

EDITORIAL  
COVID OUTBREAK AND VASCULAR DISEASESCOVID-19 outbreak and vascular surgery  
treatments: experiences, evidence, perspectiveSanti TRIMARCHI<sup>1,2\*</sup>, Gabriele PIFFARETTI<sup>3</sup><sup>1</sup>Unit of Vascular Surgery, Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy; <sup>2</sup>Department of Clinical Sciences and Community Health, University of Milan, Milan, Italy; <sup>3</sup>School of Medicine, Unit of Vascular Surgery, Department of Medicine and Surgery, University of Insubria, Varese, Italy\*Corresponding author: Santi Trimarchi, Unit of Vascular Surgery, Department of Clinical and Community Sciences, Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, University of Milan, Via Francesco Sforza 35, 20122 Milan, Italy. E-mail: [santi.trimarchi@unimi.it](mailto:santi.trimarchi@unimi.it)

It is a real pleasure to have edited and reviewed this monographic issue of *The Journal of Cardiovascular Surgery* regarding the impact of Coronavirus-19 (COVID-19) outbreak on vascular surgery activity worldwide. In this issue, authors provided a comprehensive review of clinical presentation, perioperative characteristics and outcomes for each type of arterial and venous disease in patients treated during the pandemic period, according to the current published literature. Each article centered its analysis not only on infected patients, but also on noninfected population, including the dramatic events concerning the hospitals' overload, the unavailability of operating theaters and medical/healthcare personnel.

In their revision regarding aortic interventions, Bissacco *et al.* described and analyzed variations in aortic aneurysm and dissection management, highlighting some challenging aspects regarding assessment, treatment and outcomes.<sup>1</sup>

Similar analysis was made by Casana *et al.*, providing evidence from published literature (case reports, multicenter experience, and experts' opinion) on vascular surgery services and interventions for carotid artery disease, describing COVID-19-related findings, intraoperative observations, and postoperative outcomes.<sup>2</sup>

Attisani *et al.* centered their perspectives on acute and chronic limb ischemia.<sup>3</sup> In this systematic review, the authors provided useful information regarding anatomic location, treatment options, and 30-day outcomes of an important COVID-19-related disease.

As original contributors, we had the pleasure to pres-

ent in this issue the vascular subgroup analysis from the COVIDSurg Collaborative Group, an international register collecting data from more than 20 countries and 230 hospitals.<sup>4</sup> The aim was to further examine the outcomes of the vascular subgroup during the first major COVID-19 pandemic peak and to explore whether certain patient characteristics were associated with worse outcomes.

Despite different topics, these papers shared similar conclusions: patients' management during COVID-19 outbreak was dramatic and exposed to several patient-, hospital- and physician-related problems; as primary disease or postoperative findings, arterial (*e.g.* cerebral, aortic, distal) thrombotic events remain a typical COVID-19-related complications; outcomes in infected population are worst if compared with those noninfected or patients treated before the pandemic period, because of both systemic infection and vascular disease postoperative complications.

Furthermore, also venous thrombotic disorders remain a severe complication of COVID-19 infection. Mazzaccaro *et al.* worked to systematically summarize prevalence, risk factors, current evidence, treatment protocols and outcomes of venous thrombotic disease in infected hospitalized patients – in particular in Intensive Care Unit.<sup>5</sup> Despite clinical scenario in COVID-19 patients is similar to noninfected ones, debate remains on the correct dosage of thromboprophylaxis in these patients.

Finally, an interesting letter by Spada *et al.* offer their experience about the role of web in COVID-19 data analysis, interpretation and disclosure to general population, under-

lining the difficulties to explain scientific methods, considerations and results, as well as epidemiological data to non-expert people – often confusing by the infodemic condition.<sup>6</sup>

Despite the great amount of literature analyzed in these papers, some gray points remain regarding COVID-19 vascular disease and their management. Further studies are needed to obtain more robust evidence to improve an early and prompt treatment, perioperative assessment, as well as short and long-term outcomes.

## References

1. Bissacco D, Lomazzi C, Buongiovanni G, Magni A, Domanin M, Casana R, *et al.* COVID-19 and aortic disease: a practical systematic review of the literature on management and outcomes. *J Cardiovasc Surg* 2021;62:527–34.
2. Casana R, Domanin M, Romagnoli S, Bissacco D, Malloggi C, Grassi V, *et al.* COVID-19 and supra-aortic trunks disease: review of literature about critical phase and sequelae. *J Cardiovasc Surg* 2021;62:535–41.
3. Attisani L, Pucci A, Luoni G, Luzzani L, Pegorer MA, Settembrini AM, *et al.* COVID-19 and acute limb ischemia: a systematic review. *J Cardiovasc Surg* 2021;62:542–7.
4. Hitchman L, Machin M; The COVIDSurg Collaborative and Vascular and Endovascular Research Network. Impact of COVID-19 on vascular patients worldwide: analysis of the COVIDSurg data. *J Cardiovasc Surg* 2021;62:558–70.
5. Mazzaccaro D, Giannetta M, Fancoli F, Milani V, Modafferi A, Malacrida G, *et al.* COVID and venous thrombosis: systematic review of literature. *J Cardiovasc Surg* 2021;62:548–57.
6. Spada P, Silvestri G. Beyond vascular surgery: a general overview from the web. *J Cardiovasc Surg* 2021;62:571–2.

*Conflicts of interest.*—The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

*Authors' contributions.*—Santi Trimarchi and Gabriele Piffaretti have given substantial contributions to manuscript writing and manuscript revision. Both authors read and approved the final version of the manuscript.

*History.*—Article first published online: September 30, 2021. - Manuscript accepted: September 29, 2021. - Manuscript received: September 28, 2021.

*(Cite this article as:* Trimarchi S, Piffaretti G. COVID-19 outbreak and vascular surgery treatments: experiences, evidence, perspective. *J Cardiovasc Surg* 2021;62:525-6. DOI: 10.23736/S0021-9509.21.12114-7)