EDITORIAL

Heart, Vessels and Transplantation 2021; 5: 48-50.
DOI: 10.24969/hvt.2020.253

From Editor-in-Chief: On current issue, important cardiovascular documents and trials, COVID-19 sequels, and welcome to the new Editors

Dear readers,

In this issue of the journal you can find a systematic review on His-bundle pacing, providing the comprehensive critical summary on current evidence on this pacing modality, which is gaining wider use; an interactive teaching review on radiology of lungs in COVID-19 from experienced center with large number of evaluated cases; interesting rare case report on complex ventricular arrhythmia due loperamide abuse; a puzzling quiz on cardiac imaging and article on ECG interpretation. Another article is on research education, which becomes compulsory as research skills is of interest not only for PhD candidates or those seeking career advancement in academic environment but also is a part of curricula for medical specialization training, summarizing international research interdisciplinary schools and introducing new research education modalities. You may find exciting article on annual international conference on advancements in cardiac surgery and master-classes that took place in Bishkek and Issyk-Kul, Kyrgyzstan.

As for updates in cardiovascular diseases management, several interesting position and consensus documents from ESC associations are published (1-3): EHRA practical guide on use of non-vitamin K oral anticoagulants in patients with atrial fibrillation (AF) - indications, dosing, monitoring in different groups of patients with AF and useful teaching clinical scenarios; EHRA detailed practical guide on implantation techniques, perioperative management of pacemakers and implantable cardiac defibrillators, generator replacement, management of complications; and EACVI document on detection of embolic sources that now recommends considering computed tomography and magnetic resonance imaging as additional methods for transthoracic and transesophageal echocardiography in evaluation of cardioembolic sources .

Canadian Cardiovascular Society and Canadian Heart Failure society released guideline update (4) on use of modern therapies as angiotensin receptor-neprilysin inhibitor (ARNI), sinus node inhibitor (ivabradine), sodium glucose transport 2 inhibitors (SGLT2) and soluble guanylate cyclase (sGC) stimulators in management of patients with heart failure (HF) with reduced ejection fraction. Society now recommends use of ARNI for most patients (as first line therapy ARNI or ACEI/ARB, followed by beta-blocker, mineralocorticoid receptor antagonist and SGLT2 inhibitor. Other key therapies include use of ivabradine, hydralazine/nitrates or digoxin, SGC stimulator vericiguat and their use with non-pharmacological therapy (4).

Several important trials were presented at recent ACC meeting in May 2021 (5). Among many, my few picks that I can mention in brief here are ATLANTIS, PARADISE-MI, HOPE-3 and LAAOS III (5). ATLANTIS demonstrated that apixaban is not superior to VKA if indicated in patients undergoing transcatheter aortic valve implantation, despite reduction of valve leaflet thrombosis. This study supports use of apixaban instead of VKA if latter is indicated to lower thrombotic events.

Interesting results of PARADISE-MI were presented: ARNI

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Received: 10.06.2021 **Accepted:** 10.06. 2021

(sacubitril/valsartan) did not reduce larger the primary end-point, though the rate was lower (cardiovascular (CV) death, HF hospitalizations, 11.9% vs 13.2%) in acute myocardial infarction (MI) population (ejection fraction <40%, acute MI and one of the following - age >70 years with or without pulmonary congestion, eGFR<60, diabetes mellitus, prior MI, ejection fraction <30%, Killlip class >3, ST –elevation MI without reperfusion) compared to ramipril. HOPE-3 study demonstrated that low dose statin (rosuvastatin 10 mg) was associated with 24% (HR – 0.76, p=0.002) reduction of composite outcome (CV death/MI/stroke) during 8.7 years of follow-up in a population with intermediate CV risk vs placebo, while blood pressure lowering therapy - candesartan plus hydrochlorothiazide was not effective in prevention of CV outcomes. The population in this study was without known CV diseases but with intermediate CV risk: men >55 years women>65 years and with at least one the following: elevated waist-to-hip ratio, history of low level high-density lipoprotein cholesterol, current or recent tobacco use, dysglycemia, family history of premature coronary disease or mild renal dysfunction and women with at least 2 risk factors. LAAOS III trial found surgical atrial appendage occlusion beneficial on background of anticoagulation in reducing ischemic stroke/ systemic embolism in patients with AF and elevated risk of stroke undergoing open heart surgery with cardiopulmonary bypass versus no occlusion.

Large steps have been taken in pandemics – vaccination are being rolling with more vaccines available and approved now by WHO, CDC, EMA (6-8), though we are facing some new variants, differing in transmissibility and disease severity (UK B.1.1.7-alpha, South Africa B.1.351 -beta, Brazil P1-gamma, India B 1.617.2-delta) bringing an upsurge in several countries, and rare complications. However, emerging evidence, registry studies on vaccinated people shows that vaccines provide a good efficacy confirming results of trials and they are also effective against mutations (9-11). The recent upsurge in India has brought to our attention - mucormycosis, a rare complication developing in patients with COVID-19, diabetes and inappropriate use of dexamethasone (12).

We have now evidence available on COVID sequelae we have been concerned about, pulmonary and cardiovascular consequences - 4-6 months follow-up studies after COVID-19 that looked at hospitalizations and death rate (13, 14). In a study of 73 435 non-hospitalized and 13 645 hospitalized patients with COVID-19 authors demonstrated a 1.46 times higher risk of death and increased hospitalizations during 6 months with respiratory, CV and other conditions in COVID-19 patients as compared to patients without COVID-19. Similar data were obtained when comparing to seasonal influenza. Excess in CV burden and hospitalizations after mild, moderate severe forms of COVID-19 were due to hypertension, arrhythmias, chest pain, HF, and coronary atherosclerosis (13). Recent analysis of 4 months follow-up after acute phase of about 250 000 patients with COVID-19 demonstrated increased risk of hospitalizations with respiratory failure, arrhythmias, diabetes, myocarditis, hypercoagulability after acute disease, risk was higher in older age patients with comorbidities, though younger adults were also at risk (14). These studies testify that COVID-19 is associated with poorer prognosis than seasonal influenza, CV hospitalizations may be due to new onset but also due to worsening of pre-existing conditions.

In one study of >6000 hospitalized patients with COVID-19 without pre-existent CV disease or risk factors, HF developed in 0.6%, among them 22% did not have CV disease history, 38% had history of CV disease and 40% at least had 1 risk factor (15). Patients with new onset of HF were younger, male and with low body mass index. Autopsy and early magnetic resonance imaging (MRI) studies in athletes suggested development of myocarditis, though analysis of later MRI studies reported myocarditis like changes occurred in less than 1% (16). Further multidisciplinary follow-up studies are needed.

We are glad to welcome our new Editorial Board members - Dr Francesco Perone from Carsito, Italy, he will be responsible for evaluation of studies on cardiac imaging: echocardiography, cardiac CT and MRI and Prof. Borys M.Todurov from Kyiv, Ukraine - a well-known expert on cardiovascular surgery. We look forward for our collaboration.

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Editor-in-Chief

Heart, Vessels and Transplantation

Conflict of interest: None to declare

Peer-review: Internal

Authorship: G.K.

Acknowledgement and funding: None to declare

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