Patient deterioration and COVID-19: initial literature search results

This is the first of a planned series of quarterly alerts for new publications on the topic of patient deterioration and COVID-19. The citation and full-text links for these publications are listed below in the following themes: general, identification, management, and treatment. This initial list contains publications up to the 4th December 2020.

Deterioration (general)

BMJ Best Practice. Coronavirus disease 2019 (COVID-19). 2020 [cited 2020 Nov 06]; Available from: https://bestpractice.bmj.com/topics/en-gb/3000201

Identification

Al-Smadi AS, Bhatnagar A, Ali R, Lewis N, Johnson S. Correlation of chest radiography findings with the severity and progression of COVID-19 pneumonia. Clinical Imaging. 2021;71:17-23.

Assaf D, Gutman Ya, Neuman Y, Segal G, Amit S, Gefen-Halevi S, *et al.* Utilization of machine-learning models to accurately predict the risk for critical COVID-19. Intern Emerg Med. 2020;15;1435-43.

Ayanian S, Reyes J, Lynn L, Teufel K. The association between biomarkers and clinical outcomes in novel coronavirus pneumonia in a US cohort. Biomark Med. 2020.

Cecconi M, Piovani D, Brunetta E, Aghemo A, Greco M, Ciccarelli M, *et al.* Early Predictors of Clinical Deterioration in a Cohort of 239 Patients Hospitalized for Covid-19 Infection in Lombardy, Italy. J Clin Med. 2020;9(5):1548

Covino M, Sandroni C, Santoro M, Sabia L, Simeoni B, Bocci MG, *et al.* Predicting intensive care unit admission and death for COVID-19 patients in the emergency department using early warning scores. Resuscitation. 2020;156:84–91

Healthcare Safety Investigation Branch. Early warning scores to detect deterioration in Covid-19 inpatients. 2020 [cited 2020 Nov 06]; Available from: https://www.rcem.ac.uk/docs/Safety/HSIB_Early%20warning%20scores%20to%20detect%20deterioration%20in%20COVID-19%20inpatients%20V07.pdf

Jang JG, Ahn JH. The Author's Response: Prognostic Accuracy of the SIRS, qSOFA, and NEWS for Early Detection of Clinical Deterioration in SARS-CoV-2 Infected Patients. J Korean Med Sci. 2020;35(30):e274.

Jang JG, Hur J, Hong KS, Lee W, Ahn JH. Prognostic Accuracy of the SIRS, qSOFA, and NEWS for Early Detection of Clinical Deterioration in SARS-CoV-2 Infected Patients. J Korean Med Sci. 2020;35(25):e234.

Kim EJ, Hong HL. Letter to the Editor: Discussion of the Article "Prognostic Accuracy of the SIRS, qSOFA, and NEWS for Early Detection of Clinical Deterioration in SARS-CoV-2 Infected Patients". J Korean Med Sci. 2020;35(30):e274.

Liang W, Yao J, Chen A, Lv Q, Zanin M, Liu J, *et al.* Early triage of critically ill COVID-19 patients using deep learning. Nat Commun. 2020;11:3543.

Lim NT, Pan D, Barker J. NEWS2 system requires modification to identify deteriorating patients with COVID-19. Clin Med (Lond). 2020;20(4):e133-4.

Lin L, Hu K, Cai S, Deng X, Shao X, Liang Y, *et al.* Hypoproteinemia is an independent risk factor for the prognosis of severe COVID-19 patients. J Clin Biochem Nutr. 2020;67(2):126-30.

Peng X, Subbe CP, Zhang L, Luo Z, Peng L. NEWS can predict deterioration of patients with COVID-19. Resuscitation. 2020;152:26-7.

Pimentel MAF, Redfern OC, Hatch R, Young JD, Tarassenko L, Watkinson PJ. Trajectories of vital signs in patients with COVID-19. Resuscitation. 2020;156:99-106.

Royal College of Physicians. NEWS2 and deterioration in COVID-19 [online]. 2020 [cited 2020 Nov 06]; Available from: https://www.rcplondon.ac.uk/news/news2-and-deterioration-covid-19

Semeraro F, Scquizzato T, Scapigliati A, Ristagno G, Gamberini L, Tartaglione M, *et al.* New Early Warning Score: off-label approach for Covid-19 outbreak patient deterioration in the community. Resuscitation. 2020;151:24-5.

