Acupuncture for Pelvic Floor Disorders

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5.1 Acupuncture: A Traditional Technique Moving from Empiricism to a Modern Era

Acupuncture is a traditional Chinese method of medical treatment involving the insertion of fine, single-use, sterile needles in acupoints according to a system of channels and meridians that was developed by early practitioners of *traditional Chinese medicine* (TCM) over 2,000 years ago [1].

The needles are stimulated by manipulation, electrical stimulation, or heat [2]. The general theory of acupuncture is based on the premise that there are patterns of energy flow (Qi) through the body that are essential for health. Disruptions of this flow are believed to be responsible for disease. Acupuncture may correct imbalances of flow at identifiable points close to the skin. There is a considerable body of international literature on the risks and benefits of acupuncture, and the World Health Organization lists a variety of medical conditions that may benefit from the use of acupuncture or moxibustion [1].

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Acupuncture with an empirical basis has been used in the treatment and prevention of disease for centuries. A lack of scientific studies to prove or disprove its claimed effects led to rejection by many of the Western scientific community. For a long time, acupuncture was not accepted by physicians in the Western world, in part due to the mysterious and unexplainable mechanisms of traditional Chinese acupuncture. Through pioneering work to clarify the neurophysiological mechanism of acupuncture, the technology became scientifically approved, and it has been considered on par with other medical treatments in many healthcare systems [3].

In addition to a variety of disorders, acupuncture has been shown to be effective for management of bladder disturbances and even for treatment of irritable bowel and fecal incontinence.

Now that the mechanisms and functional background of the acupuncture effects on disease and pathological conditions can be partly explained in terms of endogenous facilitating and/or inhibitory systems, the integration of acupuncture with conventional medicine has become possible. Its use for pain relief has been supported by clinical trials, and this has facilitated its acceptance in pain clinics in most countries. Acupuncture effects must devolve from physiological and/or psychological mechanisms with biological foundations, and needle stimulation could represent the artificial activation of systems obtained by natural biological effects in functional situations. Acupuncture and some other forms of sensory stimulation elicit similar effects in man and other mammals, suggesting that they bring about fundamental physiological changes. Acupuncture excites receptors or nerve fibers in the stimulated tissue which are also physiologically activated by strong muscle contractions, and the effects on certain organ functions are similar to those obtained by protracted exercise. Both exercise and acupuncture produce rhythmic discharges in nerve fibers and cause the release of endogenous opioids and oxytocin essential to the induction of functional changes in different organ systems. Experimental and clinical evidence suggest that acupuncture may affect the sympathetic system via mechanisms at the hypothalamic and brainstem levels and that the hypothalamic beta-endorphinergic system has inhibitory effects on the vasomotor center. Post-stimulatory sympathetic inhibition reaches its maximum after a few hours and can sometimes be sustained for a considerable time after cessation of stimulation, as demonstrated in both man and animals. Experimental and clinical studies suggest that afferent input in somatic nerve fibers has a significant effect on autonomic functions.

5.2 Acupuncture in Functional Gastrointestinal Disorders

The prevalence of one or more functional *gastrointestinal disorders* is estimated to be as high as 70 % in general population using Rome diagnostic criteria. Since functional gastrointestinal disorders are diagnosed based on symptoms and the exact etiologies for most of functional gastrointestinal disorders are not completely known, the treatment for these disorders is often unsatisfactory, and alternative therapies become attractive to both patients and practitioners. During the last decades, a considerable number of studies focused on acupuncture as treatment of functional gastrointestinal disorders and its underlying mechanisms.

Table 5.1 Cleveland clinic continence score

Type of incontinence	Never	Rarely	Sometimes	Usually	Always
Solid stools	0	1	2	3	4
Liquid stools	0	1	2	3	4
Gas	0	1	2	3	4
Wears pad	0	1	2	3	4
Altered lifestyle	0	1	2	3	4

The sum of continence defects may be interpreted as follows: IC 0 = perfect continence, IC 1–7 = good continence, IC 8–14 = moderate incontinence, IC 15–20 = severe incontinence

Human and animal studies were conducted to explore the effects of acupuncture on gastrointestinal secretion, sensation, motility, and myoelectrical activity.

