported as lower than in severe COVID-19 group; exact numerical PT value for mild group not explicitly stated in the text provided.	*PT: 9–15 seconds*	*At hospital admission, prior to anticoagulant therapy*

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10.1002/hsr2.1105	Moya-Salazar et al., (2023)	186 participants	104	Overall mean age: 53.3 ± 16.3 years. Age by severity group: not separately reported for mild COVID-19	Overall: Male: 120 (64.5%) Female: 66 (35.5%) Sex distribution by severity group: not reported	Acute respiratory infection with at least two of the following: Cough, Malaise, Sore throat, Fever, Nasal congestion, May also include taste or smell changes and rashes; no dyspnea, no hypoxemia, no lung damage	Prothrombin Time (PT), measured in seconds (s)	Mean PT: 13.4 ± 2.3 seconds 95% CI: 12.9–13.9 s	*PT: 11–13.5 seconds*	*Baseline coagulation profile at clinical evaluation during the second wave of COVID-19 (January–April 2021)*
10.1159/000528318	Chen et al., (2023)	863 participants	304 (Delta variant)	Overall median age: 38 years (IQR 30–51; range 19–90). Age by severity group (mild): not separately reported	Overall: Male: 471 (54.58%) Female: 392 (45.42%) Sex distribution by severity group: not reported	Mild clinical symptoms with no pneumonia findings on imaging, according to: WHO interim guidance, Chinese National Health Commission Diagnosis and Treatment Protocol (Trial Version 8)	Prothrombin Time (PT), measured in seconds (s), venous blood sample	Numerical PT values for the mild Delta group were not explicitly reported in the text provided; PT analyzed comparatively across severity groups and showed statistically significant differences overall.	*Not explicitly stated in the article*	*Venous blood samples collected on days 1–2 of hospital admission*
10.1186/s40164-020-00172-4	Bao et al., (2020)	178 patients	129 patients with non-severe COVID-19 (mild and moderate not further stratified)	Overall median age: 64 years. Age by severity group: not separately reported	Overall: Male: 106 (59.6%) Female: 72 (40.4%) Sex distribution by severity group: not reported	Non-severe COVID-19 defined at admission according to American Thoracic Society guidelines for community-acquired pneumonia, excluding criteria for severe disease (e.g., no respiratory failure, no septic shock, no ≥3 minor severity criteria).	Prothrombin Time (PT), measured in seconds (s), venous blood sample, routine coagulation assay	Median PT: 12.70 s (IQR 12.15–13.59)	*Not explicitly stated (ISTH criteria referenced for DIC scoring; PT prolongation defined relative to baseline)*	*At hospital admission (Serial measurements performed weekly during hospitalization)*
10.1007/s10096-020-03967-9	Li et al., (2020)	97 participants	40 patients with non-severe COVID-19	57 healthy individuals matched by age and sex	Reported as matched between groups Exact numerical age values: not provided in the text excerpt	Matched between COVID-19 patients and controls. Exact numbers not reported	Confirmed SARS-CoV-2 infection by RT-PCR and CT imaging	Prothrombin Time (PT), measured in seconds (s), venous blood sample, standard coagulation assay	*PT was significantly prolonged in non-severe COVID-19 patients compared with healthy controls. Exact mean ± SD PT values: not explicitly reported in the text provided*	*Not explicitly stated*
10.5582/bst.2020.03086	Zou et al., (2020)	303 hospitalized adult patients with confirmed COVID-19	277 participants classified as "mild" (includes mild and moderate cases)	Overall median age: 51 years (range 16–88). Mild group: 50 years (IQR 36–63). Severe group: 65 years (IQR 63–76)	Overall: 158 males / 145 females Mild group: 49.8% male Severe group: 76.9% male	Classified using Chinese national guideline "Diagnosis and Treatment Protocols for Novel Coronavirus Pneumonia (7th edition)"; mild group included mild + moderate cases	All included patients classified as non-severe COVID-19 (no severe or critical cases included)	Median PT = 13.4 seconds (IQR 13.0–13.8)	*11.0–14.0 seconds*	*At hospital admission for all 303 patients; additionally at discharge for 240 recovered patients*
