

# Age-Related Variations in Takotsubo Syndrome

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## Authors

Cammann VL, Szawan KA, Stähli BE, Kato K, Budnik M, Wischnewsky M, Dreiding S, Levinson RA, Di Vece D, Gili S, Citro R, Bossone E, Neuhaus M, Franke J, Meder B, Jaguszewski M, Noutsias M, Knorr M, Heiner S, D'Ascenzo F, Dichtl W, Burgdorf C, Kherad B, Tschöpe C, Sarcon A, Shinbane J, Rajan L, Michels G, Pfister R, Cuneo A, Jacobshagen C, Karakas M, Koenig W, Pott A, Meyer P, Roffi M, Banning A, Wolfrum M, Cuculi F, Kobza R, Fischer TA, Vasankari T, Airaksinen KEJ, Napp LC, Dworakowski R, MacCarthy P, Kaiser C, Osswald S, Galiuto L, Chan C, Bridgman P, Beug D, Delmas C, Lairez O, Gilyarova E, Shilova A, Gilyarov M, El-Battrawy I, Akin I, Poledniková K, Toušek P, Winchester DE, Galuszka J, Ukena C, Poglajen G, Carrilho-Ferreira P, Hauck C, Paolini C, Bilato C, Kobayashi Y, Shoji T, Ishibashi I, Takahara M, Himi T, Din J, Al-Shammari A, Prasad A, Rihal CS, Liu K, Schulze PC, Bianco M, Jörg L, Rickli H, Pestana G, Nguyen TH, Böhm M, Maier LS, Pinto FJ, Widimský P, Felix SB, Braun-Dullaeus RC, Rottbauer W, Hasenfuß G, Pieske BM, Schunkert H, Borggrefe M, Thiele H, Bauersachs J, Katus HA, Horowitz JD, Di Mario C, Münzel T, Crea F, Bax JJ, Lüscher TF, Ruschitzka F, Ghadri JR, Opolski G, Templin C

## Abstract

### BACKGROUND:

Takotsubo syndrome (TTS) occurs predominantly in post-menopausal women but is also found in younger patients.

### OBJECTIVES:

This study aimed to investigate age-related differences in TTS.

### METHODS:

Patients diagnosed with TTS and enrolled in the International Takotsubo Registry between January 2011 and February 2017 were included in this analysis and were stratified by age (younger:  $\leq 50$  years, middle-age: 51 to 74 years, elderly:  $\geq 75$  years). Baseline characteristics, hospital course, as well as short- and long-term mortality were compared among groups.

### RESULTS

Of 2,098 TTS patients, 242 (11.5%) patients were  $\leq 50$  years of age, 1,194 (56.9%) were 51 to 74 years of age, and 662 (31.6%) were  $\geq 75$  years of age. Younger patients were more often men (12.4% vs. 10.9% vs. 6.3%;  $p = 0.002$ ) and had an increased prevalence of acute neurological (16.3% vs. 8.4% vs. 8.8%;  $p = 0.001$ ) or psychiatric disorders (14.1% vs. 10.3% vs. 5.6%;  $p < 0.001$ ) compared with middle-aged and elderly TTS patients. Furthermore, younger patients had more often cardiogenic shock (15.3% vs. 9.1% vs. 8.1%;  $p = 0.004$ ) and had a numerically higher in-hospital mortality (6.6% vs. 3.6% vs. 5.1%;  $p = 0.07$ ). At multivariable analysis, younger (odds ratio: 1.60; 95% confidence interval: 0.86 to 3.01;  $p = 0.14$ ) and older age (odds ratio: 1.09; 95% confidence interval: 0.66 to 1.80;  $p = 0.75$ ) were not independently associated

with in-hospital mortality using the middle-aged group as a reference. There were no differences in 60-day mortality rates among groups.

#### CONCLUSIONS

A substantial proportion of TTS patients are younger than 50 years of age. TTS is associated with severe complications requiring intensive care, particularly in younger patients.

#### **Keywords**

Age, broken, heart, syndrome, outcome, Takotsubo, syndrome