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REVIEW

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Auriculotherapy in adults and elderly people with lower urinary tract symptoms: an integrative review

Auriculoterapia em adultos e idosos com sintomas do trato urinário inferior: revisão integrativa

Auriculoterapia en adultos y ancianos con síntomas del tracto urinario inferior: una revisión integradora

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ABSTRACT

Objective: To analyze the evidence available in the literature on the use of auriculotherapy in adults and elderly people with lower urinary tract symptoms. **Method:** An integrative literature review. Primary study search was carried out in nine relevant health databases. The characterization of studies regarding the method of application of auriculotherapy was based on the Revised Standards for Reporting Interventions in Clinical Trials of Acupuncture recommendations. **Results:** 296 studies were found, 17 pre-selected and eight included in the review. Favorable results from auriculotherapy were evidenced in specific populations, such as elderly men with prostatic disorders and individuals undergoing surgical procedures. The main urinary symptoms addressed were frequency, urgency, nocturia, incomplete voiding, intermittency, weak flow, effort to start urination, incontinence, and urinary retention. **Conclusion:** Despite the limited number of studies and weaknesses with regard to sample size and different intervention protocols, it is suggested that auriculotherapy, associated or not with other complementary therapies, may contribute to lower urinary tract symptom control in adults and elderly people.

DESCRIPTORS

Lower Urinary Tract Symptoms; Auriculotherapy; Acupuncture Ear; Nursing Care; Review.

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INTRODUCTION

Lower urinary tract symptom (LUTS) prevalence in adults, as well as the increased incidence due to older age and its high cost to the health system[1], has motivated studies to establish strategies to minimize their impact on the quality of life of individuals.

LUTS occur when one of the components of the normal urination process is affected, which consequently causes the urinary system to malfunction. Thus, changes in the cortex, brainstem, spinal cord, detrusor muscle or sphincter complex may prevent urination from occurring properly[2].

According to the International Continence Society (ICS), LUTS can be classified into symptoms of storage (frequency, urgency, nocturia, polyuria and incontinence), voiding (slow flow, intermittency, hesitation, dysuria, bladder pain, hematuria, urinary retention, among others) and post-voiding symptoms (feeling of incomplete voiding, urgency and post-voiding incontinence)[3-4].

International studies estimate a LUTS prevalence between 22 and 70.6% in men[5-6] and from 14 to 66% in women[6-7]. A Brazilian study, conducted between 2006 and 2007, estimated a prevalence of around 81.5% in men and 84.1% in women, with the most prevalent symptoms being nocturia, frequency, urgency and urinary incontinence[8]. It is suggested that the discrepancies presented by the studies are mainly due to different populations and divergences in sample data, such as age chosen and diagnostic criteria adopted[1].

Among the possible impacts related to LUTS in adults, one can mention the low quality of life, high risk of depression due to social isolation and sleep disorders[9]. In the male context, a recent study points out that LUTS predispose to the development of erectile dysfunction[10]. Moreover, in elderly people population, the presence of LUTS is associated with a risk between 1.5 and 2.3 times greater of falls[11].

Drug treatment is one of the most frequent therapies used to control LUTS, with alpha-adrenergic blockers and phosphodiesterase type 5 (iF5) inhibitors being the most commonly used oral therapy in clinical practice[12]. However, such drugs show an unsatisfactory response in about 30% of the treated population, being associated with a high rate of side effects, including lipothymia, postural hypotension, asthenia, decreased libido and abnormal ejaculation[12-13]. This fact has raised the possibility of implementing non-pharmacological approaches to this affection, such as integrative and complementary therapies such as auricular.

Ear therapy consists of a Traditional Chinese Medicine (TCM) therapeutic method in which the stimulus exerted on the auricular pavilion activates energy channels throughout the body[9]. In the late 1950s, Paul Nogier, a French physician, based on neurophysiological principles, systematized and disseminated auriculotherapy, a technique in which physical and psychosomatic disorders are treated by stimulating reflex areas in the ear[9], being considered the precursor of the French school[14].

It is worth mentioning that this therapy is contemplated by the Nursing Interventions Classification in a nursing intervention called "Acupressure"[15], and has been the target of investigations in clinical nursing practice. Among some examples, one can mention the improvement in quality of life[16], nausea/vomiting control[17] and constipation in cancer patients[18], and even as non-pharmacological therapy to control pain in certain clinical conditions, such as chronic pain in the spine[19] and labor[20].

