

Acupuncture for erectile dysfunction in a non-diabetic haemodialysis patient: a case report

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SUMMARY

Erectile dysfunction (ED) significantly affects the quality of life in male haemodialysis patients. This study reports the observed effects of acupuncture for ED in a non-diabetic haemodialysis patient. A 43-year-old man undergoing haemodialysis received 12 sessions of manual acupuncture over 6 weeks and was observed for 6 months after the end of treatment. Total International Index of Erectile Function Questionnaire scores of the patient were changed from 32 at baseline to 60 at post-treatment evaluation, which means there was a significant improvement of ED. All International Index of Erectile Function subscales also increased. This beneficial effect lasted up to 6 months after the end of treatment. No adverse events were observed. An interview revealed that the lowered self-esteem of the patient was restored with the improvement of ED following acupuncture. Further controlled studies are needed to determine whether acupuncture might be a feasible and useful treatment option for erectile dysfunction in haemodialysis patients.

INTRODUCTION

We report a case of erectile dysfunction (ED) in a non-diabetic haemodialysis patient who was successfully treated with 12 sessions of manual acupuncture, given few conventional therapeutic options based on reliable evidence regarding their effectiveness and safety on ED in these population.

CASE HISTORY

A 43-year-old man was referred to our research centre from a local artificial kidney centre in June 2009 for treatment of ED. Written informed consent was obtained from the patient for this study. He was diagnosed as a non-diabetic, hypertensive, chronic kidney disease patient in 2000 and

started haemodialysis 8 months ago. He regularly underwent 4-h haemodialysis treatment three times per week. He experienced ED after initiation of dialysis treatment and was in a heterosexual relationship with his spouse. He had no medication history for ED and was unwilling to take pharmacological interventions to manage his sexual problem because of a non-preference for adding further medication and fears of a potential drug interaction.

INTERVENTIONS AND OUTCOMES

The patient received individualised, manual acupuncture treatment on a non-dialysis day, conducted by a qualified oriental medicine doctor with 7 years clinical experience, twice a week for six weeks. Acupuncture was given at ST36, LR3, SP6 and KI3 bilaterally on the lower extremities, at CV5 on the lower abdomen, and at LI4, LI11 and HT7 on the opposite arm of the arteriovenous fistula-located arm. Disposable 0.25 mm×30 mm or 40 mm acupuncture needles were used. Twelve acupuncture needles were inserted to a depth of 0.2 to 10 mm, according to the location of points, and remained in place for 30 min after the manual manipulation of the acupuncture needles, eliciting an aching and dull sensation (ie, *de-qi*).

The International Index of Erectile Function (IIEF) Questionnaire, a validated instrument for diagnosing and assessing ED,¹ and the Measure Your Medical Outcome Profile 2 were administered for measuring symptom changes, and the Kidney Disease Quality of Life—Short Form for evaluating changes in quality of life. A separate assessor, who was not involved in the treatment, performed the outcome evaluations. Changes of measured outcomes are presented in table 1, which shows that all of the

outcomes markedly improved compared to the baseline, at post-treatment, 3-months, and 6-months after the end of treatments. Only minimal and transient adverse events such as minimal bleeding were observed. Dialysis-related blood profiles and the serum level of sexual hormones were measured before and after treatment, excluding hypogonadism and showing no clinically meaningful differences (table 2).

A qualitative interview was conducted at post-treatment and 6 months after the end of treatment by the research investigator (KHK). The patient mentioned that difficulties with erection and an insufficient time of erection were the main cause of lack of self-confidence in relation to his spouse, and in his personal and social relationships, which made him feel frustrated in his daily life. After the treatment, the improvement of sexual function made him more confident in his daily life and he displayed a more positive attitude towards his disease management. Selected quotations from the interview are as follows:

I became less confident to everything in my life, to my wife, to my friends, and to all things, whatever... After acupuncture, I feel better and, at least, for me, it did work. Me and my wife became close again... I wasn't able to expect to manage my life, but now, I think I can deal with my kidney problem, because my body responded to the [acupuncture] treatment. If I get treated, I could be better, I think...

Sustained beneficial effects were reported in the interview that followed, 6 months after the end of treatment.

DISCUSSION

ED is a commonly observed sexual problem in haemodialysis patients, which debilitates the patient's quality of life.² Approximately 80% of haemodialysis patients have been known to suffer from ED.² The aetiology of ED in patients undergoing haemodialysis is multifactorial, including complex neuroendocrine and metabolic

Table 1 Changes of measured outcomes before and after treatment

	Baseline	Post-treatment	3 months*	6 months*
IIEF				
Erectile function (0–30)	14	24	29	28
Orgasmic function (0–10)	6	9	9	9
Sexual desire (0–10)	4	7	7	8
Intercourse satisfaction (0–15)	4	12	11	11
Overall satisfaction (0–10)	4	8	8	8
Total IIEF score (0–75)	32	60	64	64
MYMOP (0–6)				
Symptom 1	4	2	2	1
Activity [†]	5	4	4	3
Wellbeing	3	3	2	2
Profile	4	3	2.6	2
KDQOL-SF (0–100)				
Sexual function subscale	25	75	100	100

Higher scores reflect better clinical outcomes in any of IIEF scales and KDQOL-SF sexual function subscale, while vice versa in any of MYMOP subscales

[†]Restrictions in social life

*Time points after the end of treatment

IIEF, International Index of Erectile Function Questionnaire; KDQOL-SF, Kidney Disease Quality of life-Short Form Questionnaire; MYMOP, Measure Your Medical Outcome Profiles Questionnaire.