In the following paragraphs we will narrow our interest on functional gastrointestinal disorders and pelvic floor dysfunctions. There are very few studies on acupuncture and fecal incontinence, more on constipation and irritable bowel syndrome. We will describe the studies and the unpublished experience performed by our group on this subject during the last decade.

Traditionally, symptoms of *fecal incontinence* are thought of as an imbalance in the circulation of the kidney meridian; this, translated for the Western culture, corresponds to a deficit in the kidney and adrenal function (in the ancient time they could not differentiate between the adrenal gland and the kidney). Therefore, the aim of treatment with acupuncture is to balance the corticosteroid output in order to relieve the patient from fecal incontinence. While for decades surgeons only aimed at reinforcing or substituting the sphincter function, the use of acupuncture focused on increasing the sphincter function as well as regularizing the bowel function and restoring the autonomic nervous control of the pelvic floor.

We conducted a study [4] on 15 female patients, mean age 60 years. The defects of anal continence were assessed before the treatment and at regular intervals after the acupuncture sessions (Table 5.1). Anorectal function was determined through anorectal manometry. Each patient received one acupuncture treatment per week for a 10-week period. Subsequently, a control session was repeated once per month up to 7 months for six patients. The final functional assessment was performed at 18 months.

Dr. Scaglia, who is well trained in the procedure, performed the acupuncture.

The sterile and disposable acupuncture needles were 40 mm long and 0.3 mm in diameter and had stainless wire at the tip and copper wire at the handle. After insertion in the acupoint, the needles were gently stimulated by rotation and then left in place for 20 min.

During the trial the selection and localization of these points were mainly based on traditional Chinese medicine (TCM), and the following points were used: RM 3 (Zhong ji) and RM 6 (Qi Hai), both located at the midline of the lower abdomen; DM 4 (Ming Men) and BL 23 (Shen Shu) in the lumbar region; BL 32 (Ci Liao) in the 2nd sacral foramen; LI 4 (He Gu) in the hand between the first and second metacarpal bones; ST 36 (Zu San Li) at outer side of the leg below the knee; and K (Tai Xi) at the inner side of the ankle.

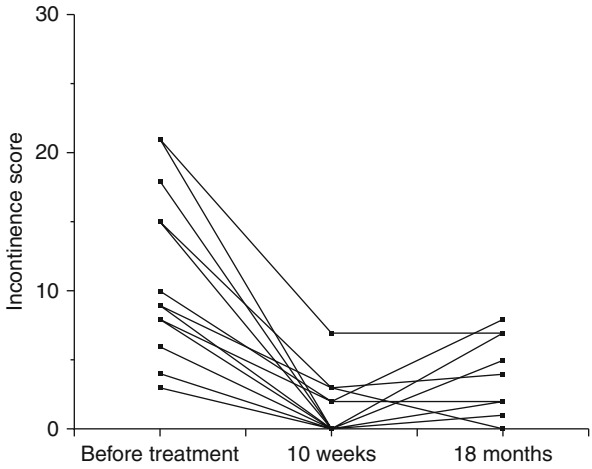

Fig. 5.1 Individual fecal incontinence score before and at intervals after acupuncture sessions

The results were presented as a median and interquartile range. Data was analyzed with Student-Fisher t-test ($p<0.05$).

The overall mean continence score of all patients changed from 10 (3–21) estimated before treatment to zero (0–7) ($p<0.05$) at 10 weeks, reflecting a significant improvement in continence. The continence index available in 14 patients at 18 months from the start of the treatment was 1 (0–8) ($p<0.05$) (Fig. 5.1).

Before acupuncture fecal incontinence occurred in nine of the 15 patients, with a mean incontinence score of 17 (9–18). After 10 weeks of treatment, these showed a significant improvement, with a median score of 0 (0–3), and when assessed at a later stage (18 months), they still scored favorably, with a median score of 1 (0–6).

