

SepsEast and COVID-19: time to make a difference

Lainščak, Mitja; Šustić, Alan; Benes, Jan; Czuczwar, Miroslav; Janković, Radmilo; Kirov, Mikhail; Kula, Roman; Kusza, Krzysztof; Podbregar, Matej; Sandesc, Dorel; ...

Source / Izvornik: **Signa Vitae, 2020, 16, 1 - 4**

Journal article, Published version

Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

<https://doi.org/10.22514/sv.2020.16.0001>

Permanent link / Trajna poveznica: <https://urn.nsk.hr/urn:nbn:hr:184:923221>

Rights / Prava: [Attribution-NonCommercial 4.0 International/Imenovanje-Nekomercijalno 4.0 međunarodna](#)

Download date / Datum preuzimanja: **2024-10-05**



Repository / Repozitorij:

[Repository of the University of Rijeka, Faculty of Medicine - FMRI Repository](#)



EDITORIAL

SepsEast and COVID-19: Time to Make a Difference

Mitja Lainscak^{1,2,*}, Alan Sustic^{3,4}, Jan Benes^{5,6}, Miroslaw Czuczwar⁷, Radmilo Jankovic⁸, Mikhail Kirov⁹, Roman Kula¹⁰, Krzysztof Kusza¹¹, Matej Podbregar^{2,12}, Dorel Sandesc¹³, Ovidiu Bedreag¹³, Konstanty Szuldrzynski¹⁴, Roman Zahorec¹⁵, Peter Hegyi¹⁶, Zsolt Molnar^{11,16,*}

¹Division of Cardiology, General Hospital Murska Sobota, Murska Sobota, Slovenia

²Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia

³Department of Anesthesiology, Reanimatology, Intensive Care and Emergency Medicine, Faculty of Medicine, University of Rijeka, Rijeka, Croatia

⁴Department of Clinical Medical Science II, Faculty of Health Studies, University of Rijeka, Rijeka, Croatia

⁵Department of Anesthesiology and Intensive Care, Faculty of Medicine in Plzen, Charles University, Czech Republic

⁶Biomedical center, Faculty of Medicine in Plzen, Charles University, Czech Republic

⁷^{2nd} Department of Anaesthesiology and Intensive Therapy, Medical University of Lublin, Lublin, Poland

⁸Clinic for Anesthesiology and Intensive Care, Clinical Center Nis, School of Medicine, University of Nis, Serbia

⁹Department of Anesthesiology and Intensive Care Medicine, Northern State Medical University, Arkhangelsk, Russian Federation

¹⁰Department of Anesthesiology and Intensive Care, University Hospital Ostrava, Czech Republic

¹¹Department of Anesthesiology and Intensive Therapy, Poznan University of Medical Sciences, Faculty of Medicine, Poznan, Poland

¹²Department for internal intensive care, General and Teaching Hospital Celje, Slovenia

¹³"V. Babes" University of Medicine and Pharmacy, Timisoara, Romania

¹⁴Department of Interdisciplinary Intensive Care Jagiellonian University Medical College, Krakow, Poland

¹⁵Department of Anesthesiology and Intensive Medicine, Comenius University, Bratislava, Slovakia

¹⁶Institute for Translational Medicine, School of Medicine, University of Pécs, Pécs, Hungary

*Correspondence: Mitja.lainscak@guest.arnes.si (Mitja Lainscak); zsoltmolna@gmail.com (Zsolt Molnar)

Abstract

SepsEast is an enthusiastic intensivists group initiative launched in 2012, with the aim to facilitate clinical and research activities in the region. Through its actions and with the motto « Together we win, divided we are slow! » several joint research projects in the fields of perioperative medicine, fluid therapy, cardiovascular monitoring and support have been conducted. In the light of the COVID-19 pandemic, the SepsEast community is aware of its mission and is ready to take the challenge. This is mirrored by several educational, clinical and research activities including the development of a COVID-19 Registry; and an observational clinical study on cytokine adsorption in COVID-19 patients. The current pandemic should be our lesson on how to manage the global threat of infectious disease and to develop strategies for effective diagnostic and therapeutic procedures. Hopefully, the SepsEast community will contribute to these developments and scientific advances in general.