Table 2 Changes of values of biological measurements in the case before and after treatment

	Baseline	Post-treatment
Dialysis-related		
Equilibrated Kt/V	1.06	–
Serum creatinine (mg/dl)	12.0	11.0
Serum urea nitrogen (mg/dl)	77.2	48.3
Serum albumin (g/dl)	4.4	4.5
Haemoglobin (g/dl)	11.7	9.6
Parathyroid hormone (pg/ml)	225.9	–
Calcium (mg/dl)	7.9	9.5
Phosphorus (mg/dl)	4.9	3.9
Sexual hormones		
SHBG (µg/ml)	3.158	3.597
Testosterone (ng/dl)	560.0	600.0
Free Testosterone (pg/ml)	20.2	21.6
LH (mIU/ml)	9.65	9.87
Proractin (ng/ml)	10.98	8.67
Oestradiol (pg/ml)	<10	<10
FSH (mIU/ml)	9.06	8.19

FSH, follicle stimulating hormone; LH, luteinising hormone; SHBG, sexual hormone binding globulin.

changes due to uremic syndrome, pharmacological therapy for maintenance dialysis, and physical and psychological stresses responsible for long-term illness.³ Several treatment options for ED exist, such as phosphodiesterase type 5 (PDE-5) inhibitors, apomorphine, intracavernosal or subcutaneous injections, intraurethral suppositories, hormonal treatments and psychosexual therapy.^{1–4} Among them, PDE-5 inhibitors are considered to be the first-line therapy

for ED patients.⁴ However, its wide use for ED in the dialysis population seems to be limited, because it is not recommended in patients with previous cardiovascular disease or a history of high risk of cardiovascular disease, which is more prevalent in dialysis patients than those in the general population.^{5–7} The long-term safety of PDE-5 administration for ED was also not evaluated in previous research in general or in a dialysis population.¹ ⁶ Most of the other conventional

treatment options are known to have poor compliance by patients.⁸

Acupuncture has been tested to treat ED in non-CKD patients.⁹ Although the evidence is not based on rigorous trials, it may be valuable to investigate acupuncture as a non-pharmacological treatment options in a field where the evidence of conventional therapies is also limited. Currently, no information is available for the effects and safety of acupuncture on ED in patients undergoing haemodialysis.

This is the first reported case of a haemodialysis ED patient who was successfully treated with acupuncture. The mild to moderate degree of sexual dysfunction of the patient, measured by an IIEF questionnaire at baseline, was changed to none to a mild degree of dysfunction in total, and in each subscale, at following evaluations, with subjective reports of symptom improvement and quality of life. Differences in IIEF scores from baseline to any time-point were robustly comparable to the effects of oral sildenafil, a PDE-5 inhibitor, for haemodialysis patients.^{6,8} No significant side effects related to treatment were observed during the entire treatment and follow-up evaluation.

ED has been suggested as a contributing factor to depressive symptoms and a lower quality of life,³ which

were found to be associated with increased mortality and hospitalisation in haemodialysis patients.^{10 11} Lower self-esteem is associated with ED, and interventions for ED significantly increases self-esteem and confidence.¹² In this case, improvement of lower self-esteem was the most notable self-perceived change after acupuncture treatment.

Obviously, many factors might be responsible for the observed benefit in one case. These include the placebo and non-specific effects of acupuncture, being a non-diabetic and the relatively short duration (less than 1 year) of haemodialysis, which might be associated with a lower risk of treatment failure for ED, and the self-perceived evaluation of ED not accompanying partner-reported sexual activity. Thus, the true effect of acupuncture for this condition remains unclear. What can be drawn from this case, however, is that it is worth exploring the feasibility of acupuncture for ED in haemodialysis patients who show poor compliance to conventional medication or prefer to use complementary medicine, as in this case.

The potential mechanism of acupuncture for ED is that it may modulate the nitric oxide related to the treatment of ED.⁹ Changes of sexual hormones were tested to explore the role of acupuncture on the activity of pituitary-gonadal axis, although no significant correlation were observed between the clinical improvement and the biological profiles,¹³ as seen in this case. Currently, none of these hypotheses has been fully established yet.

One might argue about the safety of acupuncture in haemodialysis patients. Acupuncture is a non-pharmacological intervention; thus, it is unlikely to

interact with other medications in haemodialysis patients. It has also been reported that acupuncture is a safe therapeutic modality in the hands of a qualified practitioner.¹⁴ However, a skin infection after the re-use of acupuncture needles in a renal transplant recipient has been reported.¹⁵ It seems clear that disposable acupuncture needles should be used and properly handled by qualified practitioners to avoid any undesirable adverse events, and practitioners must adhere to standard infection control procedures. Further studies about the safety of acupuncture in haemodialysis patients are also needed. In summary, 12 sessions of acupuncture treatment improved ED in a haemodialysis patient. Despite the caution necessary with conclusions based on a case study of one patient, we suggest that future studies are justified to determine whether acupuncture could be a feasible option in the treatment of ED in haemodialysis patients.

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Competing interest None.

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