Lower urinary tract symptoms in men: the TRIUMPH cluster RCT

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Disclosure of interests

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Scientific summary

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Background

Lower urinary tract symptoms (LUTS) can relate to urinary storage or voiding. Among men, the prevalence and severity of symptoms increase with age, with a substantial impact on quality of life. The majority of men presenting with urinary symptoms are assessed and managed by their general practitioner (GP) in the first instance, with conservative therapies recommended as initial treatment. However, there is a lack of evidence on the effectiveness of conservative therapies, and uncertainty regarding approaches to delivery. Provision in primary care is variable and can be time and resource limited, and GPs require practical resources to enhance patient engagement with such interventions. The TReatIng Urinary symptoms in Men in Primary Health care using non-pharmacological and non-surgical interventions (TRIUMPH) trial aimed to address this need in primary care.

Objectives

The key aim of this research was to determine whether or not a standardised and manualised care intervention achieves superior symptomatic outcome, compared with usual care, for male LUTS, with a primary outcome of overall International Prostate Symptom Score (IPSS) measured 12 months after consent, in a primary care setting.

Secondary objectives were to compare the two trial arms with regard to:

- disease-specific quality of life
- symptomatic outcomes
- cost effectiveness
- relative harms
- use of NHS resources
- overall quality of life and general health
- acceptability of assessment and provision of care
- patients' perception of their LUTS.

Design

This was a pragmatic two-arm cluster randomised controlled trial randomising general practice sites 1 : 1 between a care pathway based on a standardised and manualised care intervention (intervention arm) and one based on usual care (comparator arm) for men with LUTS. The trial design included an internal pilot recruitment phase of 4 months' duration, primarily to verify feasibility of recruitment before progression to the main phase of the trial.

Setting

Thirty general practice sites were recruited within nine Clinical Commissioning Groups across the West of England and Wessex Clinical Research Network (CRN) regions in the UK. Participants were identified and recruited from these sites.

Participants

General Practice Recruitment

The CRNs invited general practices to express an interest in taking part in the study. To achieve a balanced range of practices, the following factors were considered in practice selection:

- number of potentially eligible patients, on conduct of a preliminary database search
- patient list size
- deprivation score (calculated using a general practice's postcode)
- preference for method of intervention delivery (by practice staff or trial research nurses)
- treatment room space available for intervention delivery.

Participating sites underwent site initiation training. An internal pilot phase was conducted with eight initial sites over a period of 4 months before the main phase of the trial.

Participant recruitment

This was a pragmatic trial in adult men who considered themselves to have bothersome LUTS and who had presented to primary care within the preceding 5 years with at least one symptom of LUTS. Only men already known to have LUTS (prevalent cases) were screened for inclusion in the trial. Screening was undertaken once by each site pre randomisation, so men newly presenting with LUTS (incident cases) after site randomisation were not included.

Interventions

Practices were randomised 1 : 1 to deliver the TRIUMPH intervention or a usual-care pathway. The TRIUMPH intervention comprises a LUTS advice booklet developed for the trial from the British Association of Urological Surgeons' patient information sheets, with patient and expert input, providing the standardised element. Practices in the intervention arm could choose whether the intervention was delivered by central study research nurses or general practice nurses/healthcare assistants (HCAs), who received a 1-hour training session. Patients were directed to relevant sections by the nurses/HCA following symptom assessment, providing the manualised element. The healthcare professional (HCP) provided follow-up contacts over 12 weeks to encourage adherence.

Usual care (the comparator arm for the TRIUMPH trial) in this study requested that sites continue to follow their standard local practice for trial patients in terms of delivery and follow-up.

Main outcome measures

The primary outcome measure was the patient-reported IPSS at 12 months after consent. Key secondary outcomes included quality of life, patient-reported urinary symptoms, adverse events, referrals to secondary care, patient perception of their LUTS, cost effectiveness, number of GP consultations and a qualitative evaluation of patients' experiences of the intervention. Patient-reported outcomes were collected by questionnaire at baseline and at 6 and 12 months. Other clinical outcomes and NHS resource use were extracted from primary care electronic medical records a minimum of 1 month after the final participant at each site had completed the 12-month follow-up. Qualitative interviews were conducted throughout the trial.

Results

The trial was successful in meeting general practice site recruitment targets, and participant recruitment exceeded that anticipated. In total, 1077 men consented to the study: 524 in sites randomised to the intervention arm (n = 17) and 553 in sites randomised to the control arm (n = 13). A total of 887 patients (82%) were included in the primary analysis at 12 months post consent. The treatment groups were broadly balanced on baseline characteristics, but the primary outcome measure (IPSS) was slightly lower in the intervention arm than in the usual-care arm (intervention: 13.62 points; usual care: 14.59 points).

The intervention was successfully delivered: 98% of men received their intervention booklet and 90% had all three contacts forming the intervention.

