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Pelvic floor exercises for erectile dysfunction

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OBJECTIVE

To examine the role of pelvic floor exercises as a way of restoring erectile function in men with erectile dysfunction.

PATIENTS AND METHODS

In all, 55 men aged >20 years who had experienced erectile dysfunction for ≥ 6 months were recruited for a randomized controlled study with a cross-over arm. The men were treated with either pelvic floor muscle exercises (taught by a physiotherapist) with biofeedback and lifestyle changes (intervention group) or they were advised on lifestyle changes only (control group). Control patients who did not respond after 3 months were treated with the intervention. All men were given home exercises for a further 3 months. Outcomes were measured using the International Index of Erectile Function (IIEF), anal pressure measurements and independent (blinded) assessments.

RESULTS

After 3 months, the erectile function of men in the intervention group was significantly better than in the control group ($P < 0.001$). Control patients who were given the intervention also significantly improved 3 months later ($P < 0.001$). After 6 months, blind assessment showed that 40% of men had regained normal erectile function, 35.5% improved but 24.5% failed to improve.

CONCLUSION

This study suggests that pelvic floor exercises should be considered as a first-line approach for men seeking long-term resolution of their erectile dysfunction.

KEYWORDS

pelvic floor exercises, physiotherapy, erectile dysfunction, bulbocavernosus muscle, ischiocavernosus muscle

INTRODUCTION

Pelvic floor exercises are very effective in treating erectile dysfunction [1,2]. The ischiocavernosus and bulbocavernosus muscles are superficial pelvic floor muscles that are active during erection and which enhance rigidity. The bulbocavernosus muscle encircles 33–50% of the base of the penis and has three functions: it is responsible for preventing blood from escaping during an erection by exerting pressure on the deep dorsal vein; it is active and pumps during ejaculation; and it empties the bulbar urethra by reflex action after micturition.

The aim of the present study was to examine the role of pelvic floor muscle exercises (focusing on the bulbocavernosus and ischiocavernosus muscles) as a key to restoring erectile function.

PATIENTS AND METHODS

In all, 55 men aged > 20 years who had experienced erectile dysfunction for ≥ 6 months were recruited for a randomized controlled study with a cross-over arm. Men with a low testosterone level, urological abnormalities, previous prostate surgery (except TURP), and men with a neurological deficit were excluded from the study.

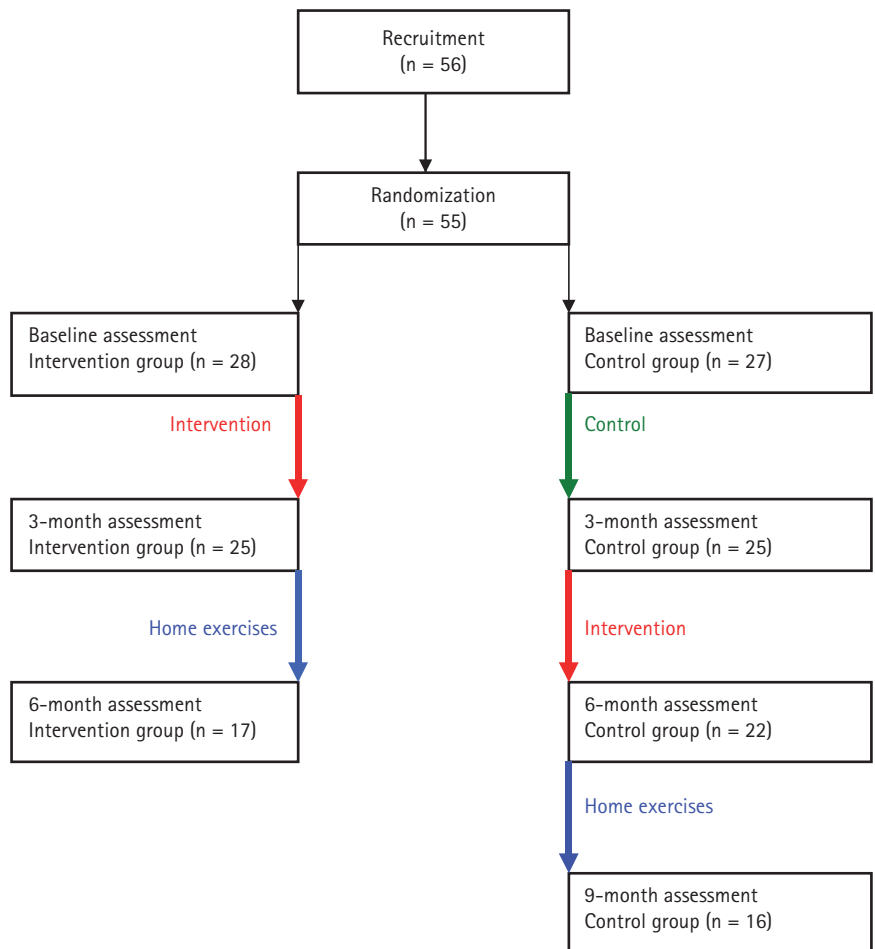
The study was conducted at The Somerset Nuffield Hospital, Taunton, and 55 men meeting the inclusion criteria were randomized to receive either pelvic floor muscle exercises enhanced by manometric biofeedback and lifestyle changes (intervention group, 28 men) or lifestyle changes only (controls, 27). The lifestyle changes consisted of advice on reducing alcohol consumption, stopping smoking, reducing weight, getting fit and avoiding bicycle saddle pressure. Outcomes were measured by the validated erectile function domain of the International Index of Erectile Function (IIEF), anal pressure measurements, and an independent assessor who was unaware of the patient grouping.

