arteries and the aortic bifurcation, significantly greater in group C. The clock position of the LRA and the distances of the SMA–LRA, SMA–RRA, RRA–LRA and between both renal arteries and the aortic bifurcation showed a significant correlation with the increase of aortic diameter.

Conclusion: The anatomic variability of the origin of both the CT and the SMA in terms of clock position and mutual distances followed a Gaussian distribution, regardless of group. The same applies to the ostial diameters of renal and visceral vessels. In contrast, the origin of the renal vessels had a statistically significant heterogeneity that seemed to be correlated with the increase of aortic diameter in the mesenteric and renal aortic region.

Beneficial Effects of Pre-operative Exercise Therapy in Patients with an Abdominal Aortic Aneurysm: A Systematic Review

Pouwels S., Willigendael E.M., van Sambeek M.R.H.M., Nienhuijs S.W., Cuypers P.W.M., Teijink J.A.W. Eur J Vasc Endovasc Surg 2014;49:66-76.

Objective/background: The impact of post-operative complications in abdominal aortic aneurysm (AAA) surgery is substantial, and increases with age and concomitant co-morbidities. This systematic review focuses on the possible effects of pre-operative exercise therapy (PET) in patients with AAA on post-operative complications, aerobic capacity, physical fitness, and recovery.

Methods: A systematic search on PET prior to AAA surgery was conducted. The methodological quality of the included studies was rated using the Physiotherapy Evidence Database scale. The agreement between the reviewers was assessed with Cohen's kappa.

Results: Five studies were included, with a methodological quality ranging from moderate to good. Cohen's kappa was 0.79. Three studies focused on patients with an AAA (without indication for surgical repair) with physical fitness as the outcome measure. One study focused on PET in patients awaiting AAA surgery and one study focused on the effects of PET on post-operative complications, length of stay, and recovery.

Conclusion: PET has beneficial effects on various physical fitness variables of patients with an AAA. Whether this leads to less complications or faster recovery remains unclear. In view of the large impact of post-operative complications, it is valuable to explore the possible benefits of a PET program in AAA surgery.

Second Toe Systolic Pressure Measurements are Valid Substitutes for First Toe Systolic Pressure Measurements in Diabetic Patients: A Prospective Study

Bhamidipaty V., Dean A., Yap S.L., Firth J., Barron M., Allard B., Chan S.T.F. Eur J Vasc Endovasc Surg 2014;49:77-82.

Objective: Toe systolic pressure is a component of the standard vascular and diabetic foot assessment. Until now, clinicians have measured only first toe pressure given a lack of evidence for measurements of the other toes. In diabetic patients, first toe measurements are often not possible because of ulceration or amputation. It was hypothesized that the adjacent second toe systolic pressure measurements would be interchangeable with those of the first toe.

Methods: A prospective study was performed on 100 participants with diabetes mellitus. Duplicate systolic toe pressures were measured in the first toe and adjacent second toe using the Systoe Automated Toe Pressure System, Systoe Photophlethysmograph Sensor Cuff, and occlusion cuffs measuring 120 × 25 mm for the first toe and 90 × 15 mm for the second toe. Correlation analysis was followed by Ordinary Least Products regression to detect and distinguish fixed and proportional bias between the two toe measurements. The acceptable limits of interchangeable results were defined as 5–10 mmHg.

Results: Correlation coefficient $r = 0.908$; $p < 0.001$. Eighty-two percent of the variations in the second toe measurements were accounted for by knowing the first toe measurements and vice versa. Ordinary Least Products regression showed no fixed or proportional bias between the two methods of measurement: second toe systolic pressure = $(-0.579) + (1.038)$ * first toe systolic pressure. Repeatability analysis showed a 0.5% variation between duplicate measurements.

Conclusions: This is the first study which demonstrates that second toe systolic pressures are interchangeable with those of the first toe. Second toe pressures can be used in diabetic patients whose first toe pressures cannot be assessed.