

Original article

Pelvic floor exercises for erectile dysfunction

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Conflict of interest

None declared

Summary

Objective

The aim of this study was to examine the role of pelvic floor exercises as a way of restoring erectile function in men with erectile dysfunction.

Subjects and methods

A total of 55 subjects were recruited in this randomised controlled study with a cross-over arm. Subjects received either pelvic floor muscle exercises (taught by a physiotherapist) with biofeedback and lifestyle changes (intervention group) or they were given lifestyle changes only (control group). Control subjects that did not respond after three months were given intervention. All subjects were given home exercises for a further three months. Outcomes were measured using the IIEF, anal pressure measurements and independent (blinded) assessments.

Results

After three months, subjects in the intervention group showed significant ($p < 0.001$) improvements in erectile function compared with the control group. Those control subjects that were given intervention also showed significant ($p < 0.001$) improvements three months later. After six months, the blind assessment showed that 40% of men had regained normal erectile function, 35.5% improved but 24.5% failed to improve.

Discussion

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 muscles

Introduction

Pelvic floor exercises are significantly effective in the treatment of erectile dysfunction [1,2]. The superficial pelvic floor muscles, which are active during the erection process and enhance rigidity, are the ischiocavernosus and bulbocavernosus muscles.

The bulbocavernosus muscle encircles 33% to 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 this 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.

Subjects

Inclusion and exclusion criteria

Men over 20 years of age, who had experienced erectile dysfunction for six months or more, were recruited for this study. Those men with a low testosterone level; with urological abnormalities; with previous prostate surgery (except TURP); and those with a neurological deficit were excluded from the study.

Methods

In this study, which was conducted at The Somerset Nuffield Hospital, Taunton, 55 subjects (men) meeting the inclusion criteria were randomised to receive either pelvic floor muscle exercises enhanced by manometric biofeedback and lifestyle changes (intervention group; n = 28) or lifestyle changes only (control group; n = 27). The lifestyle changes consisted of advice on reducing alcohol levels, quitting 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 blinded to the subject 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 wind from escaping) in order to gain muscle hypertrophy. During pelvic floor muscle training attention was placed on the ability to perform a penile retraction and scrotal lift to make sure the bulbocavernosus and ischiocavernosus muscles were working strongly. Emphasis was placed on gaining a few maximum contractions (three in lying, three in sitting and three in standing) twice a day rather than performing endless repetitions. Some sub-maximal 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 as shown by the cross-over study design illustrated in Figure 1.

Results

After three months, the control group failed to improve while the intervention group showed significant improvement ($p < 0.001$). At this time, the subjects in the control group were switched to the intervention group and they also showed significant improvement when assessed three months later ($p < 0.001$). Both groups then performed home exercises for a further three months and showed further albeit slight improvements.

The independent assessment showed that 40% of men had regained normal erectile function, 35.5% improved and 24.5% failed to improve after six months. The study also showed that 65.5% of the subjects experienced post-micturition dribble after they had left the toilet. Pelvic floor exercises significantly cured this after-dribble ($p < 0.001$) [3]. The study findings are summarised in Figure 2.

Discussion

These findings show that pelvic floor muscle exercises can improve erectile function in men. Those subjects that showed improvement reported the return of an erection on waking, which was evident a few weeks prior to gaining an erection sufficient for vaginal intercourse. Not all subjects improved, however, these subjects generally suffered from other co-morbidities such as cardiovascular disease, arteriosclerosis, diabetes, and an excessive alcoholic 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 taking this medication.

The researchers were surprised by the lack of improvement in the lifestyle changes only group, which was not in line with the literature. It may be that the time scale of three months was too short a time to make a difference. It may be that reducing alcohol levels, quitting smoking, reducing weight, getting fit and avoiding saddle pressure takes longer than 3 months to improve erectile function. It would have been ethically wrong to follow up the lifestyle changes group for 6 months or more when it became clear that the intervention group was receiving a significantly more effective treatment regime. If the pelvic floor exercises group had been followed up for longer than 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.

