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WHICH DIURNAL URINARY FREQUENCY CUT-OFF POINT CORRELATES BEST WITH SELF-REPORTED FREQUENCY?

Aims of Study

In general, a urinary frequency of 8 or more times daily is considered to be abnormal for women. However, the statistical properties of this cut-off point as a diagnostic test for the symptom of urinary frequency are not well established. Furthermore, women with urinary frequency as part of an overactive bladder (defined as the combination of diurnal/nocturnal frequency and urgency) are bothered by it to a variable degree. If this amount of bother is best reflected by a cut-off value for diurnal frequency of ≥ 8 times is also unclear.

Methods

Sixty-three consecutive women who visited our outpatient clinic for urinary problems (e.g. incontinence, urgency/frequency symptoms, chronic cystitis) were enrolled. All completed a 48 hour frequency/volume chart after meticulous instruction about it's use. All women completed the long version of the Urogenital Distress Inventory (UDI) [1]. Women who replied positively to the question "do you experience frequent urination" were regarded as having urinary frequency. In addition we used the overactive bladder scale of the UDI. We have recently shown that, when used in a large general population, the UDI scale construction differs from the original version.[2] The overactive bladder scale consists of 3 questions namely; diurnal frequency, nocturnal frequency, and urgency. The amount of bother is scored on a four-point Likert scale ranging from "not at all" to "greatly". The total score of the overactive bladder scale ranges between 0 (no symptoms) and 100 (maximal bothersome symptoms).

Analysis were performed for three cut-off values (maximum of ≤6, ≤7 or ≥ 8) for diurnal frequency. First sensitivity and specificity of these cut-off values with respect to the symptom of frequency were assessed.

Secondly, we looked at the quality of the UDI overactive bladder scale as a diagnostic test with the different diurnal frequency cut-off values as "Gold standard". An area under the curve of 1 indicates a perfect test with a sensitivity and specificity of 1. An area under the curve of 0.5 indicates that the test is uninformative.

Results

With a diurnal frequency cut-off of 6 times, there was a sensitivity of 84% and specificity of 43% for the symptom frequency. For a diurnal frequency cut-off of 7 times the sensitivity was 91 % and specificity 50%. For a diurnal frequency cut-off of ≥ 8 times the sensitivity was 91 % and specificity 33%.

The area under the ROC curve was 0.75 (0.52;0.98) for a diurnal frequency cut-off of 6 times, 0.79 (0.64;0.95) for diurnal frequency cut-off of 7 times, and 0.66 (0.52; 0.80) for a diurnal frequency cut-off of ≥ 8 times. This indicates that the UDI overactive bladder scale is most informative if a diurnal frequency cut-off value of ≤ 7 is used. Put in other words, with a cut-off value of ≤ 7, the score on the UDI overactive bladder scale for women with a higher urinary frequency will exceed that of women with a frequency below or equal to the cut-off value an estimated 79% of the time.

Conclusions

Keeping in mind that none of the cut-off values for diurnal frequency will correlate perfectly with the reported symptoms, a cut-off value for diurnal frequency of a maximum of 7 times shows the best discriminative properties. Both from a symptom based point of view as well as regarding the experienced bother from overactive bladder symptoms.

References

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