Determining the Health Utility of Urinary Incontinence in Women

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Abstract

Objectives: Health state utility measurements are important in many areas of research and health policy. The current health state utilities available for urinary incontinence have been derived from large scale population based studies without physician confirmation of diagnosis. These studies have also used generic quality of life measures to attempt to quantify a very specific medical condition. The purpose of this study was to compare the health state utility of urinary incontinence in women as derived from the EQ-5D, and visual analog scale (VAS) methods with the gold standard assessment, the Standard Gamble interview.

Materials and Methods: This study was approved by the Partners Health Care IRB. Patients were approached for study participation after urodynamic testing confirmed a diagnosis of stress or urge urinary incontinence. Subjects completed the Sandvik Severity Index (SSI), EQ-5D and VAS. Subjects then participated in the Standard Gamble conversation.

Results: The median utility for stress incontinence varied based on method: EQ-5D (0.83 [0.23]), VAS (0.85 [0.15]) and standard gamble (1.00 [0.01]). There was a significant difference between the standard gamble assessment and EQ-5D and between the standard gamble and VAS in women with urodynamically demonstrated stress urinary incontinence ($p = 0.0003$ and $p < 0.0001$, respectively). In the combined group of women with urodynamically proven stress and urge urinary incontinence, there was also a significant difference between the standard gamble and the EQ-5D and standard gamble and VAS ($p < 0.0001$). Mean Sandvik's Severity scores were similar in women with stress incontinence (6.6 ± 3.5) and in the combined group (7.9 ± 3.8).

Conclusion: This study suggests that existing published literature using EQ-5D and VAS methods to quantify the health state utilities may over-estimate the degree of bother when compared to Standard Gamble assessment – which more closely approximates the decision to undergo surgery. This has important implications in future research regarding cost-utility analysis and treatment decisions for patients.

Objective

The goal of this study was to define the utility of urinary incontinence in women using the Standard Gamble, the gold standard method for determining health state utilities, based on a diagnosis obtained from multichannel urodynamic testing, the gold standard in clinical diagnosis.

Background

Health state utility values are important in many areas of medical research. The values are used in cost-utility analysis, decision analysis and health related quality of life studies. To date, studies that have estimated the utility of urinary incontinence in women have relied on values from generic health related quality of life questionnaires such as the ED-5Q and Health Utilities Index or from expert opinion. [1-5] The utility of urinary incontinence in these studies appears to be unintuitively low, at 0.71 to 0.82, with perfect health represented by 1.0. [6, 7] The utility of health states that are much more debilitating, for example cancer (0.82), is higher than urinary incontinence. [6]

These studies have relied on patient self-diagnosis of incontinence. Additionally, they have considered all types of urinary incontinence together. Intuitively, one would think that quality of life would be affected differently with different types (stress, urge, mixed) and differing severity of incontinence.

Methods

- **All adult female patients who underwent urodynamic testing at Brigham and Women's Hospital were prospectively recruited**
- **Diagnosis of type of incontinence was made by attending physician interpretation of the urodynamic study**
- **No exclusion criteria**
- **Patients completed three validated questionnaires**
  1. **Sandvik Severity Index**
     - ***A validated two question symptom specific instrument to evaluate urinary incontinence***
  2. **EQ-5D**
     - ***A five-domain generic quality of life questionnaire***
     - ***Answers are converted into a utility value***
  3. **Visual Analog Scale**
     - ***Vertical line from 0 (worst imaginable health) to 100 (best imaginable health)***
     - ***Patient rates own perception of health on line***
- **The Standard Gamble technique was used in a standard format to determine each patients utility value for their health state**
  - ***Patient is asked to choose between life in current health state and varying risks of immediate painless death***
  - ***Gold Standard method to determine patients utility preference for their health state***

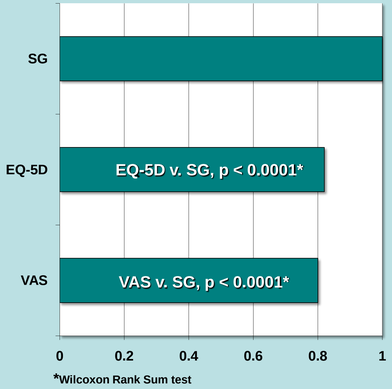
Results

- **This pilot study of 28 patients demonstrated a significant difference in utility value derived from the Standard Gamble and the generic health-related quality of life instruments**
- **There were 21 patients with stress urinary incontinence, 6 patients with urge urinary incontinence and 1 patient with mixed urinary incontinence**
- **Mean Sandvik score was higher in Urge Incontinence subgroup**
- **Mean Utility from Standard Gamble was lower in Urge Incontinence group**
- **Sandvik scores were moderately correlated with EQ-5D, SG and VAS utilities**

Table 1. Demographic Characteristics & Sandvik Score

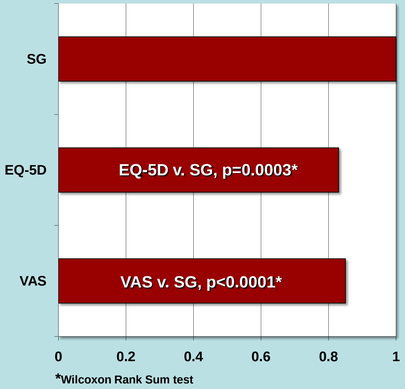
	Combined Group	Stress Incontinence	Urge Incontinence
Age (y)	55.5 ± 15.8	58.9 ± 12.9	42.0 ± 25.5
BMI (kg/m²)	29.3 ± 7.9	29.3 ± 8.4	29.2 ± 8.3
Menopause	70 %	50%	75%
Sandvik	8 ± 3	7 ± 3	12 ± 0

Fig 1. Urinary Incontinence Utilities



*Wilcoxon Rank Sum test

Fig 2. Stress Incontinence Utilities



*Wilcoxon Rank Sum test

Conclusions

- **Utility scores derived from Standard Gamble were significantly higher than those derived from generic health related quality of life instruments.**
- **Utility scores derived from EQ-5D and VAS were similar to those previously reported in the literature. [6,7]**
- **Current utility values over-estimate the degree of bother of urinary incontinence.**
- **Researchers should consider using higher utility values for urinary incontinence in future cost utility and quality of life studies.**

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