10.1089/vim.2020.0062	Liu et al., (2020)	76	46	Median 45 years (range 18–78)	49 males, 27 females	Mild group included patients not meeting severe criteria (no respiratory distress, oxygen saturation >93%, PaO2/FiO2 >300, no respiratory failure/shock/organ failure).	Prothrombin time measured in seconds (s) using standard coagulation assays at hospital admission (baseline) and at discharge for recovered patients	Median 12.3 s (IQR 11.9–12.7)	*Not reported in the provided text*	*Baseline admission laboratory test (time not explicitly specified; collected retrospectively during hospitalization)*
10.3343/alm.2022.42.1.24	Yoo et al., (2022)	1,952 hospitalized COVID-19 patients	1,612 patients (82.6% classified as mild on admission)	Mean age 58.1 ± 19.9 years; mild group mean age 55.3 ± 20.0 years	700 males (35.9%) overall; mild group 536 males (33.3%)	Clinical severity based on modified WHO ordinal scale: scores 1–2 classified as mild (no limitations or limitation of daily activities without oxygen therapy).	Prothrombin time measured in seconds (PT, s)	Not reported as specific median/mean PT INR values by group; only abnormal proportions and regression associations provided.	*PT INR reference range: 0.8–1.2*	*At hospital admission (baseline only)*

Continuação

DOI	Healthy Control Group Included	Comparison Across Disease Severity Groups	Statistical Significance of PT Differences	Direction of PT Change	Association Between PT and Disease Severity	Association Between PT and Clinical Outcomes	Adjustment for Confounding Factors	Other Coagulation Parameters Assessed	Inflammatory Markers Assessed	Limitations
10.1177/10760296209 64868	No	Yes — mild versus severe COVID-19 groups	Yes — PT significantly higher in severe group (P < 0.001)	PT was prolonged (increased) in severe COVID-19 compared with mild COVID-19	Yes — higher PT values associated with greater disease severity	Not assessed (no mortality, prognosis, or outcome analysis reported)	No — unadjusted comparisons only (independent sample t-tests)	APTT, fibrinogen (Fib), thrombin time (TT), D-dimer	None reported	Small sample size; single-center retrospective design; lack of prognostic and follow-up outcome analysis; absence of adjustment for confounding variables
10.1371/journal.pone.0272216	No (only COVID-19 patients)	Yes (mild, moderate, severe)	PT differed significantly across groups (p < 0.001)	PT increased (prolonged) with greater disease severity (mild < moderate < severe)	Yes — higher PT associated with more severe disease (ordinal logistic regression: PT increment linked to severity	Yes — changes in PT over 7 days associated with prognosis; increased PT at day 7 linked to worse prognosis	Yes — ordinal logistic regression adjusted for age and alcohol use for severity analysis; PT change associated with prognosis independent of some confounders	Activated Partial Thromboplastin Time (APTT)	Not reported in extraction (focus on PT and APTT)	Single-center study; sample size; limited assessment of other biomarkers; lack of extensive healthy controls; potential confounders like comorbidities not fully controlled (discussion context implies these)
10.1038/s41598-022-16915-8	No – only patients with COVID-19 were included.	Yes – patients were compared between severe and non-severe (including non-hospitalized and moderate cases).	Yes — PC (and by inference PT) showed statistically significant differences between the severity groups.	PC was reduced in severe cases (corresponding to prolonged PT), indicating worse coagulation in severe patients.	Yes — Lower PC is associated with greater severity (and a longer expected PT in severe patients).	Patients with coagulation abnormalities had worse survival in the Kaplan-Meier analysis (indicating a relationship with outcomes).	Yes — multivariate analysis included factors such as age and other clinical indicators to identify independent predictors (including PC, D-dimer, and AT-III).	aPTT, fibrinogen (Fg), antithrombin III (AT-III), and D-dimer	CRP, ESR, ferritin, LDH, neutrophil-to-lymphocyte ratio (NLR)	Limited to a single Egyptian hospital population; no healthy control group; PC was used instead of direct PT time; potential impact of confounding factors beyond controlling for the analyses.
