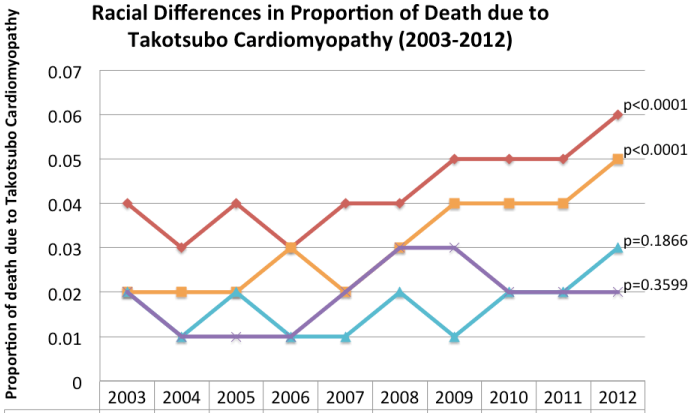
Takotsubo Cardiomyopathy Mortality: Racial Differences, Gender Association, and Trends from 2003-2012

Joanne Gomez, MD; Jiaqi Hu; Katie Hastings, MPH; Latha Palaniappan, MD; Annabelle Volgman, MD
Rush University Medical Center, IL, USA; Stanford University School of Medicine, CA, USA

Abstract (300 word limit)

Statement of the Problem: Takotsubo cardiomyopathy (TCM) is a syndrome characterized by left ventricular apical ballooning with similar presentation as myocardial infarction. Though TCM is known for female predominance and favorable prognosis, small studies have described mortality up to 3.2%, with males having worse prognosis. The purpose of this study is to determine the association of race and gender with TCM mortality. The study also aims to recognize possible health disparities among racial groups using longitudinal mortality trends. **Methodology:** U.S. mortality records from the National Center for Health Statistics (NCHS) from 2003-2012 were examined for adult deaths at ages ≥25 years (n=23,290,842) due to TCM, stratified by race (Asian, Black, Hispanic, White) and gender. Direct-standardized age-adjusted mortality rate (AMR) and proportional mortality ratio (PMR) were determined among the racial groups compared to Whites, and mortality due to TCM was trended longitudinally by year and race. Chi-square test was used to determine association between gender and TCM mortality in racial groups. **Results:** Takotsubo cardiomyopathy accounted for 0.018-0.043% of all-cause mortality from 2003-2012. Whites had the highest TCM mortality risk from both AMR and PMR (AMR: 2.5 times higher than Asian and 1.9 times higher than Hispanics; PMR: double the risk in Asians and Hispanics, and 27% more than Blacks). Subgroup analysis revealed a significantly increasing TCM mortality trend in Blacks ($p<0.0001$) and Whites ($p<0.0001$), but not among Hispanics ($p=0.1866$) and Asians ($p=0.3599$). No significant association between TCM mortality and gender was observed among all racial groups ($p=0.0634$). **Conclusions & Significance:** TCM is a rare cause of death, with increased mortality in Whites compared to Asians, Blacks, and Hispanics. The lack of proportionate increase in mortality trend in the Asians and Hispanics could represent underdiagnosis in these sub-populations. Gender did not play a role in TCM outcomes, in contrast to prior studies.

Graph



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
White	0.04	0.03	0.04	0.03	0.04	0.04	0.05	0.05	0.05	0.06
Black	0.02	0.02	0.02	0.03	0.02	0.03	0.04	0.04	0.04	0.05
Hispanic	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.02	0.02	0.03
Asian	0.02	0.01	0.01	0.01	0.02	0.03	0.03	0.02	0.02	0.02

Recent Publications

1. Wang Y, Xia L, Shen X, Han G, Feng D, Xiao H, et al (2015) A New Insight Into Sudden Cardiac Death in Young People: A Systematic Review of Cases of Takotsubo Cardiomyopathy. Medicine 94(32):e1174.
2. Dias A, Franco E, Koshkelashvili N, Pressman GS, Hebert K, Figueredo VM (2015) Racial and ethnic differences in Takotsubo cardiomyopathy presentation and outcomes. Int J Cardiol 194:100–3.
3. Nascimento FO, Santana O, Perez-Caminero M, Benjo AM (2011) The characteristics of stress cardiomyopathy in an ethnically heterogeneous population. Clinics (Sao Paulo) 66(11):1895–9.
4. Donohue D, Movahed M-R (2005) Clinical characteristics, demographics and prognosis of transient left ventricular apical ballooning syndrome. Heart Fail Rev 10(4):311–6.
5. Dias A, Franco E (2016) A position statement from the Taskforce on Takotsubo Syndrome of the Heart Failure Association of the European Society of Cardiology: What about racial differences? Eur J Heart Fail 18(3):337.
6. Brinjikji W, El-Sayed AM, Salka S (2009) In-hospital mortality among patients with takotsubo cardiomyopathy: a study of the National Inpatient Sample 2008 to 2009. Am Heart J 164(2):215–21.



Biography (150 word limit)

Joanne Michelle D. Gomez, M.D. is a third year Internal Medicine resident at Rush University Medical Center in Chicago, IL, USA. Her research interest is in the prevention and treatment of cardiovascular diseases that remain the No. 1 cause of mortality in both developed and developing nations. Her research focus is on cardiovascular disease risk assessment, women's health, and identification of high-risk populations. She is a strong advocate in increasing awareness on the prevalence of cardiac disease among women and racial minorities. One of her publications is a study on the genotype distribution of single-nucleotide polymorphisms associated with hyperlipidemia, proprotein-convertase subtilisin-kexin type 9 (PCSK9) and low density lipoprotein receptor (LDLR), and association with statins in the high-risk Filipino American Women; a work that has been presented in various national conferences in the United States.

Email: joannemichelle_d_gomez@rush.edu
Phone: +1-619-888-9840

Notes/Comments