Keywords

COVID-19, SARS-CoV-2, SepsEast

1. SepsEast: facts and figures

SepsEast is an enthusiastic intensivists group initiative launched in 2012, with the first SepsEast conference held in Budapest, Hungary. The idea was to bring together experts from Eastern and Western Europe and beyond. Although critically ill patients exist and are managed worldwide, disparities are evident in organizational, financial, and research arenas. SepsEast aimed to reduce these disparities and initiated several actions that were driven through extensive networking around the biannual

SepsEast conference and also through ongoing scientific and clinical collaboration. Particular attention was given to hands-on education and involvement of junior colleagues, as well as research output [1].

Over the years, the SepsEast spirit and motto « Together we win, divided we are slow! » prompted many to give momentum to joint research projects in the fields of perioperative medicine, fluid therapy, cardiovascular monitoring and support [2, 3]. Along with conferences, we also aimed to build teams of experts to summarize and comment on

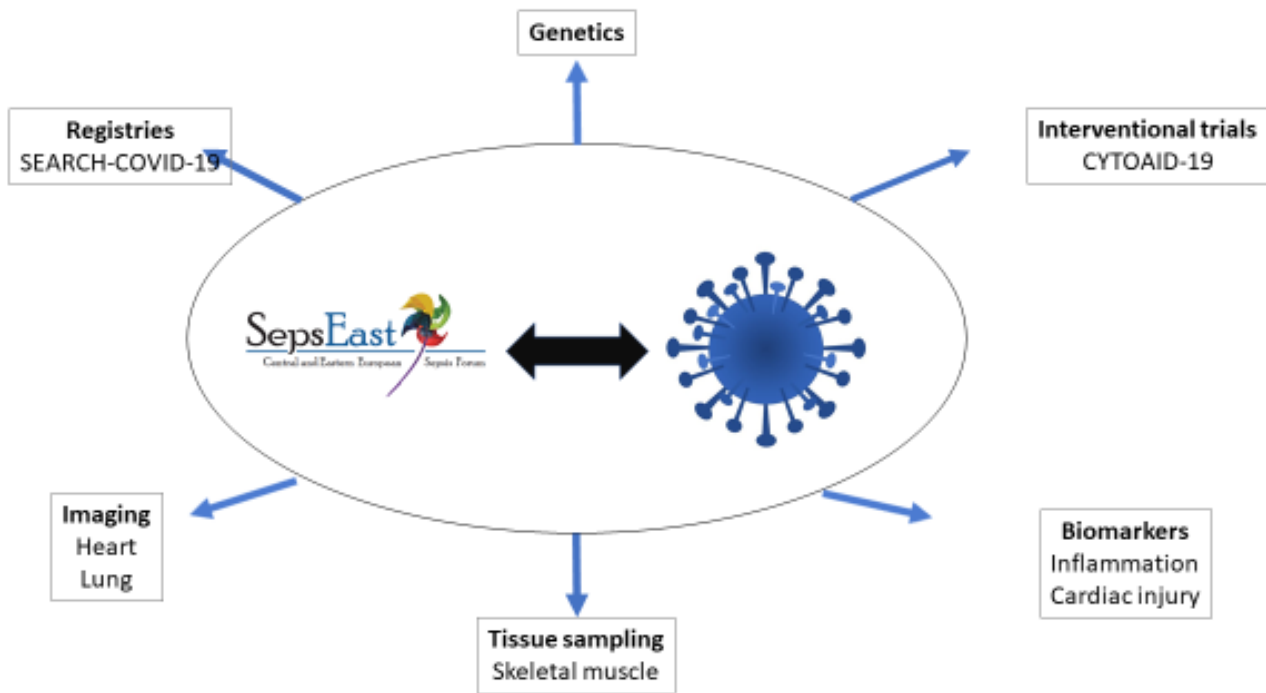


FIGURE 1. SepsEast and COVID-19: interactions and possibilities.

state-of-the-art viewpoints in various fields of intensive care medicine and beyond [4–7]. To some extent, this has also led to involvement in multicenter trials or other multinational registry analysis [3, 8, 9].

