

## Editorial

An ageing population and increase in life expectancy means more people are living with illnesses such as cancer and dementia (Office for National Statistics (2018). Improvements in cancer diagnosis and treatment have resulted in cancer survival rates in the UK doubling over the last 40 years (Cancer Research UK). The Global Burden of Disease Centre analysis (2019) reported that between 2010 and 2019, the incidence of new cancer diagnoses increased by 23.6%. Thankfully, advances in treatment modalities have resulted in improved survival rates both nationally and internationally (Office for National Statistics 2019, Chang et al. 2017a, Baili et al. 2015, Anker et al. 2019), and in the UK cancer survival is at an all-time high (NHS 2019). However, there is clear evidence that cancer patients are at an increased risk of cardiovascular complications linked to some of the treatments they receive, and subsequently their risk of death from cardiovascular disease is higher than the general population (Sturgeon et al 2019).

The need for specialist cardiac support and treatment of oncology patients has resulted in the relatively recent development of the subspeciality of cardio-oncology. Dobson et al (2021 p2) state that “cardio-oncology services aim to reduce cardiovascular morbidity and mortality in patients with cancer or following cancer treatment”

Cancer therapy related cardiac dysfunction (CTRCD) affects a significant number of patients with varying severity and related to variables such as type of treatment, dose and cumulative effect, patient age and co-morbidities. (Chang et al. 2017a, Chang et al. 2017b, Zamorano et al. 2016). The number of patients needing cardio-oncology intervention appears commensurate with the number of cancer survivors and it is therefore likely to rise substantially over the coming years. CTRCD manifests in a variety of cardio-toxic ways including but not exclusively, left ventricular dysfunction, heart failure, hypertension, cardiomyopathy and arrhythmias (Curigliano et al., 2016). Cancer treatments causing CTRCD include radiotherapy, some common chemotherapy drugs, and the newer immunotherapy treatments (Curigliano et al., 2016; Asnani, 2018; Jerusalem, Lancellotti and Kim, 2019). Anthracyclines and trastuzumab (Herceptin) are the most commonly used treatments associated with serious cardiotoxicity (Teske et al., 2018), and . Zamorano et al (2020) identify that trastuzumab has contributed to left ventricular dysfunction in up to 20% of patients. They go on to discuss how fluoropyrimidines, commonly used for gastrointestinal, breast and head and neck cancers, can also cause significant cardiac complications.. A meta-analysis of randomised trials and cohort studies of 29,000 women with breast cancer by Mantarro et al. (2016) found that patients treated with trastuzumab are up to 5 times more likely to develop severe cardiac complications than patients not receiving this drug. This risk increases with the age of the patient and may be related to age alone or age combined with other co-morbidities such as diabetes or history of cardiac disease. Though extensive research continues into the safest way of using these drugs in relation to dose and length of time for treatment delivery, Chang et al (2017a) conclude the evidence suggests there is no risk-free dose.

A Task Force of the European Society of Cardiology (ESC) has produced extensive guidance for the management of patients suffering the cardiac side effects of cancer treatments, including heart failure (Zamorano et al. 2016). In a subsequent paper, the same team, (Zamorano et al., 2020) provided an overview of current management strategies and identified unmet needs in cardio-oncology. More recently still, evidence of the ongoing work to improve management of patients receiving therapies known to cause cardiac complications has resulted in the publication of ‘A Guideline for Transthoracic Echocardiographic Assessment of Adult Cancer Patients Receiving

Anthracyclines and/or Trastuzumab' (Dobson et al 2021) illustrating the commitment to improving outcomes for the patients affected. The benefit of cardio-oncology as a speciality is discussed by Andres et al (2022) in their review of the evolution of the first cardio-oncology service over a 10-year period. They note the increase in oncology patients referred for pre assessment screening rather than when symptoms have manifested. This approach gives cardiologists greater opportunity for treating cardiotoxicity and balancing the risks and benefits of cancer treatments at the outset.

However, whilst the improvements in management of CTRCD are reassuring, as yet there is no consideration of the emotional or psychological needs of patients or how these cardiac complications impact patients' lives. Mamas et al. (2017 p1101), described heart failure as being, "as 'malignant' as some of the common cancers" and Taylor et al. (2019) recently reported that only 48% of heart failure patients survive beyond five years. This illustrates the harsh reality of heart failure, just one type of CTRCD, as both a morbid and palliative condition to be dealt with following survival from cancer. Patients can be presented with the awful reality that their treatment for cancer has contributed to another life limiting condition or that it must be interrupted or withdrawn (Hamo et al 2017)

There are numerous studies exploring patients' experiences of living with heart disease. Mahoney-Davies et al. (2017), Hopp et al. (2012), Olano-Lizarraga et al. (2020) and Gowani et al. (2017) all used qualitative approaches to gain an understanding of the patient experience of living with heart failure. The authors report patients needing to adjust to a new normality, strategies for coping, new identity, and absorbing health care into daily life. In addition, several authors have explored patients' experiences of living with cancer. Jakobsson, Idvall and Kumlien (2017) explored how patients adjust to life after their surgery. Esteves, Roxo and da Conceição Saraiva's work (2015) explored the experiences of patients living with advanced cancer. Studies by Threader and McCormack (2016), McTiernan and O'Connell (2015) and McGrath (2013) all discuss patients redefining normality and adjusting to change in some sense, a theme shared with those living with heart failure.

