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Cardiac Biomarkers during Cancer Therapy

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Introduction

Combination therapies for cancer treatment have significantly improved clinical outcomes. Simultaneously, there has been a greater focus on the acute, chronic and late effects of treatment, including the management of cardiac disease in cancer patients. Traditional cardiovascular tests, such as electrocardiography (ECG) and transthoracic echocardiography (TTE), are known to have low sensitivity and specificity for early detection of myocardial injury.

Elevated pre-chemotherapy cardiac biomarkers can detect underlying myocardial injury and stress, as well as aid in risk stratification and medical optimization before and during cancer therapy. NPs and troponin may detect congestion and injury during and after anthracycline-based cardiotoxic cancer therapy, regardless of detectable changes in LVEF.

Description

A biomarker must be accurate, easy to measure and provide important information about treatment outcome in order to be useful. A prognostic biomarker predicts the course of a disease regardless of treatment, whereas a predictive biomarker predicts the likely response to a specific treatment. It is critical to comprehend the clinical implications of an abnormal cardiac biomarker and how this information can be used to guide treatment decision [1].

Identifying the potential causes of psychological anguish and then resolving to take efforts to reduce or overcome it is the first stage in effective dealing with psychological distress. This may entail psychiatric counselling in order to identify the source of the psychological suffering. A psychiatrist, psychologist, or other mental health practitioner may recommend a variety of therapeutic treatments to assist relieve psychological discomfort as part of the counselling.

Blood cells are a great source of genomic materials as well as immune phenotyping. However, biomarkers derived from these sources may lack specificity for cardiac pathology and exhibit wide variability and poor reproducibility, owing in part to the multiorgan effects of cancer treatments [2]. Directly obtained biomarkers from cardiac tissue provide tissue-specific and physiologic information; however, these samples are frequently difficult to obtain due to procedural risk and cost. Cardiovascular cells derived from iPSCs are cardiac-specific, albeit immature. They can be cultured in a dish with an almost infinite supply of cells, allowing for serial collection without invasive procedures or additional clinical sampling.

Given the wide variation in interindividual susceptibility, genomic influence on the risk of cancer therapy-induced cardiotoxicity has been actively researched. Garcia-Pavia et al. sequenced putative DCM genes and discovered an increased prevalence of TTN-truncating variants in cardiotoxicity cases, hypothesising a shared genetic risk between DCM and cancertherapy-induced cardiotoxicity [3-5].

Conclusion

A genome-wide association study (GWAS) in 280 European ancestry patients treated with anthracyclines (32 cases, 248 controls) and identified a protein-altering variant in RARG that was highly associated with cardiotoxicity; findings validated in other cohorts and independently supported by investigations using patient-specific and genome-edited iPSC-derived cardiomyocytes.

Acknowledgement

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Conflict of Interest

There are no conflicts of interest by author.

References

1. Shiode, Nobuo, Nobuyuki Morishima, Kensyo Nakayama and Togo Yamagata, et al. "Flow-mediated vasodilation of human epicardial coronary arteries: effect of inhibition of nitric oxide synthesis." *J Am Coll Cardiol* 27 (1996): 304-310.
2. Alsaied, Tarek, Jouke P. Bokma, Mark E. Engel and Joey M. Kuijpers, et al. "Factors associated with long-term mortality after Fontan procedures: a systematic review." *Heart* 103 (2017): 104-110.
3. Alsoufi, Bahaaldin, Scott Gillespie, Dennis Kim and Kirk Kanter, et al. "The impact of dominant ventricle morphology on palliation outcomes of single ventricle anomalies." *Ann Thora Surg* 102 (2016): 593-601.
4. Alsoufi, Bahaaldin, Cedric Manlhiot, Abid Awan and Fadel Alfadley, et al. "Current outcomes of the Glenn bidirectional cavopulmonary connection for single ventricle palliation." *Eur J Cardiothorac Surg* 42 (2012): 42-49.
5. Anderson, Page A.W., Lynn A. Sleeper, Lynn Mahon and Steven D. Colan, et al. "Contemporary outcomes after the Fontan procedure: a Pediatric Heart Network multicenter study." *J Am Coll Cardiol* 52 (2008): 85-98.

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