2. Effects of COVID-19 pandemic on the intensive care unit (ICU)

At the end of 2019 and still ongoing, the new coronavirus, namely SARS-CoV-2, the Corona Virus Disease 19 (COVID-19) causative agent started its global spread which triggered a world lock-down to varying degrees [10]. The toll to the community in terms of infected people is rising, as are the number of deceased [11]. Despite enormous interest and the exponential rise in publications, we still do not completely understand the mechanisms of action and pathophysiology behind the tissue injury and organ damage caused by the virus. The first retrospective study on hospitalized patients admitted with COVID-19 pneumonia showed that 26.1% required admission to the ICU because of complications that included arrhythmias (44.4%), acute respiratory distress syndrome (ARDS) (61.1%) and shock (30.6%) [12]. Recent data from the United Kingdom including almost 7000 ICU patients, reported devastating results, namely that 67% required mechanically ventilation, and mortality was above 50% [13]. Therefore, it is not surprising that to address open issues and develop therapies, the scientific community, supported through governmental and international support immediately started to orchestrate efforts to find answers to and a remedy for COVID-19 [14].

3. SepsEast and COVID-19: current status and challenges ahead

Along these lines, the SepsEast community has also gained momentum and started research plus various educational activities. For COVID-19, we still lack adequate information in all aspects from epidemiology, clinical course, pathophysiology and management strategies. Through the Institute for Translational Medicine (School of Medicine, University of Pécs, Pécs, Hungary), the SepsEast community would therefore like to initiate and coordinate several activities by reaching out to all interested centers.

Although usually neglected, epidemiological aspects of COVID-19 are of utmost importance to understand the risk of infection, susceptible phenotypes and the potential for viral spread in the community. Same aspects apply to critically ill patients thus we are currently launching a prospective, multicentre international registry on ICU patients treated with COVID-19, called SepsEAST Registry to define the CHaracteristics in CORonaVirus Disease 2019 (SEARCH-COVID-19), which recently received national ethics approval in Hungary [15] and for which the study protocol is in preparation to be registered on ClinicalTrials.gov. We strongly believe that a global approach with significant cross-talk between various aspects and research groups is warranted (Fig. 1).

In addition to data collection, we have also developed a mentoring program (Intensive Tutorial Online – for All, ITO-M). This has already started in Hungary led by the Institute for Translational Medicine with huge success. Tutorials include online webinars in native language [16], and implementation of the most recent scientific knowledge is supported by dedicated mentors covering the whole country

[17]. After just three sessions in three weeks, more than 1000 participants had attended the courses and more than 7000 had watched the webinar later on YouTube. This concept with a similar setup has also been implemented in the other SepsEast member countries as a stand-alone event, or in cooperation with ongoing projects (i.e. AKUTNE.CZ in the Czech Republic).

Even in an epidemic or pandemic, controlled trials should still be regarded as the standard for effective therapy development. In line with this a prospective observational trial has also received ethics approval, the CYTOsorb Analysis of International Data on patients with COVID-19 caused acute respiratory failure-prospective, observational trial (CYTOAID-COVID-19) [18], that aims to test the effects of extracorporeal cytokine adsorption on oxygenation in COVID-19 caused acute respiratory failure requiring mechanical ventilation on the ICU. The study is now ready to start patient recruitment.