In countries like China and France, the effect of auriculotherapy on voiding dysfunction has been investigated, especially for the control of storage, voiding and post-voiding symptoms in elderly men with benign prostatic hyperplasia[9], control of urinary incontinence after stroke[21] and in cases of postoperative urinary retention[22-23]. Moreover, in a case-control study, it was identified that certain auricular points (vegetative nervous system - VNS, bladder, ureter, kidney, urethra and internal genitals) showed different electrical conductivity between patients with and without LUTS, a fact that shows the possibility of adopting auricular diagnosis as a screening method in LUTS[24].

Thus, with the purpose of synthesizing evidence that can increase nurses' knowledge about the applicability of auriculotherapy for voiding dysfunctions, this study aimed to analyze the evidence available in the literature on the use of auriculotherapy in adults and elderly people with LUTS.

METHOD

Study type

The method of synthesis of knowledge adopted was the integrative review. To conduct this investigation, five steps were taken: elaboration of the research question (identification of the problem), search of the study literature, assessment of primary studies, data analysis and presentation of the review[25].

The guiding research question of the integrative review was "What evidence is available in the literature about the use of auriculotherapy in adults and elderly people with LUTS?". To construct the question, PICO strategy was used, with P for population (adults and elderly people), I for intervention (auriculotherapy) and for element O (outcome), they were considered LUTS (storage, voiding or post-voiding). It should be noted that element C, for comparison, although not directly implicit in the guiding question, considered treatments related to drug therapy, other complementary therapies or no treatment.

Search strategy

For each database, the controlled descriptors were combined using the Boolean operators OR and AND. Additionally, through the help of a librarian in the health sciences area, different search expressions were tested, and the strategy with broader results was established using the terms referring to Intervention (I) and Outcome (O).

As for descriptors related to Outcome (O), it should be noted that in addition to the general descriptors "Lower Urinary Tract Symptom" and "Urinary Disorders", specific terms of some urinary symptoms were adopted in order to expand the search results.

Thus, the search strategy used on MEDLINE via the US National Library of Medicine (PUBMED) was: ((("Acupuncture, Ear" [Mesh]) OR (Auriculotherapy [Mesh])

OR ("Acupuncture, Ear" [Title/Abstract] OR "Acupunctures, Auricular" [Title/Abstract] OR "Acupunctures, Ear" [Title/Abstract] OR "Auricular Acupunctures" [Title/Abstract] OR "Ear Acupunctures" [Title/Abstract] OR "Acupuncture, Auricular" [Title/Abstract] OR "Auricular Acupuncture" [Title/Abstract] OR "Ear Acupuncture" [Title/Abstract])))) AND ((((((("Lower Urinary Tract Symptoms" [Mesh]) OR "Urinary Retention" [Mesh]) OR "Urination Disorders" [Mesh]) OR "Urinary Incontinence" [Mesh])) OR ("Lower Urinary Tract Symptoms" [Title/Abstract] OR "Urinary Retention" [Title/Abstract] OR "Urination Disorders" [Title/Abstract] OR "Urinary Incontinence" [Title/Abstract] OR "Retention, Urinary" [Title/Abstract] OR "Disorder, Urination" [Title/Abstract] OR "Disorders, Urination" [Title/Abstract] OR "Urination Disorder" [Title/Abstract] OR "Incontinence, Urinary" [Title/Abstract])).

Still with the help of a librarian, the terms used in MEDLINE search via PUBMED were adapted for all databases. The other databases used were Virtual Health Library (VHL), Physiotherapy Evidence Database (PEDRO), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, SCOPUS, Cochrane, EMBASE and China Academic Journal. It is worth mentioning that in the Chinese database, the terms were inserted in English.

The search was initially carried out in December 2018 and updated in December 2019. The assessment and analysis of the results took place between January and March 2019, with complementation in December 2019.

Selection criteria

Primary studies conducted in adults and elderly people whose object of investigation was the use of auriculotherapy (auricular acupuncture or auriculotherapy) in LUTS control were included. Furthermore, languages for primary studies were not defined and translation was requested with a duly certified professional with experience in terms related to medical sciences for articles with languages other than English, Portuguese, and Spanish. Studies that involved only the application of systemic acupuncture or that addressed auricular diagnosis were excluded.