10.7759/cureus.19124	No	Yes — severe versus non-severe COVID-19 patients	Yes — PT significantly higher in severe group (p < 0.001)	PT prolonged (increased) in severe COVID-19 compared with non-severe	Yes — prolonged PT associated with increased disease severity	Indirect — PT used as predictor of severity; mortality and long-term outcomes not directly analyzed	No — analyses based on univariate statistics (t-test, chi-square, ROC analysis)	D-dimer, fibrinogen, activated partial thromboplastin time (aPTT)	None reported	Hospital-based selection bias; small sample size; retrospective design; absence of serial coagulation measurements; lack of multivariable adjustment
10.1159/000522543	No	Yes (mild vs moderate vs severe)	Yes	PT increased with increasing disease severity (mild < moderate < severe)	Yes; PT significantly higher in severe and moderate COVID-19 compared to mild	Yes; PT significantly higher in nonsurvivors compared to survivors	No multivariable adjustment reported	Platelet count, fibrinogen, D-dimer, APTT, INR, Protein C, Protein S, Antithrombin	None reported	Retrospective design; coagulation data available only for a subset (70/383); small sample size for mild group; limited anticoagulant data
10.26355/eurrev_202309_33816	Yes (n = 38)	No (COVID-19 analyzed as a combined mild/moderate group)	Yes (COVID-19 vs controls: p < 0.001)	PT prolonged (↑) in mild/moderate COVID-19 compared to healthy controls	Not directly assessed (no severity stratification); PT discussed as predictive marker for COVID-19 presence	No (no ICU admission, mechanical ventilation, or mortality in the cohort)	No multivariable adjustment reported	aPTT, INR, D-dimer, fibrinogen	WBC, neutrophils, lymphocytes, CRP, PCT, ferritin, NLR, PLR, LCR	Small sample size; single-center study; no stratification between mild and moderate COVID-19; absence of severe cases; lack of longitudinal follow-up
10.1371/journal.pone.0288139	No (Comparison was between mild vs severe COVID-19 patients)	Yes Mild COVID-19 vs Severe COVID-19	Yes PT significantly higher in severe COVID-19 compared with mild COVID-19 (p = 0.012)	PT increased with increasing disease severity (Severe > Mild)	PT differed significantly between severity groups, but no strong correlation with severity was demonstrated; PT was not identified as a main severity biomarker.	No direct association reported between PT and outcomes such as mortality, ICU duration, or complications.	Yes. Multivariable logistic regression used for genetic association analyses; however, PT-specific confounder adjustment was not explicitly detailed.	Activated partial thromboplastin time (aPTT), International normalized ratio (INR), Prothrombin index (PTI), Fibrinogen, D-dimer	C-reactive protein (CRP), Fibrinogen, D-dimer	Relatively small sample size, No repeat measurements of coagulation markers in mild cases, Lack of data on SARS-CoV-2 variants, Genetic associations may be population-specific
10.1002/hsr2.1105	No	Yes Mild vs Moderate vs Severe COVID-19	No No significant difference in PT across severity groups (p = 0.564)	No consistent or significant trend across severity groups. PT values were similar in mild, moderate, and severe COVID-19	No significant association between PT concentration and COVID-19 severity	No direct association between PT and oxygen saturation, lung involvement, ICU admission, or other clinical outcomes. PT correlated with age (p = 0.013), but not with disease severity	No. Only univariate analyses (ANOVA, correlation tests); no multivariable adjustment reported	Activated partial thromboplastin time (aPTT), International normalized ratio (INR), Fibrinogen, D-dimer, Platelet count	None reported (e.g., CRP not assessed)	Single-center study, Cross-sectional design (no longitudinal follow-up or mortality analysis), Possible influence of anticoagulant therap, Limited evaluation of comorbidities, No assessment of additional coagulation, biomarkers (e.g., vWF, factor VIII), Potential population-specific genetic effects, Sample size may limit detection of differences between severity groups