The pelvic floor exercises were taught by a skilled physiotherapist who instructed the men to tighten their pelvic floor muscles as strongly as possible (as if to prevent flatus from escaping), to gain muscle hypertrophy. During pelvic floor muscle training attention was placed on the ability to retract the penis and lift the scrotum, to make sure the bulbocavernosus and ischiocavernosus muscles were working strongly. Emphasis was placed on gaining a few maximum contractions (three when lying, three sitting, and three standing) twice daily rather than prolonged repetitions. Some submaximal pelvic floor work was advised while walking, to increase muscle endurance. Men were also taught to tighten their pelvic floor muscles strongly after voiding urine whilst still poised over the toilet, as a way of working the bulbocavernosus muscle to eliminate the urine from the bulbar urethra. Any patients who did not improve in the control group were switched to the intervention group, as shown by the cross-over study design (Fig. 1).

RESULTS

After 3 months, erectile function did not improve in the control group but improved significantly in the intervention group (Mann-Whitney independent samples test; $P < 0.001$). At this time, the men in the control

FIG. 1. The algorithm of the randomized controlled trial with cross-over arm.



group were switched to the intervention group and their erectile function improved significantly when assessed 3 months later (paired t test; $P < 0.001$). Both groups then performed home exercises for a further 3 months and showed further, albeit slight, improvements.

The independent blind assessment showed that 40% of men had regained normal erectile function, 35.5% improved and 24.5% failed to improve after 6 months. The study also showed that 65.5% of the men had postmicturition dribble after they had left the toilet. Pelvic floor exercises significantly cured this after-dribble (Wilcoxon Signed Ranks test; $P < 0.001$) [3]. The study findings are summarized in Fig. 2.

DISCUSSION

The present findings show that pelvic floor muscle exercises can improve erectile

function. Men who improved reported the return of an erection on waking, which was evident a few weeks before gaining an erection sufficient for vaginal intercourse. However, not all the men improved; these men generally had other comorbidities, e.g. cardiovascular disease, atherosclerosis, diabetes, and an excessive alcohol intake. Analysis of data showed that younger men improved more than older men, and men taking antihypertensive medication improved less than men who were not.

We were surprised by the lack of improvement in the group using lifestyle changes only, which was not in agreement with previous reports. It is possible that 3 months was too short to make a difference. It might also be that reducing alcohol levels, quitting smoking, reducing weight, getting fit and avoiding saddle pressure takes >3 months to improve erectile function. It would have been ethically wrong to follow the lifestyle-change group

FIG. 2.
The mean erectile function domain scores of the IIEF for both groups at each assessment (baseline, open bars; 3 months, green bars; 6 months, light green bars; 9 months, red bars). The green arrow shows the lifestyle change, the red arrow the intervention and the blue arrows the home-exercise groups. The box represents the interquartile range, the central line the median, and the bars the SD.