The six patients who did not have fecal incontinence before the treatment had less severe incontinence (flatus and/or soiling), with a mean score of 4 (3–5) before starting the sessions. At 10 weeks these improved considerably, as reflected in the mean score of 0 (0–0).

The improvement – observed after the third acupuncture treatment – remained persistent for a long time after cessation of treatment in some patients.

Sporadic episodes of soiling were observed, mainly associated with irregularity in bowel movements, in patients regularly checked for a 7-month period after the completion of acupuncture.

As shown in Fig. 5.2, the majority of patients that suffered irregularity in bowel habits when entering the study improved significantly at 10 weeks and quite a few experienced a prolonged favorable state even at longer follow-ups. At 18 months bowel habits still remained regular in eight out of 14 patients, and 12 had firm stools.

At 10 weeks after acupuncture, resting *anal pressure* had increased from 25 (17–35) mmHg to 36 (20–42) mmHg ($p=0.05$). While maximal sphincter squeeze pressure remained uninfluenced, the ability to sustain the squeeze pressure increased from 41 (32–68) mmHg to 60 (40–100) mmHg ($p<0.05$). Prior to the acupuncture sessions, the sensation of *rectal filling* was absent or blunt in six patients, and the defecation urge sensation was blunt or absent in two patients. These defects in rectal

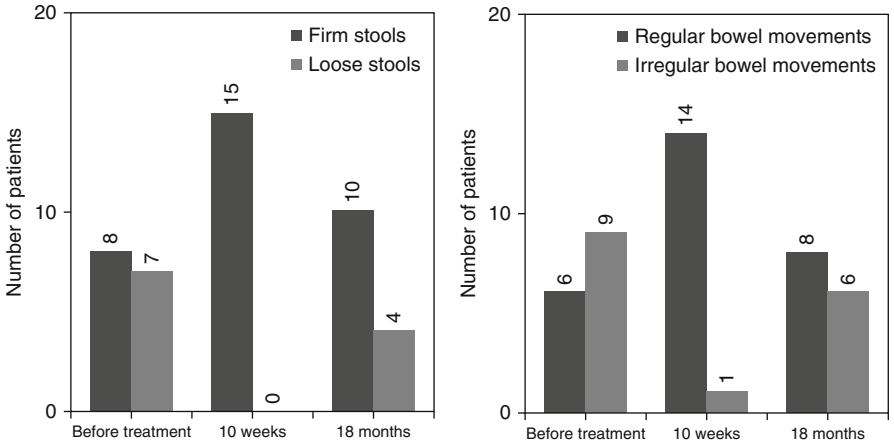

Fig. 5.2 Bowel habits (*left panel*) and stool consistency (*right panel*) before and after acupuncture

Table 5.2 Manometric results

	Pre-	Post (10 weeks)	Post (18 weeks)
Anal pressures (mmHg)			
Resting press	25 (17–35)	36 (20–42)	37 (18–48)
Squeeze	87 (58–117)	87 (55–132)	65 (54–118)
Sustained squeeze (at 15 s)	41 (32–68)	60 (40–100)	45 (30–59)
Rectal sensibility (distension pressure cm H_2O)			
Threshold	15 (10–20)	15 (11–20)	10 (9–15)
Urge	20 (20–25)	20 (20–25)	20 (14–21)
Rectal volume (ml)			
Rectal volume (40 cm H_2O dist press)	348 (340–402)	334 (299–369)	342 (311–358)

$p < 0.05$

sensory function remained unchanged. The average *rectal volume* 348 (340–402) ml also remained unchanged (Table 5.2).

At 18 months resting anal pressure was still well retained, whereas the ability to sustain the anal squeeze had returned to pretreatment levels. Rectal volume and the rectal sensory variables were unchanged.

An important concept in TCM is *point specificity*, which implies that stimulation of some acupoints is effective in treating certain clinical conditions, whereas other acupoints are less/not effective.

A systematic review designed to evaluate whether there are points specific to diseases concluded that approximately half of the trials produced evidence for point specificity and half did not [51].

