

Chronic total occlusion management in female patients: gender gap?

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Background: A gender gap has been known to exist in the clinical presentation, management and outcomes of coronary artery disease. Nevertheless, it is not well described how these differences pertain to the management of chronic total occlusion (CTO) of coronary arteries. The aim of this study was to compare sex-based differences in CTO management and long-term outcomes.

Methods: We included all consecutive patients with CTO diagnosed in an academic center between 2010 to 2014. There were no exclusion criteria. We collected demographic, clinical, and management data. All-cause and cardiac mortality were assessed during a median follow-up of 4.03 years (IQR 2.6–4.8).

Results: A total of 1248 consecutive patients (mean age 67.3±10.9 years; 23.5% females) with at least one CTO receiving either revascularization or optimal medical treatment (MT) were identified. The female group included 198 patients (23.5%). Women were older, had a higher prevalence of type 2 DM and a lower ventricle ejection fraction compared to their male counterparts ($p<0.05$). There were no differences in the number of CTOs depending on gender, but women had a higher Global SYNTAX II score (50 ± 12 vs 44 ± 22 ; $p<0.001$) compared to men. The female group had a higher positive result for ischemia or viability (90% vs. 77%; $P=0.04$) compared to the male group. Nevertheless, women were more often treated with MT alone compared to male patients (57% vs 49%; $P=0.04$), who were more likely

to undergo PCI or surgery. There were no significant differences in CTO revascularization success between both groups (30% vs. 24%; $P=0.40$). During a median follow-up of 4.03 years (IQR 2.6–4.8), a total of 386 (31%) patients died. Women presented a higher rate of all-cause mortality in both MT and revascularization groups (52% vs. 39% and 17% vs 16%, respectively; $p<0.001$) compared to men. Although cardiac mortality was lower in the revascularized patients, it was significantly higher in women compared to men, regardless of CTO treatment strategy (37% vs. 23% and 11% vs 8%; $p<0.001$ for both). Multivariable analysis identified that female gender was associated with higher rates of cardiac mortality [OR 1.67, 95% confidence interval (CI) (1.10–2.57), $P<0.001$, but not with all-cause mortality [OR 1.37, 95% confidence interval (CI) (0.92–2.02), $P=0.1$]. Age, peripheral vascular disease, chronic kidney disease, the ACEF score, the Global SYNTAX I score, and MT of the CTO were also independent predictors for all-cause and cardiac mortality.

Conclusions: In our cohort, female patients with a CTO were significantly older and presented more prevalence of diabetes mellitus. Women with CTO were more often treated with MT alone, compared to their male counterparts, who were more likely to undergo invasive strategies - PCI or surgery. Female gender was associated with higher cardiac mortality on our cohort regardless of CTO treatment in a long-term follow-up.

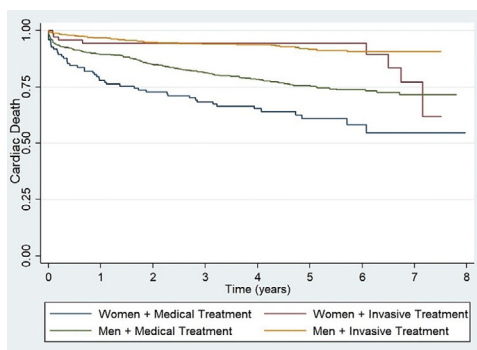


Figure 1 Cardiac Survival Rates