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Cover Story:

COVID-19 Care Continuum

Call to Action for the Cardiovascular Segment of COVID-19

The rapid global distribution of the Coronavirus and the fear of collapsing healthcare systems have forced hospitals to concentrate on the treatment of COVID-19 patients and allocate their resources accordingly. As a consequence up to 80% of the elective cardiovascular (CV) interventions have been indefinitely postponed.[1] This measure resulted in a number of alarming developments. One was that the early presentation of patients showing potential symptoms of cardiovascular diseases (CVD) significantly decreased due to the fear of contagion in the hospitals or limited access to overcrowded emergency services.[1,2] This could be the reason for a decrease of myocardial infarction incidence by up to 50%. In the current COVID-19 situation standard treatment protocols are shortened due to the fact that emergency-driven changes to hospital logistics conflict with important principles of CVD patient treatment.[2]

Additionally, cardiologists are facing the severe impact of COVID-19 on the cardiovascular health of the patients. There is increasing evidence that patients with pre-existing cardiovascular disease and cardiac risk factors, such as aging, hypertension, and diabetes, are more severely affected by the COVID-19 in terms of both morbidity and mortality.[2] A very recent meta-analysis of six studies showed that up to 14.6% of the included COVID-19 patients suffer from CV disease, up to 38.6% develop hypertension and up to 19.5% have diabetes.[3] CVD may even develop through COVID-19 in cases without prior symptoms or medical history.[3,4] It has been reported that acute myocardial infarction was the cause of death in patients hospitalized with Severe Respiratory Syndrome (SARS)[4], which is one of the main complications associated with COVID-19. Further, common drug therapies for COVID-19 may cause serious cardiovascular side effects, which can have essential impact on patient outcome.

Cardiologists around the world are now calling for action to coordinate measures that are urgently needed in order to avoid the aftermath of the COVID-19 pandemic. *"We believe that the COVID-19 crisis will have a memory, with longer term residual repercussions on the cardiovascular system."*[2] Patients who urgently require cardiovascular examinations and procedures

are delayed, others fear hospital admission due to infection, which will – in the long run – result in the deterioration of the cardiovascular status ending up in long-lasting cardiovascular damage in many of the patients, as well as in patients surviving the COVID-19 infection.[2]

The need is to understand different mechanisms underlying the association between CVD and COVID-19, to reconsider the use of current drugs used in cardiovascular patients and to develop *"clinical cardiovascular biomarkers allowing for effective future management of such patients."* [2] As evidence shows that the prevalent manifestation and cause of death is severe respiratory syndrome (SARS), the early assessment of cardiovascular status of the COVID-19 patient is just as essential in order to prevent disease escalation and long-term sequelae.

To date blood pressure, cardiac output and other hemodynamic parameters can easily and noninvasively be measured using the patient's fingers to support educated decision making. As the inventor of a technology focusing on advanced noninvasive hemodynamic solutions, I ask myself if our quick and simple CNAP® monitoring could help cardiologists to easily diagnose the CV status of both, CVD patients in times of COVID-19 or COVID-19 patients with CV complications. ■

Author: Dr. Jürgen Fortin
CEO & Chief Scientific Officer | CNSystems| **Austria**
fortin@cnsystems.com | www.cnsystems.com

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