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<https://doi.org/10.1016/j.jacl.2021.02.002>

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Collateral damage of the COVID-19 pandemic on the management of homozygous familial hypercholesterolemia



With our 20-year of experience on lipoprotein apheresis (LA),^{1,2} we fully agree with Vuorio et al's comment³ regarding the vital role of continued LA in homozygous familial hypercholesterolemia (HoFH) patients during the COVID-19 pandemic. Our recent survey⁴ was conducted to determine the collateral damage that the pandemic caused to provide insight to the impact of COVID-19 outbreak on lifestyle, anxiety levels, and management of HoFH in terms of LA and lipid-lowering therapy (LLT). The results of our descriptive survey depicted that management of patients with HoFH with regard to heart-healthy lifestyle and access to LA has significantly deteriorated during the pandemic even in a country where LA is full reimbursed and widely available.^{4,5} Our study revealed that although LA was accessible in most of the centers throughout the country during the pandemic, most of the patients (75%) were not attending their LA sessions due to fear of contracting coronavirus.⁴

LA is not only the most effective means of low-density lipoprotein cholesterol (LDL-C) lowering, but also effectively decreases the number of inflammatory proteins including cytokines and thrombogenic factors and improves endothelial function.^{2,6,7} LA also has impact on gene translation and transcription by affecting cytokine receptor functions.⁸ Therefore, apheresis is also used as a therapeutic modality in patients with a cytokine release storm during the course of COVID-19.⁹ However, LA is a hospital or healthcare center dependent treatment that can be easily disrupted by a disaster as we experienced during the COVID-19 pandemic either due to the overload of the medical system by COVID-19 patients or the reluctance of the patients to visit the hospital in fear of getting infected during the procedures.^{1,4} Even patients with acute coronary syndromes have avoided admitting to hospital during the pandemic as several reports have shown all over the world.^{10,11} We demonstrated that many HoFH patients could not get access to LA therapy during the pandemic exposing them to increased risk of cardiovascular events.⁴ It is well established that the on-treatment LDL-C level is the major determinant of survival in HoFH.¹² Therefore, we emphasize in our paper the importance of continued regular effective therapy. Moreover, as we mentioned in our manuscript the role of National Scientific Societies and, more importantly, patient organizations is vital for increasing the awareness of

patients, physicians, and public on the importance of LA and effective LLT in HoFH patients. Social media could be very powerful in overcoming patient/public fear of contracting the coronavirus leading to medical care avoidance. Our findings also denoted the importance of being in contact with the patients and providing the necessary information in terms of telemedicine for adherence to the therapy.

In addition to apheresis, access to new effective LLT provided via randomized controlled trial enrollment was also hampered by the pandemic. Fortunately, access to novel LLT was uninterrupted because the Ministry of Health took precautions to overcome this by home-delivery of medications (and care) and complete visits by telemedicine.

Since the publication of our paper, we have conducted educational programs with patient organizations such as FH Europe as well as the Ministry of Health to raise awareness. This has resulted in a slow but consistent increase in the number of patients seeking healthcare. This experience has taught us how to handle the different aspects and collateral damages of the pandemic.

Conflict of interest

LC, OKT and SP have no conflicts of interest. MK has received honoraria (for lectures and consultancy) from Abbott, Actelion, Astra-Zeneca, Abdi Ibrahim, Aegerion, Bayer Schering, Menarini, Sanofi Genzyme and Pfizer, and research funding from Aegerion, Amyrt Pharma, Amgen, Pfizer, and Sanofi and has participated in clinical trials with Amgen, Bayer Schering, Sanofi, and for the last 3 years. LT has received honoraria/consultancy fees from Abbott, Actelion, Amgen, Bayer, Daiichi-Sankyo, MSD, Mylan, Novartis, Novo Nordisk, Sanofi, Servier, Pfizer, Recordati and research funding from Amgen.

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<https://doi.org/10.1016/j.jacl.2021.02.003>

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