This raises the interrogative: if point specificity does not exist, can appropriate controls on the inactive acupoints of certain conditions be developed for acupuncture? If rigorous studies that show clear point-specific responses were conducted,

what was the underlying mechanism? In a study examining potential answers to these questions from a pelvic floor perspective, we collected data suggesting that point-specific responses to EA at different points exist. Stimulation of certain points (KI 3, 36 ST, DM 1, RM 1) results in a significant raise in anal pressure and in rectal contraction, while stimulating others (RM 3–6) causes more modest changes or no change at all (BL 32).

The stimulation of somatic nerves that project indirectly to regions of the brain concerned with regulation of sympathetic outflow underlies the capability of certain acupoint to raise the pelvic floor tonus effectively.

During a pilot study, we tried to investigate whether the electrical stimulation of sacral acupoints had any effect on the anorectal motility, recorded simultaneously to the treatment, since manual stimulation of BL 32 alone, located at the level of the second sacral foramen, was not producing any change.

Ten female patients, mean age 59, presenting various fecal continence defects were studied.

Eight acupuncture needles were placed bilaterally at the level of the sacral roots S1, S2, S3, and S4 and connected to an external neurostimulator delivering unipolar monophase rectangular impulses. Each couple of needles was consecutively electrostimulated with an increasing frequency and intensity up to the maximum amplitude the patient can tolerate. A anorectal mano-volumetry assessment was performed before and during the electrostimulation. The stimulation caused a significant rectal relaxation, ranging from 180 (137–231) ml before the experiment to 227 (188–254) ml ($p<0.05$) during stimulation, corresponding to a 25 % increase of rectal volume. No effects were observed in anal resting pressure. When the second sacral root was stimulated, a rectal motility activation could be observed: in basal condition the maximum rectal volume displacement recorded was 5 (4–25) ml and during transcutaneous electrical stimulation at the second sacral foramen was 18 (13–38) ml (p 0.05).

The mechanism of action of electric acupuncture and its effects on the anorectal function remains unknown but could be similar to how sacral nerve stimulation achieves favorable results. The general rectal relaxation induced during the acute electrostimulation, for example, could be due to a parasympathetic effect.

Because the theory behind acupuncture as treatment of incontinence explains that it is intended to tackle the hypothetic subclinical adrenal dysfunction, we performed a pilot study on 12 patients to explore the effects of manual acupuncture on the endocrine function.

We are not the first to investigate this, as a recently published study on the beneficial effects of acupuncture in the irritable bowel syndrome (IBS) shows how the treatment is linked with a detectable change in salivary cortisol [5].

In our pilot study we utilized the same manual acupuncture schema and incontinence scoring system of the study on fecal incontinence previously described.

We observed an improvement in the incontinence mean score, with an initial value of 11.5 (sd 6.8) that significantly decreased to 5.8 (sd 4.9), and a significant reduction of salivary cortisol (h 8) changing from 8.6 (2.2) to 10.9 (5.9) µg/ml (Student t-test $p<0.05$), after 10 sessions of acupuncture.

These results suggest that more than one mechanism might be involved in the beneficial influence of acupuncture.

An analysis of the *urinary 8-isoprostanes* was performed as well; these are specific products of lipid peroxidation, which is a consequence of oxidative stress and peroxynitrate formation, measurable by *enzyme-linked immunosorbent assay* (ELISA). Nitric oxide might influence the internal sphincter function, acting as a neurotransmitter. Although the antioxidant action of acupuncture was never reported in animal studies, this test aims to evaluate the possible anti-inflammatory effect of acupuncture in vivo and its relationship with cortisol levels.

Urinary isoprostane levels lowered from 1.8 (sd 0.6) to 1.5 (0.4); however, these changes were not statistically significant, supposedly due to an inverse relationship between isoprostane and cortisol levels.

Irritable bowel syndrome (IBS) comprises a group of functional bowel disorders in which abdominal discomfort or pain are associated with defecation or a change in bowel habit and with features of disordered defecation. A lowered sensory threshold to rectal distention is a hallmark of IBS patients. The effect of acupuncture on IBS is elusive. In an open-design pilot study, the 101 patients with IBS that received a 4-week course of acupuncture presented an improvement in overall well-being and in bloating but not in abdominal discomfort or defecation frequency. A double-blind trial in patients with IBS showed no significant difference in the improvement of IBS symptoms between acupuncture and sham acupuncture, although the improvement seemed more consistent with acupuncture.

