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Wydolność pomiaru wskaźnika kostkowo-ramiennego w populacji chorych z migotaniem przedsionków

Streszczenie w języku angielskim

Introduction

The ankle-brachial index (ABI) is a primary test for lower extremity peripheral artery disease. The gold standard of measurement ankle-brachial index is the Doppler method. Although this method requires training to the results obtained were reliable. There is also automatic oscillometric method which is less dependent on the resercher's training. Both ankle-brachial index measurement methods are currently used. The prevalence of atrial fibrillation and peripheral artery disease increases with age. The available literature lacks studies on the impact of atrial fibrillation on the assessment of the ankle-brachial index. Obtaining data on this topic may be interesting and have significant clinical implications.

Purpose of research

- Evaluation of the influence of atrial fibrillation on the assessment of the ankle-brachial index in the case of using the reference Doppler method of measurement
- Comparison of the effect of atrial fibrillation on the reference Doppler method and the automatic oscillometric method of measuring the ankle-brachial index

Design and method

All measurements ankle-brachial index were taken in the intensive care unit both of methods of measurement, after patients gave written informed consent to participate in the study. All measurements were gathered by the same investigator. Ankle-brachial index was measured according to the guidelines issued by AHA. All partiens were fasting and in the supine position.

- Before Electric Cardioversion

Doppler method measurements were repeated three times for each of the lower extremities

Oscillometric method were repeated three times for each of the lower extremities

The average result of those three measurments, each of the method were used for calculations

- After Electric Cardioversion (if the sinus rhythm returns)

Doppler method measurements were repeated three times for each of the lower extremities

Oscillometric method were repeated three times for each of the lower extremities

The average result of those three measurments, each of the method were used for calculations

Results

Ninety-nine patients were examined, in total 198 lower extremities. Gender ratio 1.75:1 - male 63, female 36. The average age is 66.6. The result of ankle-brachial index measuerments oscillometric method has not changed. After cardioversion 1.21 vs. 1.22, $p=0.664$. Ankle-brachial index measurements before and after electrical cardioversion used Dopller method and Oscillometric method showed significant difference 1.14 vs 1.21, $p<0.001$ and 1.18 vs 1.22, $p=<0.001$. Both methods showed weak correlation before electrical cardioversion $r=0.35$, $p<0.001$ and lack of correlation after electrical cardioversion $r=0.12$, $p=0.07$. The Bland-Altman plot showed poor agreement between methods in sinus rhythm and during atrial fibrillation.

Conclusions

- Atrial fibrillation does not influence Doppler method ankle-brachial index measurement
- There is a significant difference between results obtained by the Doppler method and oscillometric method during atrial fibrillation and sinus rhythm
- The reference Doppler method should not be replaced by oscillometric method in relations to patients with atrial fibrillation