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10.1159/000528318	No	Yes Mild vs Moderate vs Severe Delta variant COVID-19	Yes PT differed significantly across severity groups (p < 0.05)	PT increased with increasing disease severity (Severe > Moderate > Mild)	Yes PT showed significant differences across severity groups, but was not identified as an independent predictor in multivariable logistic regression.	No direct association with mortality, ICU outcomes, or length of stay was reported.	Yes. Stepwise multivariable binary logistic regression performed; PT was included in analyses but did not remain an independent predictor after adjustment.	D-dimer,Fibrinogen,International normalized ratio (INR),Activated partial thromboplastin time (aPTT),Thrombin time, Fibrin degradation products	Indirect hematological markers only (e.g., neutrophil count, lymphocyte count); no CRP, IL-6, or ferritin reported.	Single-center study, Retrospective design, Small number of severe cases (n = 22), Cross-sectional analysis (no causal inference), Lack of longitudinal follow-up, Results may not be generalizable beyond hospitalized Delta variant cases
10.1186/s40164-020-00172-4	No	Yes Non-severe vs Severe COVID-19	Yes PT significantly longer in severe vs non-severe COVID-19 (p = 0.000)	PT increased (prolonged) with increasing disease severity (Severe > Non-severe)	Yes PT significantly associated with disease severity and with DIC development	Indirect association. PT correlated with thrombocytopenia and DIC; severe disease associated with lower survival (85.7% vs 100%), but direct PT–mortality regression not performed	No. Analyses were univariate (t test, Spearman correlation); no multivariable adjustment reported	International normalized ratio (INR), Thrombin time (TT), Activated partial thromboplastin time (aPTT), D-dimer, Fibrinogen (for DIC scoring)	C-reactive protein (CRP), Lactate dehydrogenase (LDH), White blood cell count and differentials	Single-center study, Relatively short follow-up period, No adjustment for confounders, Lack of stratification within non-severe group (mild vs moderate), Early-pandemic cohort, potentially limiting generalizability
10.1007/s10096-020-03967-9	Serial measurements at four time points: Day 1 of admission, Day 4 of admission, Day 7 of admission, Day 10 of admission	Yes	Non-severe COVID-19 patients vs healthy controls	Yes. PT significantly longer in non-severe COVID-19 patients compared with controls (p < 0.05)	PT increased (prolonged) in non-severe COVID-19 relative to healthy individuals	Not assessed (All COVID-19 patients were non-severe; no severity stratification)	Indirect association. Prolonged PT interpreted as evidence of coagulation and hemostatic dysfunction related to SARS-CoV-2 infection	Activated partial thromboplastin time (APTT), PT-INR, Fibrinogen (FIB), D-dimer (D-D), Fibrin degradation products (FDP)	Inflammatory Markers Assessed, C-reactive protein (CRP); Serum ferritin (SF);, Interleukins (IL-1↕ IL-8); Other Organ System Markers Assessed, Liver enzymes (ALT, AST, ALP, GGT), Renal function (CRE, eGFR, UREA), Thyroid and parathyroid hormones, Bone metabolism markers, Growth hormone axis markers	Small sample size, Cross-sectional design limits causal inference, Lack of clinical outcome data, No adjustment for comorbidities or treatments
10.5582/bst.2020.03086	No	Yes, mild group (mild + moderate) vs severe group (severe + critical)	Yes, PT was significantly higher in the severe group compared with the mild group (p = 0.003)	PT was prolonged (increased) in severe cases relative to mild cases	Positive association: higher PT values observed in severe cases compared with mild cases, indicating greater coagulation dysfunction with increased severity	Not directly assessed in this study; outcomes were limited to discharge status and not correlated with PT	No multivariable adjustment was reported; comparisons were unadjusted between groups	INR, APTT, fibrinogen, fibrinogen degradation products (FDP), D-dimer	C-reactive protein (CRP) mentioned in introduction but not analyzed as a primary outcome in the presented data tables	Single-center retrospective design; limited representativeness; small number of severe/critical cases; no in-depth dynamic follow-up of critically ill patients; no multivariable adjustment; limited analysis of association with prognosis
10.1089/vim.2020.0062	No	Yes (mild vs severe)	p = 0.029 (significant)	PT was higher in severe vs mild group (PT increased with severity)	Positive correlation: higher PT associated with severe disease	Not directly assessed; however, PT elevation was associated with severity markers (e.g., higher viral load, organ injury).	No multivariable adjustment reported	D-dimer, fibrinogen, APTT	IL-2R, IL-6, IL-8, IL-10, IL-1↕ CRP	1) Retrospective design; 2) Single-center (provincial referral hospital) leading to selection bias; 3) Viral load quantified by DCT (relative, not absolute); 4) Only nasopharyngeal swab samples were used (may not reflect lung viral load).