The findings of these studies are currently used to inform numerous cardiac and cancer nurse specialist roles, however, participants in these disease specific studies are adapting to a diagnosis for the first time, whereas those suffering CTRCD are navigating the psychological and emotional journey of a life limiting condition for a second time. To support these patients, the cardio-oncology nurse role has been developed, a role that is argued to be an essential part of multi-disciplinary care (Michel, Rassaf and Totzeck 2019, Ghosh et al. 2017). However, without an appropriate evidence base the risk of unmet care needs is high. It is therefore contended that the recognition of the importance of care for both these groups of patients' needs extending to patients burdened with CTRCD

Until very recently, cardio-oncology patient perspectives were absent from the literature. However, in a recent study, White et al (2022) explored "patients' perceptions toward acceptability and feasibility of a cardio-oncology services and its impact on integrated care" Whilst covering a variety of topics using semi-structured interviews, the authors reported that patients valued an opportunity to talk about their experience. The NHS Long Term plan (2019) recognises the importance of providing better care for both cancer patients and those with cardiovascular disease. Furthermore, the plan recognises the importance of person-centred care, stating "what matters to someone' is not just 'what's the matter with someone'. However, it is difficult to provide care for patients without insight into their experiences, and the impact of these experiences on their lives. Without greater insight into the experiences and needs of this patient group, this sentiment becomes nothing more than rhetoric. We contend that it is essential to amplify the voices of patients and their carers so that future service delivery can be founded on the needs of this under-served and poorly understood patient group.

## References

- Andres M., Murphy T.M., Poku N., Nazir S., Ramalingam S., Chambers V., Rosen S.D., Lyon A.R. Cardio-Oncology: a medical specialty in constant growth and evolution. the 10-year experience of the first cardio-oncology service in the United Kingdom. *ESC Congress 2022*
- Asnani, A. (2018) Cardiotoxicity of Immunotherapy: Incidence, Diagnosis, and Management. *Curr Oncol Rep*, 20 (6), 44.
- Anker S.M., Hadzibegovic S., Lena A., Belenkov Y., Bergler-Klein J., deBoer R.A., Farmakis D., von Haehling S., Lakobishvili Z., Maack C., Pudil R., Skouri H., Cohen-Solal A., Tocchetti C.G., Coats A.J.S., Seferović P.M., Lyon A.R. (2019) Recent advances in cardio-oncology: a report from the 'Heart Failure Association 2019 and World Congress on Acute Heart Failure'. *ESC Heart Failure*, 6:, 1140 – 1148, Online Wiley Online Library, DOI:10.1002/ehf2.1255
- Baili P., Di Salvo F. Marcos-Gragera R., Siesling S., Malone S., Santaquilani M., Micheli A., Lillini R., Francisci F. and the EURO CARE-5 Working Group (2015) Age and case mix-standardised survival for all cancer patients in Europe 1999–2007: Results of EURO CARE-5, a population-based study. *European Journal of Cancer* 51, pp.2120-2129
- Chang HM., Moudgil R., Scarabelli T., Okwuosa TM., Yeh ETH. (2017a) Cardiovascular Complications of Cancer Therapy: Best Practices in Diagnosis, Prevention, and Management: Part 1. *Journal of the American College of Cardiology* 70(20):2536–51. Elsevier.
- Chang HM., Okwuosa TM., Scarabelli T., Moudgil R., Yeh ETH. (2017b) Cardiovascular Complications of Cancer Therapy: Best Practices in Diagnosis, Prevention, and Management: Part 2. *Journal of the American College of Cardiology* 70(20):2552–65. Elsevier.
- Curigliano, G., Cardinale, D., Dent, S., Criscitiello, C., Aseyev, O., Lenihan, D. and Cipolla, C.M. (2016) Cardiotoxicity of anticancer treatments: Epidemiology, detection, and management: Cardiotoxicity of Anticancer Treatments. *CA: a cancer journal for clinicians*, 66 (4), 309-325.
- Dobson R., Ghosh AK., Ky B., Marwick T., Stout M., Harkness A., Steeds R., Robinson S., Oxborough D., Adlam D., Stanway S., Rana B., Ingram T., Ring L., Rosen S., Plummer C., Manisty C., Harbinson M., Sharma V., Pearce K., Lyon AR., Augustine DX; (2021) British Society of Echocardiography (BSE) and the British Society of Cardio-Oncology (BCOS). BSE and BCOS Guideline for Transthoracic Echocardiographic Assessment of Adult Cancer Patients Receiving Anthracyclines and/or Trastuzumab. *Journal of the American College of Cardiology Cardio-oncology*. 16;3(1):1-16.
- Esteves, A., Roxo, J. and da Conceição Saraiva, M. (2015) The lived experience of people with progressive advanced cancer. *British Journal of Nursing*, 24, S15-S21.
- Ghosh A.K., Manisty C., Woldman S., Crake T., Westwood M., Malcolm Walker J. (2017) Setting up cardio-oncology services *January Br j Cardiol* 2017;24(1)doi:[10.5837/bjc.2017.003](https://doi.org/10.5837/bjc.2017.003)
- Global Burden of Disease 2019 Cancer Collaboration. Cancer Incidence, Mortality, Years of Life Lost, Years Lived With Disability, and Disability-Adjusted Life Years for 29 Cancer Groups A Systematic Analysis for the Global Burden of Disease Study 2019. Kocarnik JM, Compton K, et al *JAMA Oncol*. 2022 Mar 1;8(3):420-444. doi: 10.1001/jamaoncol.2021.6987. PMID: 34967848; PMCID:

PMC8719276. 2019 A Systematic Analysis for the Global Burden of Disease Study 2019 JAMA Oncol 2022;8(3):420-444.

Gowani, A., Gul, R., Dhakam, S. and Kurji, N. (2017) Living with heart failure: Karachi exploratory study. *British Journal of Cardiac Nursing*, 12 (12), 586-592.

Hamo CE., Bloom MW., Cardinale D., Ky B., Nohria A., Baer L., Skopicki H., Lenihan DJ., Gheorghiade M., Lyon AR., Butler J. Cancer Therapy-Related Cardiac Dysfunction and Heart Failure: Part 2: Prevention, Treatment, Guidelines, and Future Directions. *Circ Heart Fail*. 2016 Feb;9(2):e002843. doi: 10.1161/CIRCHEARTFAILURE.115.002843. PMID: 26839395; PMCID: PMC4743885.

Hopp, F.P., Thornton, N., Martin, L. and Zalenski, R. (2012) Life Disruption, Life Continuation: Contrasting Themes in the Lives of African-American Elders With Advanced Heart Failure. *Social Work in Health Care*, 51 (2), 149-172.

Jakobsson, J., Idvall, E. and Kumlien, C. (2017) The lived experience of recovery during the first 6 months after colorectal cancer surgery. *Journal of Clinical Nursing (John Wiley & Sons, Inc.)*, 26 (23-24), 4498-4505.

Jerusalem, G., Lancellotti, P. and Kim, S.-B. (2019) HER2+ breast cancer treatment and cardiotoxicity: monitoring and management. *Breast Cancer Res Treat*, 177 (2), 237-250.

Mahoney-Davies, G., Davis, C., Glen, C., Clifton, C. and Salkovskis, P.M. (2017) Examining the emotional and psychological experiences of people with heart failure. *British Journal of Cardiac Nursing*, 12 (4), 192-198.

Mamas M.A., Sperrin M., Watson M.C., Coutts A., Wilde K., Burton C., Kadam U.T., Kwok C.S., Clark A.B., Murchie P., Buchan I., Hannaford P.C., Myint P.K.(2017) Do patients have worse outcomes in heart failure than in cancer? A primary care-based cohort study with 10-year follow-up in Scotland. *Eur J Heart Fail*. 2017 Sep;19(9):1095-1104. doi: 10.1002/ehfj.822. Epub May 3. PMID: 28470962.

Mantarro, S., Mantarro, S., Rossi, M., Rossi, M., Bonifazi, M., Bonifazi, M., D'Amico, R., D'Amico, R., Blandizzi, C., Blandizzi, C., La Vecchia, C., La Vecchia, C., Negri, E., Negri, E., Moja, L. and Moja, L. (2016) Risk of severe cardiotoxicity following treatment with trastuzumab: a meta-analysis of randomized and cohort studies of 29,000 women with breast cancer. *Intern Emerg Med*, 11 (1), 123-140.

McGrath, T. (2013) Irish insights into the lived experience of breast cancer related lymphoedema: implications for occupation focused practice. *WFOT Bulletin*, 68 (1), 44-50.

