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Title **Systematic Review and Evaluation of Methods of Assessing Urinary Incontinence**

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Aim

- To identify, appraise, and summarize evidence on methods of diagnostic assessment of male and female urinary incontinence: specifically urodynamic stress incontinence (USI) and detrusor overactivity (DO).
- To synthesize the evidence using meta-analysis or pooling individual sensitivity and specificity data.
- To construct an economic model to examine the cost effectiveness of common primary care tests.
- To identify gaps in the literature and to prioritize future clinical and research questions.

Conclusions and results

Generally, reporting in the primary studies was poor. There was a lack of literature in the key clinical areas and minimal literature on diagnosis in men. Only a few studies could be combined or synthesized, providing the following results.

A clinical history for diagnosing USI in women was found to have a sensitivity of 0.92 and a specificity of 0.56, and for DO a sensitivity of 0.56 and specificity of 0.88. Seven studies compared a pad test with multichannel urodynamics, but it was difficult to draw conclusions about diagnostic accuracy. Of the 4 studies comparing urinary diary with multichannel urodynamics, only 1 presented data in a way that allowed sensitivity and specificity to be calculated. Reported values of 0.88 and 0.83 suggest that a urinary diary may be effective in diagnosing DO in women. We examined the incremental cost effectiveness of 3 primary care tests (diary, pad test, and validated scales) used in addition to history and found the diary had the lowest cost effectiveness ratio. Using ultrasound to determine leakage was effective in diagnosing USI in women (sensitivity 0.94, specificity 0.83).

Recommendations

The search identified 6009 papers, whereof 129 were included in the review. Clinical interpretation was difficult because few studies could actually be synthesized and conclusions drawn. However, the following information could be deduced from the data:

- In primary care, a large share of women with USI can be correctly diagnosed from clinical history alone.
- In diagnosis, the diary appears to be the most cost effective of the 3 primary care tests used.
- Ultrasound imaging may offer a valuable alternative to urodynamic investigation.
- The clinical stress test is effective in diagnosing USI.
- If a patient is to undergo an invasive urodynamic procedure, multichannel urodynamics is likely to yield the most accurate result.
- There is minimal literature on the diagnosis of UI in men.

Methods

See Executive Summary link above.

Further research/reviews required

Large, high-quality primary studies evaluating the use of several diagnostic methods in a primary care setting are needed to verify the results of this systematic review. To inform future health policy decisions, such studies should assess clinical effectiveness (ie, diagnostic accuracy) and the costs and quality of life. Given the demographics of the UK population, and the reported high prevalence of urinary incontinence, an increasing burden will be placed on health services in terms of diagnostic assessment and appropriate treatment. Hence, it is crucial to identify the most clinically and cost-effective diagnostic methods. Recommendations of the STARD (standards for reporting diagnostic accuracy) initiative should be followed to ensure the accuracy and completeness of reporting.

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