

Carotid Hemodynamics after CAS: Are There Gender Differences?

NOTES

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Purpose

Gender differences have been demonstrated in blood-flow velocities by duplex ultrasonography (DU) in patients with carotid stenosis. Currently, DU is the most widely used method of follow-up monitoring after carotid angioplasty and stenting (CAS). To identify possible gender differences in carotid flow velocities, we analyzed our experience with DU obtained before and immediately after CAS.

Methods

In a series of 47 CAS procedures over a 21?2-year period performed in 31 men and 15 women, carotid angiograms and duplex flow velocities were obtained preoperatively and within 24 hours after CAS. Carotid velocity profiles were compared with the angiographic degree of carotid stenosis. Gender differences in blood velocities were assessed using parametric and nonparametric statistical tests.

Results

Overall, women had median blood velocities 5 to 10% higher than men, although the differences were not statistically significant. DU obtained immediately after CAS revealed that median blood-flow velocities were very similar among men and women ($p > .4$). Scatter plots of carotid blood flow velocities and the percent of carotid stenosis as determined at preoperative arteriography revealed significant correlation in both genders ($r > .4$; $p < .05$). The spread between regression fitted lines of carotid velocities as a function of preoperative angiographic stenosis were wider with higher degrees of carotid stenosis.

Conclusions

In conclusion, although women have higher carotid blood flow velocities than men, gender differences are notably absent on follow-up DU after carotid stenting. Our data indicate that similar criteria should be used after CAS for interpreting carotid velocity profiles in both women and men.