Little effort was made to investigate the efficacy of acupuncture on *constipation*, and there is scarce information in the literature. One study of 17 children with chronic constipation demonstrated that acupuncture gradually increased the plasma opioid level as well as the frequency of bowel movement to a value similar the control during a 10-week treatment period [6]. However, his findings were not confirmed in adult patients with constipation [7].

An acupoint considered very important for the treatment of constipation is Tianshu (ST25) [52]; the effects of manual stimulation were significantly superior to those obtained with medication, increasing the number of patients whose defecation was up to four times per week together with the rise in constipation score and patients' satisfaction. In another study on 100 patients with chronic functional constipation, the total positive results with moxibustion and acupuncture were 74 and 52 %, respectively [53].

The effect of electric acupuncture at "Tianshu" (ST 25) on colonic smooth muscle structure and interstitial nerve plexus was studied in rats with slow transit constipation [54]: the results showed that electrical stimulation of ST 25 improved the slow transit colon inducing structural changes too.

The efficacy of auricular therapy as treatment of constipation [55] was also reviewed, and 29 relevant studies, from 1994 to 2008, were considered. All articles reported positive results, but their findings cannot be generalized because of two significant methodological flaws: the uncertainty in acupoint identification and inconsistent protocols.

Our experience in this regard is summarized in a pilot study on ten patients with *multiple sclerosis* and *bowel dysfunctions* with prevalent constipation and, as a control group, ten patients with functional constipation. We investigated functional scores, quality of life, anorectal manometry scores, and bowel transit time after 2–4 weeks of acupuncture performed twice a week. The results were recapitulated as percentages of patients with up to four defecations per week after acupuncture: 70 % of severe functional constipation and 50 % of multiple sclerosis patients had normal bowel habits at the end of treatment; these results decreased respectively to 40 and 30 % at the 3-month follow-up, suggesting that a maintenance protocol of regular acupuncture session was needed.

5.3 Acupuncture for Urinary Tract Diseases

The use of acupuncture and electric acupuncture in the context of diseases of the urinary system has been and still is the subject of numerous experimental and clinical studies.

The efficacy of traditional Chinese acupuncture for *nocturnal enuresis* (NE) was reported to range from 76 to 98 %. Asian researchers identified the presence of nocturnal detrusor instability in up to one third of all "enuretic" children [56, 57], and NE failed to respond to standard treatment in 44 % of patients [58, 59] (the standard treatments include the bed-wetting alarm, used to facilitate waking up children with monosymptomatic enuresis, and the synthetic antidiuretic hormone that aims to reduce the volume of overnight urine or the antimuscarinic medication and urotherapy). Acupuncture therapy was reported to suppress uninhibited bladder contractions and to significantly improve wetting where there is urodynamic evidence of detrusor over activity.

The acupuncture points used to treat bladder dysfunction were located in areas innervated by spinal sacral segments S2 through S4 and were stated in the treatment protocols. The points BL 23, BL 28, BL 32, RN 3, RN 4, RN 6, and RN 12 were shown to influence the spinal micturition centers and parasympathetic innervation of the urinary tract [60], while the stimulation of scalp acupoints DU 20 and DU 14 modulated brain function via the inner temporal, thalamencephalon and prefrontal cortical systems [61]. The stimulation of the acupoints UB 20, UB 13, SP 6, ST 36, KI 3, and LU 9 was considered to invigorate the spleen, vital energy, and blood, thereby facilitating the normalization of the bladder function. The high concentration of neuroendocrine transmitters and hormones at acupuncture points was released and spread after needling and other stimulation [62, 63]. Functional magnetic resonance imaging (fMRI) and PET scan performed during natural or conventional bladder filling in healthy subjects showed activation of specific brain regions: the pons, midbrain periaqueductal gray, thalamus, hypothalamus, and frontal cortex [64]. During acupuncture at ST 36, fMRI indicated the activation of the hypothalamus and of the bilateral prefrontal cortex [65], suggesting that acupuncture utilized the neural brainstem–thalamus–cortex reticular system. The sustained activation of the hypothalamus was observed, as

well as the increase in concentration of some neurotransmitters, such as 5-HT [65, 66].

