

Effects of COVID-19 lockdown strategies on management of atrial fibrillation

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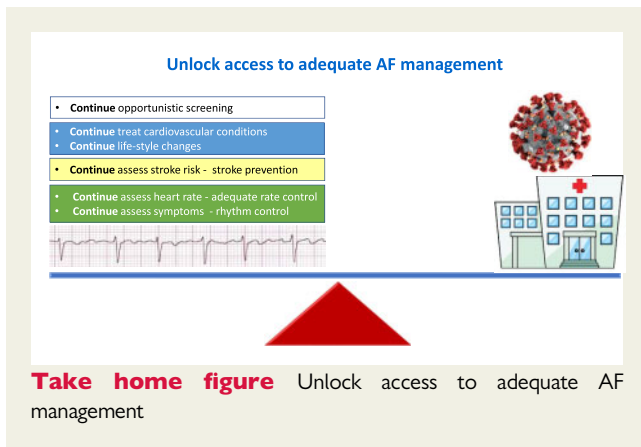
This editorial refers to ‘New-onset atrial fibrillation: incidence, characteristics, and related events following a national COVID-19 lockdown of 5.6 million people’, by A. Holt et al., doi:10.1093/eurheartj/ehaa494.

The coronavirus disease 2019 (COVID-19) has over the last few months spread widely across the world, affected >216 countries with nearly 9 million confirmed cases, caused >450 000 deaths,¹ and afflicted global finances and healthcare systems severely. On 11 March 2020, COVID-19 was declared a pandemic by the World Health Organization (WHO).¹ COVID-19 is a devastatingly lethal respiratory illness with reported mortality rates between <1% and >10%, many times higher than that of seasonal influenza and even higher for elderly patients and patients with comorbidities,^{2,3} although rates continuously change as more data are collected.^{4,5} Advice on preventing further spread of COVID-19 announced by various bodies such as the WHO and US Centers for Disease Control and Prevention (CDC) includes avoid travelling, avoid contact with symptomatic individuals, stay home and self-isolate even with minor symptoms, and, if seeking medical care, call by phone in advance of turning up at medical services.¹ To further limit transmission of the disease in the community, governments all over the world have enforced restrictions on outdoor activities by closing schools and universities, commercial enterprises, sports facilities, and the transportation industry, and employees have been asked to work from home.

Denmark has, like many other countries, implemented a ‘lockdown strategy’ to restrict further spread of the virus in the community. In this issue of the *European Heart Journal*, Holt et al. report on new-onset atrial fibrillation (AF) following COVID-19 lockdown of 5.6 million people in Denmark.⁶ The study provides the first evidence

of a 47% nationwide decline in registrations of new-onset AF during the first 3 weeks of lockdown (March 2020) compared with the previous year. The report is timely and the authors’ finding of a lower incidence of newly diagnosed AF during this COVID-19 lockdown period may have several explanations and is important to pay attention to them in order to ensure continued delivery of adequate healthcare even during pandemic conditions.

Although the possibility exists that the true incidence of AF simply is lower during major societal incidents such as the COVID-19 pandemic and that it may be a real drop in new-onset AF, the authors suspect and fear that it rather reflects a large group of undiagnosed and thereby probably untreated AF patients. This is supported by the observation of a lower number of ST-segment elevation myocardial infarction (STEMI) patients seeking emergency care⁷ and longer times from symptoms to first medical contact as compared with the pre-pandemic era,⁸ which may be related to avoidance of medical care due to social distancing or concerns of contracting COVID-19 in hospital. A reluctance to seek medical care may thus also explain the lower number of registered new-onset AF patients. Such a change in the public behavioural pattern is in line with the initial recommendations by authorities and healthcare providers not to burden the healthcare system within the first 3–4 weeks of lockdown. The elderly and those with cardiovascular comorbidities in particular were instructed early on not to seek medical care unless for urgent conditions in order to limit their exposure to potentially infected individuals in hospitals and to limit the depletion of protective equipment reserves.⁹ Such restrictions during lockdown inevitably also lead to a reduction in opportunistic screening which, as emphasized by the authors, limits the possibility of early AF detection with lower incidence of new-onset AF and potentially withholds adequate treatment from higher risk patients. Moreover, the increased social isolation may lead to more food and alcohol consumption and less physical activity, both of which are risk factors for AF occurrence, suggesting that an even larger group of AF patients may remain



undiagnosed. The reduced access to social support systems may further increase mental illnesses, also affecting cardiovascular disease states.¹⁰ Another important issue is that patients diagnosed in general practices or other healthcare contacts outside the hospital system were not registered, a limitation that may have accounted for some of the decline in the registration of new-onset AF.