10.3343/alm.2022.42.1.24	No	Yes; mild vs moderate vs severe	Yes; PT INR was significantly higher in moderate and severe groups compared with mild group (P < 0.001).	PT was prolonged (higher PT INR) with increasing severity	PT INR was independently associated with severity: higher PT INR increased risk of moderate (OR 2.384, 95% CI 1.543–3.684) and severe disease (OR 3.127, 95% CI 1.897–5.156). Abnormal PT INR also strongly associated with severity (moderate OR 3.474; severe OR 19.500).	Not directly assessed (only severity on admission).	Multinomial logistic regression adjusted for multiple laboratory variables simultaneously (no adjustment for comorbidities or demographics).	Activated partial thromboplastin time (aPTT), PT INR	C-reactive protein (CRP), procalcitonin (PCT)	1) Only hospitalized patients included; asymptomatic/mild cases in community centers excluded. 2) Not all tests performed in all patients; missing data. 3) Wide 95% CIs for ORs due to small severe group and variable range. 4) Different reagents/instruments across nine hospitals.

Source: Elaborated by the authors.

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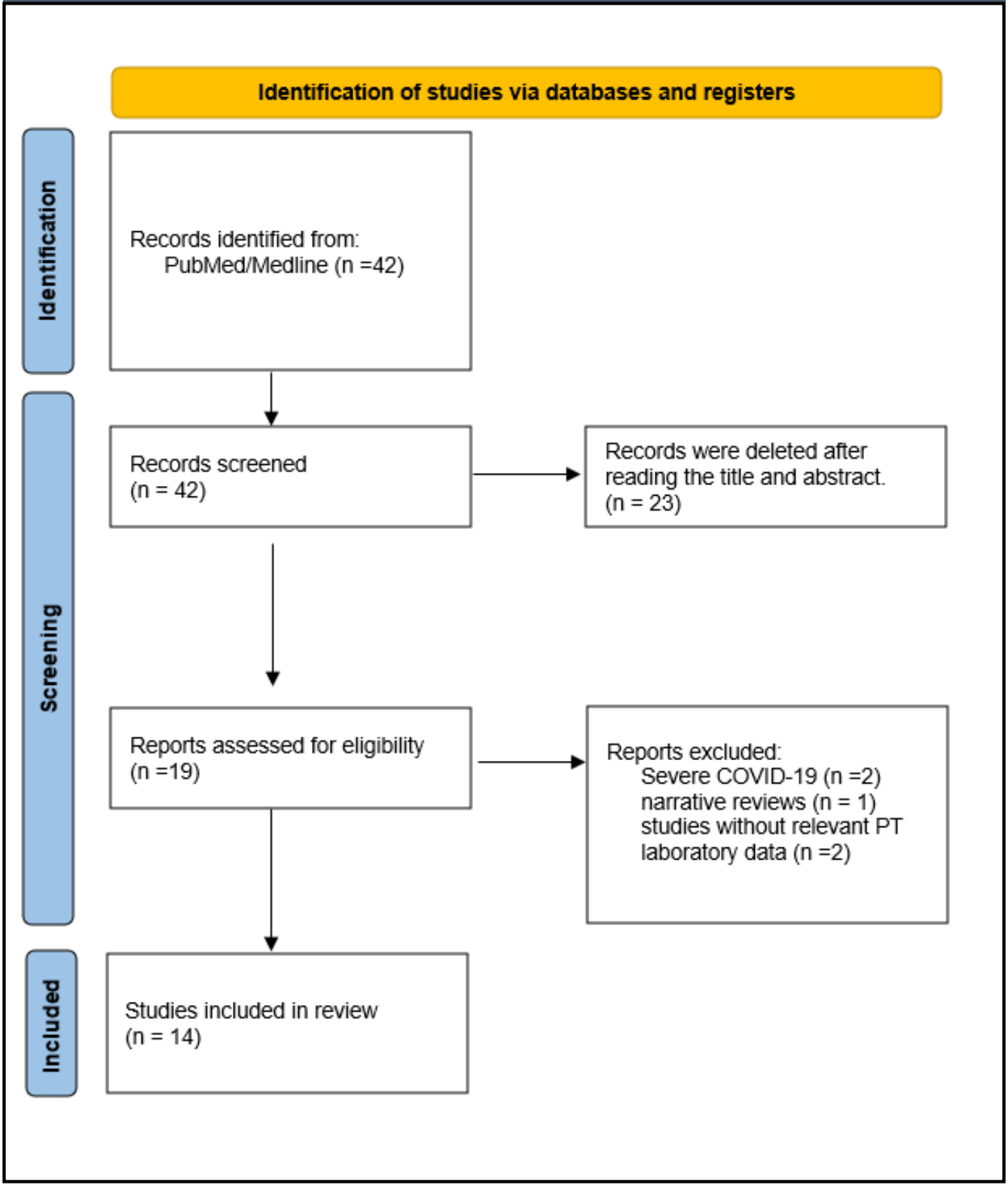