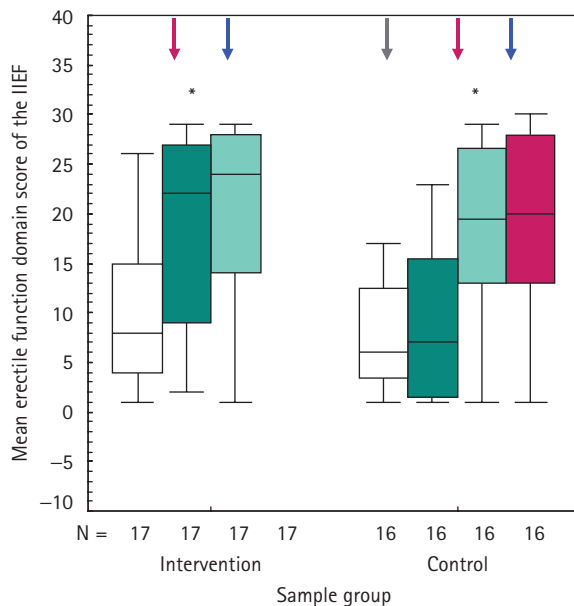
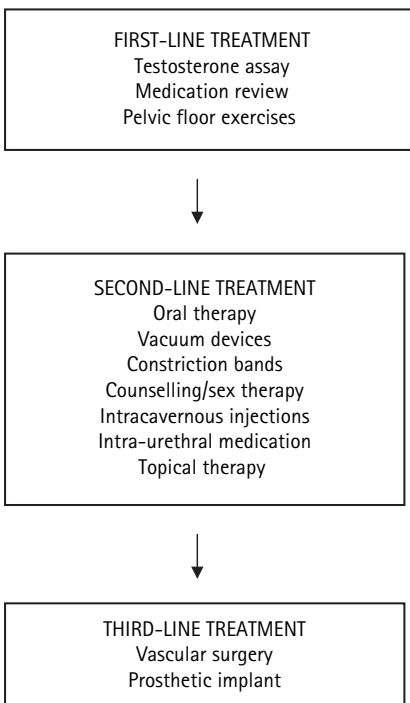


FIG. 3. A suggested algorithm for treating erectile dysfunction.



for ≥6 months when it became clear that the intervention group was receiving a significantly more effective treatment. If the pelvic floor exercise group had been followed for >6 months the results would have been similar, provided that the men still performed their pelvic floor exercises. The successful men

had a strong reason to continue exercising their pelvic floor muscles.

This is the first time that an association has been suggested between erectile dysfunction and postmicturition dribble caused by pelvic floor muscle weakness. It is possible that this weakness could also be a cause of some types of ejaculatory dysfunction.

The results of the present randomized, controlled trial were compared with the results of a large trial exploring the effectiveness of sildenafil for men with erectile dysfunction of similar (i.e. mixed) causes [4]. A similar improvement was shown in the erectile function domain of the IIEF in both trials.

In conclusion, pelvic floor muscle exercises should be considered as a first-line approach for men seeking long-term resolution of erectile dysfunction without acute pharmacological and surgical interventions that might have more significant side-effects. Men demanding a 'quick fix' or a 'pill for every ill' might prefer to restore normal muscle function once they understand the important role of the pelvic floor muscles. After routine muscle testing at prostate and erectile dysfunction clinics, men with weak pelvic floor muscles might be more amenable to this regimen. Men receiving other forms of therapy for erectile dysfunction could be advised to practise pelvic floor muscle exercises in addition to the therapy

prescribed. A suggested management pathway for men with erectile dysfunction is shown in Fig. 3.

The exercises used in the present study are described in a book entitled 'Use it or lose it!', that gives self-help guidance for men [5]. The advice is easy to follow and places emphasis on gaining a maximum contraction to restore muscle function. A video entitled 'Men's Health Issues: Erectile Dysfunction and Post-micturition Dribble' also gives explicit instructions and shows a live model performing these exercises [6].

CONFLICT OF INTEREST

None declared.

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Abbreviations: IIEF, International Index of Erectile Function