Vizcaychipi MP, Shovlin CL, McCarthy A, Howard A, Brown A, Hayes M, *et al.* Development and implementation of a COVID-19 near real-time traffic light system in an acute hospital setting. Emerg Med J. 2020.;37(10):630-636.

Volff M, Tonon D, Bourenne J, Simeone P, Velly L. No added value of the modified NEWS score to predict clinical deterioration in COVID-19 patients. Anaesth Crit Care Pain Med. 2020;39(5):577-8.

Vultaggio A, Vivarelli E, Virgili G, Lucenteforte E, Bartoloni A, Nozzoli C, *et al.* Prompt Predicting of Early Clinical Deterioration of Moderate-to-Severe COVID-19 Patients: Usefulness of a Combined Score Using IL-6 in a Preliminary Study. J Allergy Clin Immunol Pract. 2020;8(8):2575-81.

Management

Multidisciplinary, three-dimensional and individualized comprehensive treatment for severe/critical COVID-19. Liver Res. 2020;4(3):109-17.

Gavelli F, Castello LM, Bellan M, Azzolina D, Hayden E, Beltrame M, *et al.* Clinical stability and in-hospital mortality prediction in COVID-19 patients presenting to the Emergency Department. Minerva Med. 2020:10.23736/S0026-4806.20.07074-3.

Raza A, Estepa A, Chan V, Jafar MS. Acute Renal Failure in Critically Ill COVID-19 Patients With a Focus on the Role of Renal Replacement Therapy: A Review of What We Know So Far. Cureus. 2020;12(6):e8429.

Rumende CM, Susanto EC, Sitorus TP. The Management of Cytokine Storm in COVID-19. Acta Med Indones. 2020;52(3).

Safari S, Mehrani M, Yousefifard M. Pulmonary Thromboembolism as a Potential Cause of Clinical Deterioration in COVID-19 Patients; a Commentary. Arch Acad Emerg Med. 2020;8(1):e52.

Treatment

Bisson E, Presswood E, Kenyon J, Shelton F, Hall T. Against the odds: unlikely COVID-19 recovery. BMJ Support Palliat Care. 2020;10.1136/bmjspcare-2020-002477

Cao W, Liu X, Bai T, Fan H, Hong K, Song H, *et al.* High-Dose Intravenous Immunoglobulin as a Therapeutic Option for Deteriorating Patients With Coronavirus Disease 2019. Open Forum Infect Dis. 2020;7(3).

Hu Z, Lv Y, Xu C, Sun W, Chen W, Peng Z, *et al.* Clinical Use of Short-Course and Low-Dose Corticosteroids in Patients With Non-severe COVID-19 During Pneumonia Progression. Front Public Health. 2020;10.3389/fpubh.2020.00355.

Mwenge GB, Rodenstein D. CPAP Added to Oxygen Administration Avoid Intubation in Acute Respiratory Distress in COVID-19 Pneumonia. Case Report. SN Compr Clin Med. 2020;10.1007/s42399-020-00349-2.

Pang L, Liu Y, Shen M, Ye J, Chen R, Lan Z, *et al.* Influence of aging on deterioration of patients with COVID-19. Aging. 2020;10.18632/aging.202136.

Ragab D, Salah Eldin H, Afify M, Soliman W, Badr MH. A case of COVID-19, with cytokine storm, treated by consecutive use of therapeutic plasma exchange followed by convalescent plasma transfusion: a case report. J Med Virol. 2020;10.1002/jmv.26630.

Taha M, Sharma A, Soubani A. Clinical deterioration during neutropenia recovery after G-CSF therapy in patient with COVID-19. Respir Med Case Rep. 2020;31: 101231.

van Kraaij TDA, Mostard RL, Ramiro S, Magro Checa C, van Dongen CM, van Haren EH, *et al.* Tocilizumab in Severe COVID-19 Pneumonia and Concomitant Cytokine Release Syndrome. Eur J Case Rep Intern Med. 2020;7(5).

Ye Q, Wang B, Mao J. The pathogenesis and treatment of the `Cytokine Storm' in COVID-19. J Infect. 2020;80(6):607-13.