Open thoracoabdominal aortic aneurysm repair: Is there a “sex problem”?

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Disclosures: Authors have nothing to disclose with regard to commercial support.

Received for publication May 27, 2017; accepted for publication May 31, 2017; available ahead of print June 27, 2017.

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J Thorac Cardiovasc Surg 2017;154:1215-6

0022-5223/\$36.00

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<http://dx.doi.org/10.1016/j.jtcvs.2017.05.098>

Open surgery of thoracoabdominal aortic aneurysm (TAAA) remains one of the most stimulating “challenges” in the cardiovascular field. It is also well known that women typically have worse outcomes than men after many cardiac surgery procedures, especially when operative complexity and invasiveness increases, as in TAAA surgery.¹

In this issue of the *Journal*, Spiliotopoulos and colleagues² reported the largest experience (1986-2015) on TAAA open repair ever published before, seeking to determine whether sex impacts outcomes. Two questions were asked: (1) is the disease presentation different between men and women? (2) Does sex itself appear to influence outcomes?

The authors have clearly addressed both issues. In the overall group (unmatched 3353 consecutive patients), they identified several significant differences between men and women in preoperative and intraoperative characteristics. One striking difference was the significantly greater incidence of chronic dissection in men compared with the increased prevalence of degenerative, nondissection aortic aneurysms in women. The study has also highlighted how men had a greater prevalence of associated pathologies and bicuspid aortic valve disease, whereas women were older, more often symptomatic, and current smokers. This finding could be roughly merged in the algebraic equation “arterial hypertension/bicuspid valve stay at aortic dissection in men as smoking/age stay at degenerative aneurysm in women.”

To address the second important issue of the study about the effective impact of sex on the outcomes of TAAA repair, the authors performed an accurate propensity score analysis (including more than 50 preoperative and intraoperative variables), which resulted in the identification of well-matched sex pairs. To be fair, the overall results were not original because we already know the excellent results of the Houston experience.³ However, the idea of using a strong propensity matching in more than 3000 patients set once again a “benchmark”⁴ for sex-specific outcomes on TAAA repair. Early- and long-term outcomes

were equivalent: women and men had comparable early mortality (7.2% vs 7.0%, $P = .8$) and adverse event rates (14.6% vs 13.5%, $P = .5$). Indeed, predictive factors of early mortality and postoperative complications are other than the specific “sex.” As expected, the risk of adverse events is greatest among those patients with ruptured aneurysms, symptoms, extensive aneurysmal disease, older age, impaired renal function, prolonged aortic clamp time, and use of hypothermic circulatory arrest. In contrast, if the patients will arrive scheduled to the operation in healthy condition, the chances to achieve better results are much greater.

However, we also should keep in mind that the current paper is a retrospective series with all related limitations that cannot be completely addressed by a propensity matching. “There is still room for improvement,”³ and prospective randomized studies on this field will fill the gap.

To conclude, there is an extremely important Greek phrase by Plato that can summarize the issue raised by the authors “Are outcomes of thoracoabdominal aortic aneurysm repair different in men versus women?” It is “kalòs kai agathòs” (the good lays in the beauty), which, applied to the current subject, means that if patient’s conditions are good enough for this complex operation, the results would be fairly satisfying regardless of sex.

Portrait bust of Plato (427-347 BC) at Musei Capitolini in Rome.

Central Message

Open thoracoabdominal aortic aneurysm repair is still associated with not-negligible mortality and morbidity. However, sex does not seem to affect early- as well as long-term outcomes.

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