of support provided to networks or teams by the CTSI, department or other institutional mechanism.

Percent Predicted Peak Exercise Oxygen Pulse Is a Marker of Cardiac Reserve Following Thoracic Radiotherapy

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OBJECTIVES/SPECIFIC AIMS: Cardiac radiation exposure following anti-cancer (CA) thoracic radiotherapy (RT) treatment increases risk of heart failure in a dose-dependent manner with a predominantly restrictive cardiomyopathy phenotype and is characterized by a diffuse fibrosis within the myocardium. The peak oxygen pulse (O2Pulse) determined at cardiopulmonary exercise testing (CPET) is the quotient of oxygen consumption (VO2) divided by the heart rate (HR) at peak exercise. Through deduction of the Fick equation (VO2 = cardiac output (CO) x arteriovenous oxygen difference) it provides a noninvasive estimate of the stroke volume response to exercise. Knowledge of the relationship between cardiac radiation dose and O2Pulse may provide mechanistic insight into the cardiac reserve of the CA survivor following thoracic RT. METHODS/ STUDY POPULATION: Patients without a history of cardiovascular disease with a history of thoracic RT for CA treatment with significant incidental heart exposure ($\geq$5 Gray (Gy) to $\geq$10% of the heart volume) underwent treadmill CPET to determine cardiorespiratory fitness and cardiac magnetic resonance (CMR) imaging to quantify central hemodynamics and for myocardial tissue characterization. The mean cardiac radiation dose (MCRD) and %volume of heart dose was determined from dose-volume histograms reflective of the dose contributions from all RT treatments for each patient. The oxygen pulse (milliliters (mL) of O2 per heart beat) was determined by dividing the absolute VO2 by the HR (beats per minute, bpm) at peak exercise and reported as %-predicted values to account for age and gender differences. Data are reported as number (%) or median (interquartile range). A stepwise multivariate linear regression model was created from significant univariate RT and CMR variables to determine independent predictors of %O2Pulse. RESULTS/ANTICIPATED RESULTS: Thirty patients (age = 63 [57-67] years, 18 [60%] female, 2.0 [0.1-28.7] years since completion of RT) underwent study procedures. The peak VO2=1376 mL·min-1 (62% of predicted) and peak HR = 150 (122-164) bpm resulted in a peak O2Pulse of 9.2 mL/beat (82% of predicted). The MCRD = 5.6 [3.7-17.8] Gy was inversely associated with %O2Pulse at univariate analysis (R = −0.514, p < .01), but was not retained at multivariate analysis. The CMR-derived CO ([4.9 (4.09-5.90) Liters/minute], β = +.374, p < .01), CMR-extracellular volume ([ECV, 26.9 (24.8-29.2)%], β = −.536, p < .01), and volume of the heart exposed to $\geq$30 Gy ([2.5 (0-15.0)Gy], (β = −.345, p = .01) were retained in the model (R2 = .709, F(3,19) = 15.438, p < .001) and were independent predictors of the %O2Pulse. DISCUSSION/SIGNIFICANCE OF IMPACT: In patients with significant heart exposure following RT, %O2Pulse (a surrogate of stroke volume response to exercise) is inversely associated with cardiac radiation dose and is related to central hemodynamics (CO) and markers of diffuse fibrosis (ECV).

Scientometric Analysis of the Puerto Rico Clinical and Translational Research Consortium (PRCTRC) Research Publications, 2010-2017

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OBJECTIVES/SPECIFIC AIMS: The objective of this study was to evaluate the impact of the research and the scientific collaborations as shown in research publication supported by the PRCTRC. METHODS/STUDY POPULATION: Manuscripts published from 2010 to 2017 were retrieved from the Science Citation Index database. Our search criteria included manuscripts: 1) with the PRCTRC grant number and 2) with a PMCID number. Scientometric indicators including h-index (HI), average citation (AC), collaboration coefficient (CC), collaboration index (CI) and degree of collaboration (DC) were calculated using the Web of Science Platform and Stata software for statistical inquiry. Joinpoint was used to calculate the annual percent change (APC). RESULTS/ANTICIPATED RESULTS: A total of 316 publications were identified from 2010-2017, with an average of 39.5 publications per year, and a total of 2,383 citing articles without self-citations. During this period a significant growth (APC = ¬15.3%, p < 0.05) of scientific production was observed. The overall HI was 28, and the AC per item was 9.31. Regarding collaboration, the overall CC was 0.82, the CI was 6.93, and the DC was 99.3. DISCUSSION/SIGNIFICANCE OF IMPACT: This study demonstrated that the PRCTRC scientific production increased statistically significantly. Application of the scientometric indicators allows the PRCTRC assess the research productivity and collaboration to design and implement interventions according to program experience and needs.

The CTSA Institutional website: A higher purpose - Researcher use of institutional Clinical and Translational Science Award (CTSA) website content to assess or promote NCATS CTSA Program Goals.

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OBJECTIVES/SPECIFIC AIMS: The objective of this research was to identify and evaluate published research articles that highlight the use of CTSA institutional websites as a research tool or data source for translational science research. METHODS/STUDY POPULATION: A multifaceted systematic search process was engaged for this literature review process using standard literature database searching, digital journal database searching, and pearl growing. All U.S. based studies and reports from 2006 through the present that addressed the application of websites of CTSA institutions for translational science purposes were included in this review. Identified articles were collected, organized, and analyzed using an excel spreadsheet. There were 2 different data collection and organization protocols, one for studies the other for reports. The first data collection protocol was for identified studies that used individual CTSA Institutional websites as a data source for a research topic. The organization processes for each relevant study article included a customized data extraction process that looked to identify