Therefore acupuncture may affect micturition or excitation through the descending serotonergic system. Simultaneous *electronencephalography* (EEG) and cystometric monitoring in urethane anesthetized male rats undergoing acupuncture showed that, after acupuncture stimulation on the sacral segment, bladder activity was suppressed in 53 % (36/68) trials and that in 61 % (22/36) of animals this was accompanied by an increased EEG amplitude [67]. A systematic review of both Western and Eastern studies, in which acupuncture was compared to other treatment(s), suggested encouraging results for children with enuresis. However, the quality of the reports limited identification of key parameters [68]. The study of Karaman et al. demonstrated that laser acupuncture therapy was significantly more beneficial compared to placebo in terms of complete dryness, partial improvement, and decrease in the mean number of weekly bed-wetting episodes.

Another use of acupuncture and electric acupuncture can be observed in the treatment of moderate and severe *benign prostatic hyperplasia (BHP)*. The prevalence of BPH is as high as 40 % in men in their 50s and 90 % in men in their 80s [8]. Current treatment options for BPH include watchful waiting, lifestyle modifications, alpha-blockers, 5-alpha-reductase inhibitors, phytochemicals, and BPH-related surgery [9]. Although most of the aforementioned therapies have various documented degrees of effectiveness in the management of BPH, their use is limited to specific patient populations or has side effects that interfere with the patients' quality of life [10].

Acupuncture is a traditional Chinese medicine treatment that has been commonly used in the management of *lower urinary tract symptoms* (LUTS) in China for thousands of years. The effects of acupuncture on LUTS are well documented in Chinese medicine textbooks and are supported by modern research studies too [11–13].

Ricci et al. [14] found that electric acupuncture (EA) had effects in decreasing urinary urgency and the number of voiding times that persisted after transurethral resection of the prostate [15]. found that EA could significantly increase the sphincter closing pressure in women with stress incontinence as compared with placebo, and [16] showed how acupuncture increased bladder capacity in patients with bladder instability. Besides its beneficial influence on urinary storage problems, acupuncture was found effective in the prevention of recurrent lower urinary tract infections in adult women [15, 16], in improving the quality of life of patients with chronic prostatitis [17] and in ameliorating primary monosymptomatic nocturnal enuresis [18]. Wang et al. found that acupuncture at point BL 33 had better effects than terazosin in improving International Prostate Symptom Score (IPSS), postvoid residual urine (PVR), and maximum urinary flow rate (Qmax) in patients diagnosed with mild to moderate BHP [19, 20]. They also found that acupoint EA at BL 33 had better effects on IPSS, but no difference on PVR and Qmax as compared with nonacupoint EA [21].

A particular use of acupuncture has been also experienced in *stroke survivors*. This patient group experiences a high prevalence (44–69 %) of *bladder dysfunction*;

this includes urinary retention, incomplete bladder emptying (IBE), detrusor external sphincter dyssynergia, and bladder hyperactivity [22]. Urinary retention may occur in approximately 29 % of the stroke patients in rehabilitation wards [23]. Catheterization is commonly performed to manage episodes of acute urinary retention in stroke survivors. However, indwelling catheters may affect rehabilitation activity or daily living, lead to urinary infection, and interfere with the reestablishment of a normal voiding pattern [24]. A significantly higher rate of urinary infection is observed in individuals with IBE [25]; thus, indwelling catheters should be removed as soon as possible. The incidence of IBE in stroke patients is initially 56 %, but it decreases to 32 % over time [25]. The use of α-blockers may increase emptying, but side effects such as orthostatic hypotension may affect patient rehabilitation.