McTiernan, K. and O'Connell, M. (2015) An interpretative phenomenological analysis exploring the lived experience of individuals dying from terminal cancer in Ireland. *Palliative & Supportive Care*, 13 (3), 641-651.

Michel L., Rassaf T., Totzeck M. (2019) Cardiotoxicity from immune checkpoint inhibitors. *Int J Cardiol Heart Vasc*. Sep 7;25:100420. doi: 10.1016/j.ijcha.2019.100420. PMID: 31517036; PMCID: PMC6736791.

NHS (2019) The NHS long term plan. <https://www.longtermplan.nhs.uk/>

Office for National Statistics (2018) 2016 based England and Wales period life expectancies, 1948 to 2016.

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/adhocs/0085772016basedenglandandwalesperiodlifeexpectancies1948to2016>

Office for National Statistics (2019) Cancer survival in England: adult, stage at diagnosis and childhood - patients followed up to 2018. Online at [Cancer survival in England - Office for National Statistics \(ons.gov.uk\)](https://cancer-survival.nhs.uk/) Date accessed 1.12.22

Olano-Lizarraga, M., Zaragoza-Salcedo, A., Martín-Martín, J. and Saracíbar-Razquin, M. (2020) Redefining a 'new normality': A hermeneutic phenomenological study of the experiences of patients with chronic heart failure. *Journal of Advanced Nursing (John Wiley & Sons, Inc.)*, 76 (1), 275-286.

Sturgeon K.M., Deng L., Bluethmann S.M., Zhou S., Trifiletti D.M., Jiang C, Kelly S.P., Zaorsky N.G.(2019) A population-based study of cardiovascular disease mortality risk in US cancer patients. *Eur Heart J. Dec 21;40(48):3889-3897. doi: 10.1093/eurheartj/ehz766. PMID: 31761945; PMCID: PMC6925383.*

Taylor C.J., Ordóñez-Mena J.M., Roalfe A.K., Lay-Flurrie S., Jones N.R., Marshall T., Hobbs F.D.R. (2019) Trends in survival after a diagnosis of heart failure in the United Kingdom 2000-2017: population based cohort study. *BMJ. Feb 13;364:l223. doi: 10.1136/bmj.l223. Erratum in: BMJ. 2019 Oct 8;367:l5840. PMID: 30760447; PMCID: PMC6372921.*

Teske, A.J., Linschoten, M., Kamphuis, J.A.M., Naaktgeboren, W.R., Leiner, T., van der Wall, E., Kuball, J., van Rhenen, A., Doevendans, P.A., Cramer, M.J. and Asselbergs, F.W. (2018) Cardio-oncology: an overview on outpatient management and future developments. *Netherlands heart journal : monthly journal of the Netherlands Society of Cardiology and the Netherlands Heart Foundation*, 26 (11), 521-532.

Threader, J. and McCormack, L. (2016) Cancer-related trauma, stigma and growth: the 'lived' experience of head and neck cancer. *European Journal of Cancer Care*, 25 (1), 157-169.

White J., Byles J., Williams T., Untaru R., Ngo D.T.M., Sverdlov A.L. (2022) Early access to a cardio-oncology clinic in an Australian context: a qualitative exploration of patient experiences. *Cardiology* 8;14 <https://doi.org/10.1186/s40959-022-00140-3>

Zamorano J.L., Lancellotti P., Rodriguez Muñoz D., Aboyans V., Asteggiano R., Galderisi M., Habib G., Lenihan D.J., Lip G.Y.H., Lyon A.R., Lopez Fernandez T., Mohty D., Piepoli M.F., Tamargo J., Torbicki A., Suter T.M. (2016) ESC Scientific Document Group. 2016 ESC Position Paper on cancer treatments and cardiovascular toxicity developed under the auspices of the ESC Committee for Practice Guidelines: The Task Force for cancer treatments and cardiovascular toxicity of the European Society of Cardiology (ESC). *Eur Heart J. 2016 Sep 21;37(36):2768-2801. doi: 10.1093/eurheartj/ehw211. Epub 2016 Aug 26. Erratum in: Eur Heart J. Dec 24;: PMID: 27567406.*

Zamorano J.L., Gottfridsson C., Asteggiano R., Atar D., Badimon L., Bax J.J., Cardinale D., Cardone A., Feijen E.A.M., Ferdinandy P., López-Fernández T., Gale C.P., Maduro J.H., Moslehi J., Omland T., Plana Gomez J.C., Scott J., Suter T.M., Minotti G. The cancer patient and cardiology (2020) *Eur J Heart Fail. Dec;22(12):2290-2309. doi: 10.1002/ehfj.1985. Epub 2020 Oct 2. PMID: 32809231; PMCID: PMC8278961.*