

EVALUATION OF ENDOTHELIAL FUNCTION AND LOWER URINARY TRACT SYMPTOMS IN MEN WITH OR WITHOUT ERECTILE DYSFUNCTION

Hypothesis / aims of study

Flow mediated vasodilation of the brachial artery (FMD) is a non-invasive tool used for endothelial function evaluation. There is increasing evidence that endothelial dysfunction is a common etiological factor for erectile dysfunction (ED), cardiovascular events and lower urinary tract dysfunction (1,2,3).

Study design, materials and methods

The aim of this study was to evaluate endothelial function and lower urinary tract symptoms (LUTS) in men diagnosed with erectile dysfunction and without clinical evidence of significant atherosclerotic disease. LUTS were evaluated through the IPSS (International Prostate Symptoms Score). Endothelium-dependent flow-mediated dilation (FMD) was evaluated in the right brachial artery with a high resolution ultrasound machine following reactive hyperemia.

This is a case-control study that included 52 consecutive men. In all men with ED evaluated by a score less than 22 on International Index of Erectile Function-5 questionnaire (IIEF-5), clinical parameters were obtained. These parameters were compared to those men without diagnosis of ED (IIEF-5 score ≥ 22) (age-matched). Statistical analysis was performed considering a $P < 0.05$.

Results

Thirty four men were included in the ED group and 18 in group without ED. The mean ages were 59.61 ± 9.87 and 56.18 ± 10.93 , respectively ($P = 0.27$). Clinic and laboratory evaluations were similar between men with and without ED ($P > 0.05$) except for waist circumference that was greater in patients with ED (mean = 100.85 cm versus 96.05; $P < 0.05$). The percentage of FMD was higher in men without ED when compared to those with ED (Mean DMF $11.33 \pm 6.08\%$ versus $4.24 \pm 7.06\%$, respectively; $P = 0.001$). The IPSS score did not differ between groups (mean score = 6.7 ± 7.2 versus 6.6 ± 8.3 , respectively; $P = 0.9$).

Interpretation of results

There is increasing evidence to support a possible association between lower urinary tract symptoms and erectile dysfunction. Our study evaluated endothelial dysfunction and LUTS in men with or without ED (case-control study). Despite of the fact endothelial function was worse in men with ED, we could not identify differences in IPSS score between groups.

Concluding message

Men without established atherosclerotic disease presenting with ED demonstrated a worse endothelial function. The association between lower urinary tract dysfunction and endothelial dysfunction is not clear and must be addressed in future studies.

References

1. Onkelinx S, Cornelissen V, Goetschalckx K, Thomaes T, Verhamme P, Vanhees L. Reproducibility of different methods to measure the endothelial function. *Vasc Med*. 2012 Mar 8. Epub ahead of print
2. Andersson KE, de Groat WC, McVary KT, Lue TF, Maggi M, Roehrborn CG, Wyndaele JJ, Melby T, Viktrup L. Tadalafil for the treatment of lower urinary tract symptoms secondary to benign prostatic hyperplasia: pathophysiology and mechanism(s) of action. *Neurourol Urodyn*. 2011 Mar;30(3):292-301. doi: 10.1002/nau.20999. Epub 2011 Jan 31. Review.
3. Khoo J, Piantadosi C, Duncan R, Worthley SG, Jenkins A, Noakes M, Worthley MI, Lange K, Wittert GA. Comparing effects of a low-energy diet and a high-protein low-fat diet on sexual and endothelial function, urinary tract symptoms, and inflammation in obese diabetic men. *J Sex Med*. 2011 Oct;8(10):2868-75. doi: 10.1111/j.1743-6109.2011.02417.x. Epub 2011 Aug 5.

Disclosures

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