If the lower number of new-onset AF reflects a true underdiagnosis of AF and is maintained for several weeks even after encouraging people to seek medical aid for cardiovascular symptoms, a prolonged lockdown may eventually lead to delayed and default management of AF patients. As emphasized by the authors, such a prolonged lockdown could potentially translate into significantly poorer outcomes for undiagnosed AF patients during this COVID-19 pandemic than reported in the present study. This fear is supported by the growing evidence that treatment of STEMI patients has become compromised by the exponential requirement of healthcare resources that has forced healthcare and governments to rapidly re-allocate many of the resources for high-risk COVID-19 patients requiring hospitalization.³ At the same time, the routine care of cardiovascular patients with continued standards of care and dedicated preventive measures cannot be neglected.¹¹ The lower number and the markedly worse conditions of STEMI patients when arriving for emergency care may well explain the more complicated in-hospital course and worse outcomes as compared with the pre-pandemic era in these patients.^{7,8} The same clinical consequences of the pandemic could be expected for AF patients. The study by Holt *et al.*, however, reported no significant increase in stroke or mortality in patients with new-onset AF during lockdown: 30 (5.3%) patients suffered an ischaemic stroke and 15 (2.7%) died, compared with 45 (4.3%) and 14 (1.3%) patients during the corresponding period a year earlier, respectively. Even though patients diagnosed during lockdown were younger and with lower CHA₂DS₂-VASc score, heart failure, vascular disease, and particularly cancer were more prevalent, all of which may have contributed to the non-significant but numerically higher all-cause mortality during lockdown, as illustrated in their figure 1B. Stroke did not increase significantly during lockdown and is usually not a major cause of death, accounting for <5% of all-cause mortality in general AF populations,¹² which is consistent with registry data showing that heart failure and particularly cancer are among the most common causes of death in the general AF population.¹² Even though ischaemic stroke was not significantly increased in relation to new-onset AF during the

lockdown, it raises concerns, as pointed out by the authors, as the proportion seems to increase during the weeks of lockdown despite the fact that these patients were younger and had lower CHA₂DS₂-VASc score (their Supplementary figure 1). The authors' concerns of appropriate management of AF patients with hospital contacts are appropriate and of utmost importance as a potentially higher proportion of AF patients may have related ischaemic stroke compared with the AF patients diagnosed during the corresponding weeks in the pre-pandemic period.

It is of great importance to recognize that pandemic situations such as COVID-19 may indirectly adversely affect the outcome of several cardiovascular diseases related to changes in human behaviour and healthcare resource allocation which potentially may cause treatment delays.¹³ Scientific societies and health authorities are therefore encouraged to promote campaigns targeting public awareness to seek healthcare when needed.

Physicians have been instructed to replace healthcare visits by video consultations and provide medical information via websites or mobile apps,¹⁴ all of which have been promoted and scaled up to prevent further spread of the disease with the belief of providing as safe and accessible healthcare as possible.¹⁵ The authors accordingly encourage hospitals and general practitioners to consider the use of telemedicine along with targeted screening processes such as personal ECG devices. Although many such new alternatives relying on digital solutions have been introduced during this ongoing pandemic, many countries lack regulatory frameworks to authorize, integrate, and reimburse telemedicine services. Moreover, since their efficacy and safety have yet to be validated, particularly in emergency and outbreak situations,¹⁶ further studies are required before such technologies can be fully implemented and recommended in clinical routine for an optimal management of AF patients.

The cardiology community needs to acknowledge the importance of balancing an escalating pandemic and ensure an adequate management of cardiovascular conditions (*Take home figure*) while carefully evaluating the safety of new technologies adopted to improve continued surveillance of patients with known cardiovascular diseases.

Conflict of interest: C.B.L. has received honoraria for invited lectures and/or Advisory Board expert roles from Medtronic, Bayer, MSD, and Boston, outside this submission.

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