The primary outcome analysis found that, although there was a reduction in IPSS between baseline and 12 months in both arms, suggesting improved symptoms, symptom improvement was greater in the

intervention arm [−1.81, 95% confidence interval (CI) −2.66 to −0.95]. The difference was smaller than the difference we sought to detect in the sample size calculation of 2 points in overall IPSS, and the minimal clinically important difference of 3 points. The improvement in IPSS, however, was mirrored by improvements in the secondary outcomes of incontinence (measured using the International Consultation on Incontinence Questionnaire-Urinary Incontinence-Short Form), IPSS quality-of-life measures and patients' perception of their LUTS (measured using the Brief Illness Perception Questionnaire). The primary analysis estimates were robust to ways of accounting for clustering and multiple imputation of missing data. High levels of adherence to intervention delivery meant that per-protocol analyses largely reflected the primary analysis.

Although there was no strong evidence that the treatment effect was modified by the nature of LUTS at baseline, by who delivered the intervention or by how contact was delivered in the intervention, a post hoc analysis suggests that the treatment effect may have been stronger in the pre-COVID period.

No difference was seen between the arms in the proportion of urology referrals or adverse events.

In terms of the health economic analysis, from an NHS perspective, costs and quality-adjusted life-years (QALYs) were similar across both trial arms. Compared with the usual-care arm, the intervention arm had slightly lower mean costs (adjusted mean difference of −£29.99, 95% CI −£109.84 to £22.63) and a small gain in QALYs (adjusted mean difference of 0.001, 95% CI −0.011 to 0.014). Two sensitivity analyses adjusting for missing data reversed this finding, reflecting the similar costs and outcomes between the two arms. Overall, the results of the economic evaluation indicate that the costs should not be seen as a limiting factor for the roll-out of the TRIUMPH intervention.

Qualitative interviews indicated that many men in both intervention and usual-care arms lived with distressing LUTS for long periods without seeking help. Men tolerated symptoms they portrayed as mundane and inevitable parts of ageing, unworthy of clinical attention, unless severe enough to warrant often unpalatable medication or surgery. Mostly men were unaware that a range of self-management techniques existed and might offer support. In this context, men in the intervention arm strongly welcomed the guidance offered. Men appreciated the accessibility of the booklet, the targeted self-management techniques offered, the interest in their neglected LUTS, the HCP meeting and follow-up contact. Men in the intervention arm reported not only symptom improvement, but also better understanding and a renewed sense of self-efficacy in relation to their symptom management, and an accompanying erosion of the stigma that entangled notions of age, LUTS and inevitable irredeemable bodily decline. Men reported feeling both better able to take action to redress symptoms and more cheerful about their LUTS (and, more broadly, about ageing). Men in the usual-care arm continued to live with distressing symptoms with resigned tolerance.

Interviews with both trial participants and GPs in participating practices indicated that self-management guidance for LUTS is currently insufficiently embedded within primary care consultations. Despite describing their contact with primary care positively, men rarely recalled being offered in-depth, structured self-help guidance; men in the usual-care arm remained unfamiliar with the guidance, despite enduring LUTS. Men tended to visit their GP when symptoms were alarming or severe, which may explain why GP encounters often focused on prostate cancer concerns, or moved quickly to medication, forgoing detailed self-management discussions. Most men, and also some GPs, associated pelvic floor exercises with women's, but not men's, LUTS. As a result, interviews provided strong grounds for making the intervention guidance routinely available within primary care, to better meet clinical recommendations promoting conservative care for men with LUTS and to better support men's knowledge and understanding both of their symptoms and of self-management approaches, and to alleviate distressing and neglected symptoms.

The strengths of the trial include recruitment to target and excellent follow-up rates, with a clustered trial design to reduce contamination, resulting in informative and robust conclusions. The primary outcome was also intentionally timed to allow the longer-term benefit of the TRIUMPH intervention to be captured, at 12 months post consent, following a 12-week intervention delivery. Sustained benefit

was identified, which can be an issue in the longer-term effectiveness of lifestyle and conservative interventions. The limitations of the trial include the necessity of the trial participants being unmasked. In addition, the trial population had only a small number of non-white men, and included only those who had previously sought help from their GP for their LUTS, so may not apply to all men with LUTS. A potential limitation is that sites recruiting to the usual-care arm would potentially have developed renewed awareness of the condition and the current approaches to management as a result of participating in the study. Potentially, this would decrease the observed differences between randomised groups, given that there was some improvement in the usual-care arm in the primary outcome.

Conclusions

The TRIUMPH intervention showed a sustained benefit for men's LUTS and quality of life across a range of outcome measures in a UK primary care setting. Although the effect sizes were small, qualitative data showed that men highly valued the intervention. Intervention costs were marginally lower than usual-care costs.

The findings show the potential for a short training process to enable nurses or HCA to assess patients and direct them towards appropriate conservative measures in a standardised information booklet. This delivers improved symptoms at low cost, with minimal adverse events.

The potential for the same intervention to achieve symptom improvement in incident patients, or for GPs to screen for LUTS to offer the intervention, should be considered. The implications of outcomes in a more diverse population of men need to be evaluated.

Trial registration

The trial is registered as ISRCTN11669964.

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