Figure 1. PRISMA-based flow diagram of study selection for PT in mild COVID-19.



Source: adapted from Page MJ et al., BMJ 2021;372:n71.

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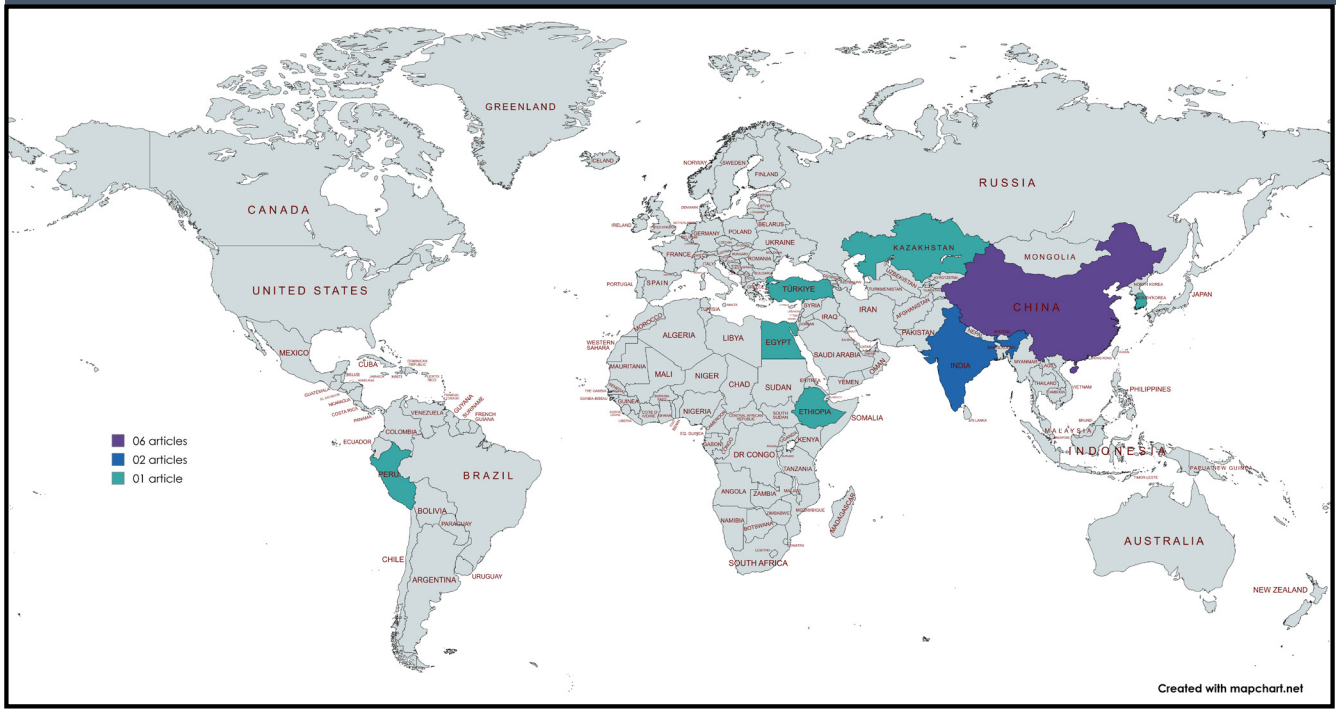
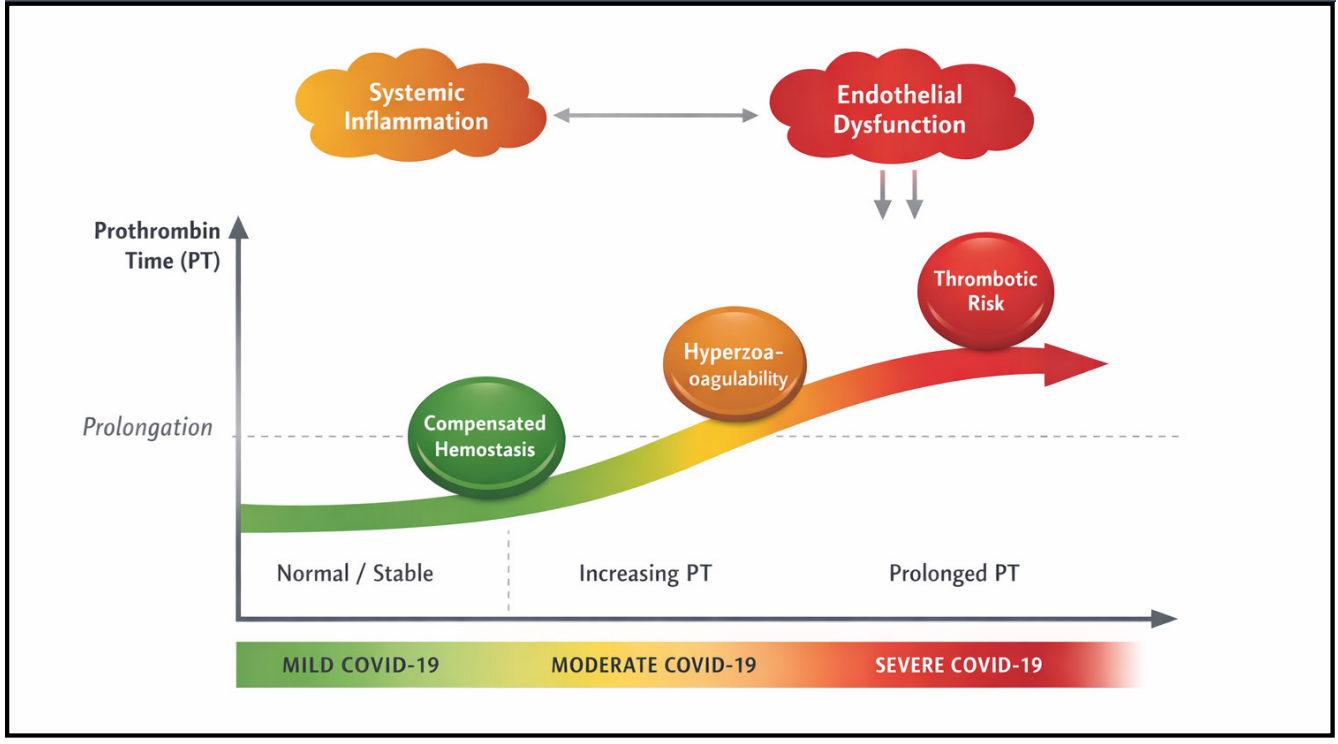
Figure 2. Geographic origin of included studies.



Source: authors, MapChart (2026).

Figure 3. PT remains normal in mild COVID-19 and progressively prolongs with increasing severity.



Source: Elaborated by the authors.

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