Regarding future research plans we would also like to focus on cardiac/ cardio-vascular injuries caused by COVID-19. SARS-CoV-2 has been detected in the myocardium, and there are first reports of myocarditis [19–21]. This calls for a specific cardiovascular registry and efforts to develop this are underway [22]. Moreover, blood vessels may also be a very important target, causing endotheliitis and vascular injury [23]. In addition to laboratory biomarkers, tissue sampling and storage in biobanks, genetic aspects to get insight into pathogenesis and mechanistic pathways are of pivotal importance [24–27]. Heart and lung imaging by echocardiography and magnetic resonance could also provide extremely important information [28–32], which may provide pivotal importance in COVID-19 patients' management on the ICU. To date, only a few trials in COVID-19 patients have been published, sadly with no definite advancement in the field [33].

The SepsEast platform with the coordination of its key opinion leaders and the advanced research facilities provided by the Institute for Translational Medicine could serve as a perfect match for high quality collaborative work.

4. SepsEast and COVID-19: the future

In the most optimistic scenario, we will need at least 12 months before getting the stronger grip of the COVID-19 pandemic. Even when under control, seemingly the world will not be the same as we are used to. The current pandemic should be our lesson on how to manage the global threat of infectious disease and to develop strategies for effective diagnostic and therapeutic procedures. Hopefully, the SepsEast community will contribute to these developments and scientific advances in general.

ACKNOWLEDGEMENTS

The authors would like to thank Mrs Harriet Adamson for language editing the manuscript.

CONFLICT OF INTEREST

The authors have not declared any conflict of interest.

REFERENCES

- [1] Molnar Z. SepsEast: Bridging between East and West. *J Crit Care.* 2017;40:323.
- [2] Kirov MY, Kuzkov VV, Molnar Z. Perioperative haemodynamic therapy. *Curr Opin Crit Care.* 2010;16:384-92.
- [3] Salzwedel C, Puig J, Carstens A, et al. Perioperative goal-directed hemodynamic therapy based on radial arterial pulse pressure variation and continuous cardiac index trending reduces postoperative complications after major abdominal surgery: a multi-center, prospective, randomized study. *Crit Care.* 2013;17:R191.
- [4] Lainscak M, Molnar Z, Monnet X, et al. Cardiovascular Function in Intensive Care Medicine or Homo Mensura Est. *Biomed Res Int.* 2016;2016:6301074.
- [5] Benes J, Kirov M, Kuzkov V, et al. Fluid Therapy: Double-Edged Sword during Critical Care? *Biomed Res Int.* 2015;2015:729075.
- [6] Molnár Z, Benes J, Reuter DA. Intensive care medicine in 2050: perioperative critical care. *Intensive Care Med.* 2017; 43:1138-1140.
- [7] Molnar Z, Szabo Z, Nemeth M. Multimodal individualized concept of hemodynamic monitoring. *Curr Opin Anaesthesiol.* 2017;30:171-177.
- [8] Rello J, Krenn CG, Locker G, et al. A randomized placebo-controlled phase II study of a *Pseudomonas* vaccine in ventilated ICU patients. *Crit Care.* 2017;21:22.
- [9] Ahmad T, Beilstein CM, Aldecoa C, et al. Variation in haemodynamic monitoring for major surgery in European nations: secondary analysis of the EuSOS dataset. *Perioper Med (Lond).* 2015;4:8.
- [10] Fauci AS, Lane HC, Redfield RR. Covid-19 - Navigating the Uncharted. *N Engl J Med.* 2020;382:1268-1269.
- [11] Munster VJ, Koopmans M, van Doremalen N, et al. A Novel Coronavirus Emerging in China - Key Questions for Impact Assessment. *N Engl J Med.* 2020;382:692-694.
- [12] Wang D, Hu B, Hu C. Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China. *JAMA.* 2020.
- [13] ICNARC (Intensive Care National Audit and Research Centre) Case Mix Programme database report 24 April 2020 (www.icnarc.org).
- [14] COVID-19 Clinical Research Coalition. Global coalition to accelerate COVID-19 clinical research in resource-limited settings. *Lancet.* 2020;395:1322-1325.
- [15] Nemzeti Népegészségügyi Központ IV/3971-3/2020/EKU, 20.05.2020.
- [16] <https://tm-centre.org/hu/munkacsoportok/intenziv-tudomanyok-online-mindenki-nek-ito-m-hu/>, last viewed 5.5.2020
- [17] <https://tm-centre.org/hu/munkacsoportok/mentorhalo-mentorterkep/>, last viewed 5.5.2020
- [18] Nemzeti Népegészségügyi Központ IV/4568-1/2020/EKU, 22.05.2020.
- [19] Inciardi RM, Lupi L, Zaccone G, et al. Cardiac Involvement in a Patient With Coronavirus Disease 2019 (COVID-19). *JAMA.* 2020.
- [20] Inciardi RM, Adamo M, Lupi L, et al. Characteristics and outcomes of patients hospitalized for COVID-19 and cardiac disease in Northern Italy. *Eur Heart J.* 2020.
- [21] Tavazzi G, Pellegrini C, Maurelli M, et al. Myocardial localization of coronavirus in COVID-19 cardiogenic shock. *Eur J Heart Fail.* 2020.
- [22] Linschoten AM, Asselbergs FW. CAPACITY-COVID: a European registry to determine the role of cardiovascular disease in the COVID-19 pandemic. *Eur Heart J.* 2020.
- [23] Varga Z, Flammer AJ, Steiger P, et al. Endothelial cell infection and endotheliitis in COVID-19. *Lancet.* 2020;395:1417-1418.
- [24] Henry BM, de Oliveira MHS, Benoit S, et al. Hematologic, biochemical and immune biomarker abnormalities associated with

