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DEVELOPMENT OF TANGO, A NOVEL SCREENING TOOL TO IDENTIFY NON-LUTS CAUSES OF NOCTURIA

Hypothesis / aims of study

The causal pathway of nocturia is multi-factorial and differs between patients. There are significant interactions between voiding at night and markers of poor health [1-2]. There is currently no clinical tool to capture information about all-cause pathophysiology underlying nocturia. The aim of this study was to develop a comprehensive multidisciplinary assessment metric that identifies co-existing causes of nocturia beyond the urinary tract.

Study design, materials and methods

A Cochrane-style literature review identified variables carrying a significant risk in proportion to nocturia severity. Discriminating items in robust tools measuring theses co-morbidities were collected and compiled into a self-completed 57 item questionnaire (TANGO). Pertinent clinical measures were added. After removal of item duplication the metric was piloted in 22 individuals, modified based on feedback and then completed by 300 patients with nocturia and > 40 years of age who were presenting to sleep disorder, diabetes, rehabilitation, continence and falls and balance clinics. Aged care and rehabilitation ward patients from our public institution were also recruited.

Data was entered into SPSS (V23). Endorsement of items was analysed; those with a high floor effect (i.e. > 70% of responses “never” or its equivalent), an inter-relationship > 0.8 (i.e. redundant) or > 50% missing data were removed. Measures included in their entirety were subject to exploratory factor analysis to identify items with multiple loadings. Psychometric properties were used to reduce the initial TANGO to a short form.

Results

Seven non-urinary tract factors were identified as on the causal pathway of nocturia: mental health, cardiovascular, metabolic, sleep, inflammation, health status and medication. Table 1 shows the metrics from which TANGO items were drawn. A medication and medical history checklist was added to the questionnaire along with a clinician-completed section of physical measures (weight, height, neck-waist-hip circumference, blood pressure and heart rate in 3 positions, Timed Up and Go Test). The long form took between 10-15 minutes for participants to complete. Psychometric testing data was used to justify removal of items in the generation of TANGO Short Form.

Table 1: Metrics from which TANGO items were sourced.

Overactive Bladder Symptom Score
International Prostate Symptom Score
Epworth Sleepiness Scale
Pittsburg Sleep Quality Index
Stop-Bang Obstructive Sleep Apnea
FINDRISK metabolic questionnaire
Hospital Anxiety and Depression Score
EQ-5D-3L Health Status questionnaire
SF-36 Health Status
Pain Inventory
Psoriatic Arthritis Screening and Evaluation Questionnaire Symptom Score

Interpretation of results

We have developed a novel patient-completed all-cause diagnostic metric for identifying co-existing morbidities of clinical relevance to nocturia. This is the first report of such a tool. TANGO Short Form has the potential to improve practice and smooth inequalities associated with assessment and care of patients with nocturia.

Concluding message

Patients with nocturia who present across disciplines and medical specialties can now be comprehensively evaluated for multiple co-existing causes of the symptom that are traditionally beyond the scope of lower urinary tract assessment. This will reduce the siloed approach to management of nocturia.

References

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