Intermittent catheterization is another option for IBE management [26], but this procedure depends on patient ability and family support. Several studies on stroke survivors suggest that acupuncture therapy provides significant benefits for stroke patients [27–32]. Animal experiments demonstrated that EA could improve the bladder emptying function too [33, 34]. Only a few high-quality studies focused on this subject, most reports lack the appropriate inclusion criteria or objective tools to assess the treatment effects of EA. One randomized trial demonstrated that the stimulation of acupuncture points could improve poststroke urinary symptoms, but only moxibustion therapy was mentioned in their study [35].

Yu et al. [36] noted the beneficial effects of EA in stroke survivors with IBE, thereby making EA a potential safe modality with which to improve urinary function.

Acupuncture could improve the voiding function by regulating the peripheral afferent nerve system. The locations of the two acupoints, BL 28 and BL 32, are similarly distributed along the S2–S4 dermatomes. The voiding reflex center lies at the level of S2 to S4. BL 28 and BL 32 were stimulated by acupuncture to directly increase the excitability of the pelvic nerve, which innervates the detrusor muscle. In addition, SP 6 indirectly raises the excitability of the pelvic nerve. The increased detrusor pressure was previously observed after acupuncture treatment in animal experiments. The improvement in voiding function as an effect of acupuncture treatment was proven by clinical studies.

Bladder dysfunction is also a common problem associated with *multiple sclerosis* (MS), affecting up to 80 % of patients [36]. Current drug treatments, e.g., anticholinergics, are only partially effective and have substantial adverse effects [37]. Catheterization, although effective, is at the expense of the quality of life (QoL). The advantage of acupuncture is its safety because side effects rarely occur [38]. Two case reports described MS patients with bladder symptoms who were favorably treated with EA [39]. Furthermore, electrical stimulation of the acupuncture point SP 6, known as percutaneous tibial nerve stimulation (PTNS), was effective with regard to voiding dysfunction and QoL in patients with overactive bladder [40]. After inserting bilaterally two stainless steel needles (0.22 mm × 25 mm, single use), on acupuncture points SP 6 (posterior border of tibia) and SP 4 (medial edge of foot), connected with the EA device (20 Hz, for 30 min once a week for 10 weeks),

SH Tjon Eng Soe, DJ Kopsky et al. hypothesized that EA could provide a useful tool in MS patients with mild bladder dysfunction who do not wish to take medication or are unable to because of side effects [41].

5.4 Acupuncture for Sexual Dysfunction

Premature ejaculation (PE) is the most common male sexual complaint, affecting 20–30 % of all men [42]. Clinicians tend to use definitions of PE as described in one of the major guidelines [43–45]. The large array of definitions can be summarized in three main qualifications: short time interval between penetration and ejaculation, little or no voluntary control of ejaculation, and negative consequences, such as distress [46]. Daily selective serotonin-reuptake inhibitors (SSRIs) are the first choice of treatment in PE; however, this use is off label. Paroxetine, sertraline, and fluoxetine have all been evaluated in patients with PE, and paroxetine was found to have a substantially greater efficiency [47]. Recently, dapoxetine, a new SSRI with a short half-life, has become available in some countries for on-demand treatment of PE [48].

However, only one study has investigated acupuncture for the treatment of PE (Chen) [49]. A randomized controlled trial [50] was performed on ninety patients with PE, in the absence of other sexual diseases. The patients were randomly assigned to the paroxetine (20 mg/day), acupuncture (twice a week for 4 week in acupoints: ST 36, LI 4, KI 3, LR 3, EX-HN 3, CV 3 for 20 min), and placebo (sham acupuncture) groups. The results demonstrated that although less effective than daily intake of paroxetine, acupuncture had a significantly stronger ejaculation-delaying effect than placebo.

5.5 Conclusions

In conclusion acupuncture offers good opportunities for improving fecal incontinence, constipation, and genitourinary dysfunctions. Considering the high hospital costs associated with sacral nerve stimulation, acupuncture might be an alternative. Even if acupuncture requires repeated sessions in order to gain control of the symptoms, many patients would accept this inconvenience once the technique has been clearly explained.

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