- severe illness and mortality in coronavirus disease 2019 (COVID-19): a meta-analysis. *Clin Chem Lab Med*. 2020.
- [25] Zeng Q, Li Yong-Zhe, Huang Hang, et al. Mortality of COVID-19 is Associated with Cellular Immune Function Compared to Immune Function in Chinese Han Population. *Med Rxiv*. 2020
- [26] Zhou F, Yu T, Du R, et al. Clinical Course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet*. 2020;395:1054-62.
- [27] Zahorec R, Hulin I, Zahorec P. Rationale Use of Neutrophil-to-Lymphocyte Ratio for early diagnosis and stratification of COVID-19. *Brat Med J*. 2020.
- [28] Čelutkienė J, Lainscak M, Anderson L, et al. Imaging in patients with suspected acute heart failure: timeline approach position statement on behalf of the Heart Failure Association of the European Society of Cardiology. *Eur J Heart Fail*. 2020;22:181-195.
- [29] Čelutkienė J, Plymen CM, Flachskampf FA, et al. Innovative imaging methods in heart failure: a shifting paradigm in cardiac assessment. Position statement on behalf of the Heart Failure Association of the European Society of Cardiology. *Eur J Heart Fail*. 2018;20:1615-1633.
- [30] Harjola VP, Parissis J, Brunner-La Rocca HP, et al. Comprehensive in-hospital monitoring in acute heart failure: applications for clinical practice and future directions for research. A statement from the Acute Heart Failure Committee of the Heart Failure Association (HFA) of the European Society of Cardiology (ESC). *Eur J Heart Fail*. 2018;20:1081-1099.
- [31] Ovsenik A, Fabijan A, Bervar M, et al. Can echocardiographic assessment of interatrial septum shape and motion improve the accuracy of the BLUE protocol? *Signa Vitae*. 2019;15:18-22.
- [32] Šustić M, Šustić A. Unrecognized B line mimicked pneumothorax on M mode ultrasound. *Signa Vitae*. 2018;14:92.
- [33] Cao B, Wang Y, Wen D, et al. A Trial of Lopinavir-Ritonavir in Adults Hospitalized with Severe Covid-19. *N Engl J Med*. 2020.

How to cite this article: Mitja Lainscak, Alan Sustic, Jan Benes, Mirosław Czuczwar, Radmilo Jankovic, Mikhail Kirov, et al. SepsEast and COVID-19: time to make a difference. *Signa Vitae*. 2020;16(1):1-4. doi:10.22514/sv.2020.16.0001.