In addition, this is also the first time that an association has been suggested between erectile dysfunction and post-micturition dribble due to pelvic floor muscle weakness. It is possible that this weakness could also be a cause of some types of ejaculation dysfunction.

The results of this randomised, controlled trial were compared with the results of a large trial exploring the effectiveness of sildenafil (Viagra) for men of similar (i.e. mixed) aetiology [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 may have more significant side-effects. Men demanding a quick fix or a 'pill for every ill' may prefer to restore normal muscle function once they understand the important role of the pelvic floor muscles. Following routine muscle testing at prostate and erectile dysfunction clinics, men with weak pelvic floor muscles may be more amenable to this regime. 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 Figure 3.

The exercises used in this study are described in a book entitled 'Use it or lose it!' which gives self-help guidance for men [5]. The advice is easy to follow and places emphasis on gaining a maximum contraction in order 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].

References

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Legends to illustrations

Figure 1: Algorithm of randomised controlled trial with cross-over arm

Figure 2: Mean erectile function domain of IIEF scores for both groups at each assessment

Figure 3: Suggested algorithm for treating erectile dysfunction

Figure 1

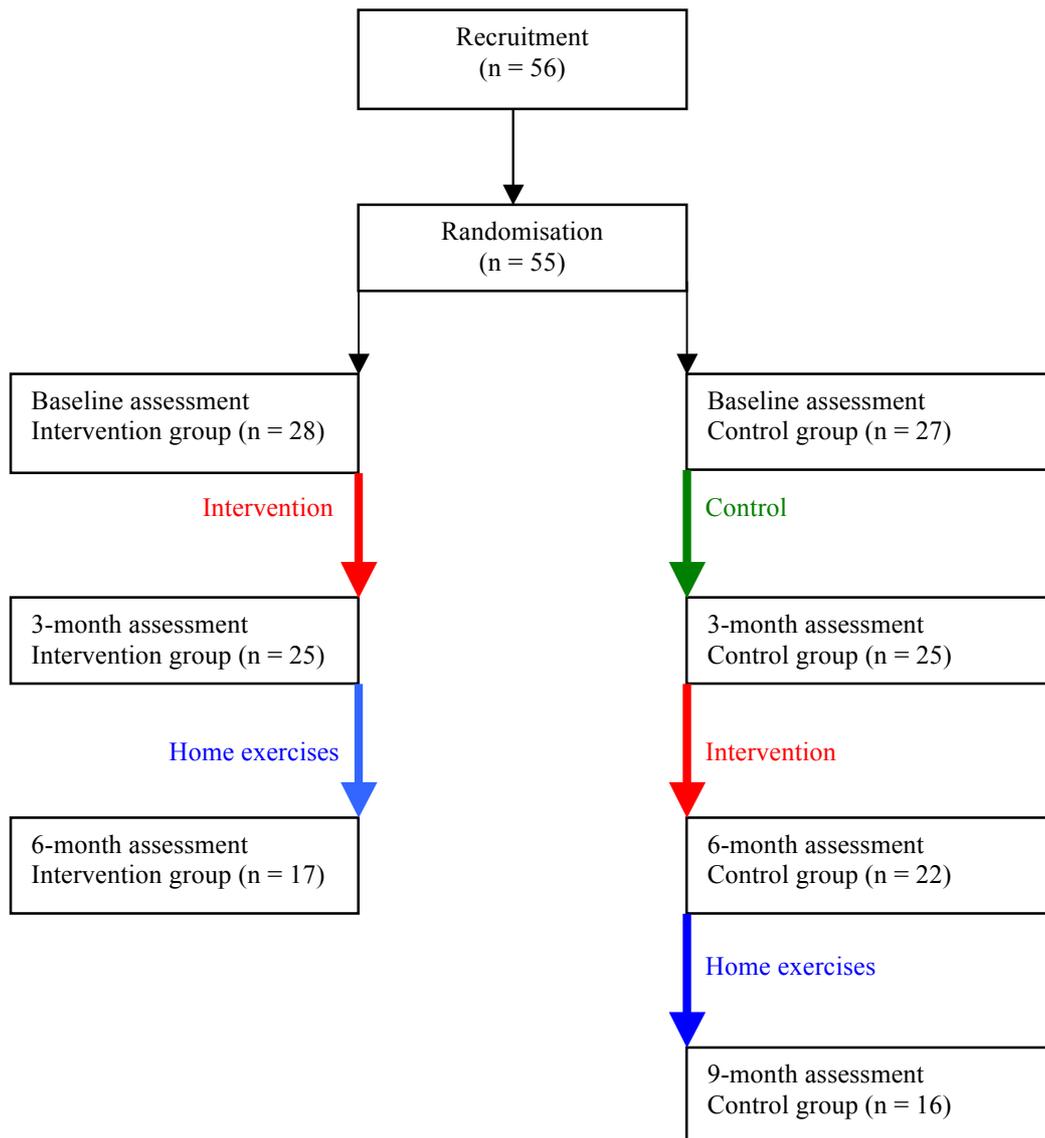
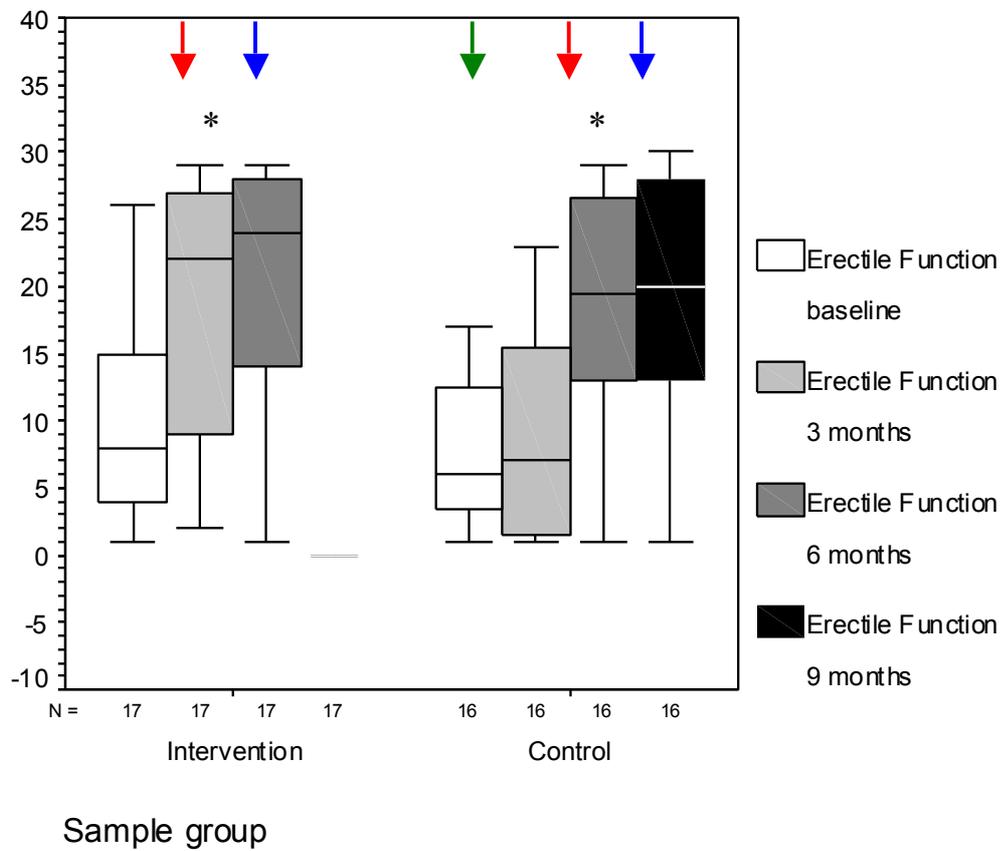


Figure 2



KEY

* Denotes significant difference (p = 0.001)

▼ Lifestyle changes

▼ Intervention

▼ Home exercises

Figure 3

