



Cardiovascular service innovation, intersectionality, and the challenges of COVID-19

James M. Beattie

Cardiovascular disease and cancer are common, and together account for most morbidity and mortality in Westernised societies. The incidence of both heart failure and cancer increases with ageing of the population. However, some have posited that the heart failure state in itself may promote tumorigenesis, and it has been noted that a greater number of heart failure patients, surviving longer in response to more effective guideline-directed medical therapy, are dying of cancer [1,2]. We must also be mindful of the increased risk of *de novo* malignancy after cardiac transplantation, these effects secondary to immunotherapy, and determining the need for systematic long-term surveillance [3]. However, the relationship between cardiovascular disease and cancer is bidirectional, and the association between the treatment of cancer and cardiac dysfunction is well established, perhaps epitomised in our long-standing awareness of anthracycline-induced cardiomyopathy, or the adverse effects of early mantle radiotherapy protocols [4,5]. In recent years, as approaches such as vascular endothelial growth factor inhibition and other targeted therapies have come into play, in addition to left ventricular dysfunction, evidence has accumulated relating to other unfavourable cardiovascular sequelae including new onset or worsening hypertension, accelerated atherogenesis, pro-arrhythmia in QTc prolongation, and higher rates of arterial and venous thrombosis [6]. Such consequences have driven the establishment of the sub-speciality of cardio-oncology, focused on minimising the adverse cardiovascular effects of cancer treatments and optimising cancer therapeutics in those with preexisting cardiovascular disease. These cardioprotective efforts are described in recent clinical practice guidelines from the European Society of Cardiology and the American Society of Clinical Oncology [7,8]. Clearly, relevant to the provision of palliative and supportive care, in this journal section Alexander Lyon and colleagues (pp. 134–140) present an elegant review of this emerging discipline.

Following this, Alex Clark and co-authors (pp. 141–146) argue that heart failure research should be undertaken through the prism of intersectionality, a term first coined in 1989 [9]. This approach requires

us to go beyond constructs employing relatively simple clinical profiling related to conventional metrics and demography to accommodate a broader multiaxis framework of frequently interacting socio-cultural factors. These might include age, gender identity, sexual orientation, race and ethnicity, cultural norms, educational attainment, housing, economic and migration status. People with heart failure who are aligned to marginalised groups or otherwise socially disadvantaged, may be subject to one or more discriminatory stressors affecting their social capital and contributing to poorer outcomes. Based on the World Health Organisation's definition of social determinants of health as '*the circumstances in which people are born, grow up, live, work, and age...and the systems put in place to offer healthcare and services to a community*', a recent American Heart Association Scientific Statement has endorsed the need to address such disparate issues with respect to the delivery of heart failure care, highlighting that the provision of palliative care support to relatively under-privileged populations is often lacking [10]. A systematic review has demonstrated a similar inequity of access to good end-of-life care by people of low socioeconomic standing living in high-income countries, those affected defaulting to a greater use of acute medical services through their last year of life [11]. Incorporating intersectionality as a research paradigm to explore their lived experience and social context might allow us to be more attentive to the commonalities and differences influencing the well-being of those living and dying with heart failure, informing and improving care delivery.

Intersectionality is also highly relevant to the COVID-19 pandemic that has disproportionately affected those already rendered vulnerable by structural inequality [12,13]. As of February 2021, more than a year after the first appearance of acute

Cicely Saunders Institute, King's College London, London, UK

Correspondence to Dr James M. Beattie, Cicely Saunders Institute, King's College London, Bessemer Road, London SE5 9PJ, UK.
Tel: +44 20 7848 5516; e-mail: jmbbeattie@hotmail.com

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respiratory syndrome coronavirus 2 (SARS-CoV-2), this extraordinary pandemic continues to threaten lives, societies and economies on a global scale. COVID-19 has destabilised even highly developed healthcare systems that have had to flex in attempting to care for surges of seriously ill and dying patients. In the third review of this section, we draw attention to the challenges this virulent disease poses to the provision of palliative and supportive care, a clinical imperative for those with heart failure and other cardiovascular conditions who are at substantial risk from this novel coronavirus [14]. The necessary prioritisation of resources in response to the direct effects of COVID-19 has required reconfiguration of both cardiology and palliative care services, with the redeployment of personnel to support the treatment of those infected. However, the pandemic might also be viewed as the basis of disruptive innovation, the avoidance of contagion prompting the adoption of telehealth solutions as a scalable option by both specialities to help maintain clinical activity. The care for those with suspected or confirmed infection has had to be confined within a *cordon sanitaire*, empathetic interaction further hampered by the mandated use of personal protective equipment. The need for isolation has significantly affected patients and families, denying them the opportunity of face-to-face mutual support, even in the dying phase, and increasing the risk of complicated bereavement. At times this enforced isolation has also restricted the meaningful contribution of families to the process of shared decision-making. The clinical course of COVID-19 in those with cardiovascular disease is highly unpredictable, with sometimes rapid changes in clinical status requiring urgent decisions on ceilings of care and resuscitation. Much of the burden of that decision-making has been shouldered by the responsible clinicians, who have had to make difficult calls on the most appropriate use of scarce assets such as intensive care beds, or if the dominant clinical policy should transition to palliative care [15,16]. Such ethical dilemmas have sapped the reserves of these healthcare professionals, and this review emphasises the need to develop measures to support their resilience and avoid moral distress and burnout [17].

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