Data analysis and treatment

All titles found were grouped in two Microsoft Excel® spreadsheets to be independently assessed by two reviewers. Then, the title and summary of the articles were read, also independently, in order to compare the results of the individual selection and discuss the differences. Upon reaching 100% agreement between the spreadsheets, the articles were included to be read in full.

The study data were extracted using a form prepared by the study researchers, according to the recommendations of the Revised Standards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA)[26] for the method of application of auriculotherapy, being: title; author (s)/training area; journal; year of publication; country/language of the study; goals; methodological characteristics (design, sample size and loss of follow-up; inclusion and exclusion criteria); clinical data (number of patients by sex, age, diagnosis, duration of symptoms); description of interventions in the follow-up groups (treatment line, number of sessions, duration of treatment, application device, device length of stay, application points, uni or bilateral application, location of points, type of protocol, professional who performed the intervention, years of experience in the field; outcomes and assessment methods (number of assessments, intervals between them, measurement tools); data analysis; main results; conclusions.

All studies included in the review were classified according to level of evidence: level 1 – evidence from systematic review or meta-analysis of all relevant controlled randomized controlled trials; level 2 – evidence derived from at least one well-outlined randomized controlled clinical trial; level 3 – evidence obtained from well-outlined clinical trials without randomization; level 4 – evidence from well-outlined cohort and case-control studies; level 5 – evidence from systematic review of descriptive and qualitative studies; level 6 – evidence derived from a single descriptive or qualitative study; level 7 – evidence from the opinion of authorities and/or the report of expert committees[27].

RESULTS

A total of 296 studies were found in electronic searches. As they were duplicated, 35 were removed from the list. After reviewing titles and abstracts, 244 articles were excluded, so that 17 remained for full text analysis. Of these, eight involved only application of systemic acupuncture and one referred to auricular diagnosis in individuals with LUTS. Thus, eight articles were included in the review (Figure 1).

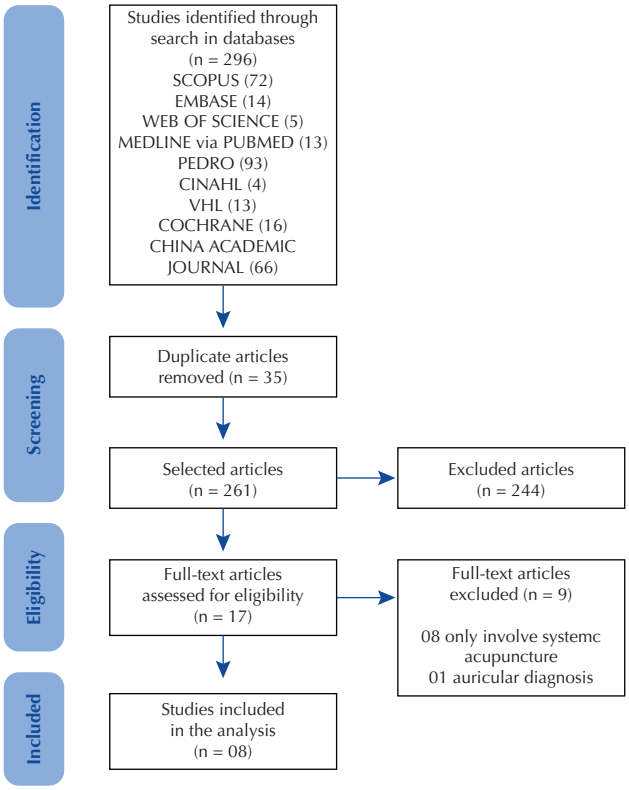

Figure 1 – Flowchart for selecting articles for the integrative review.

Of the eight articles included in the review, four were published in English[9,14,23,28], three in Chinese[21-22,29] and one in German[30]. Regarding the type of journal in which they were published, four were from health sciences journals and the others from specific TCM journals.

A total of 696 individuals participated in the selected studies, with ages varying between 25 and 88 years. In five of the eight studies the sample was composed only of male participants. As for the intervention, in three studies it was not possible to assess the isolated effect of auriculotherapy, since it was associated with other treatments (moxibustion, acupuncture/systemic electroacupuncture and application of infrared photons in the pelvic region)[14,21,28]. Control group participants received placebo or other treatments (systemic acupuncture, drug therapy and infrared photon application in the pelvic region), or routine care.

As for the level of evidence, five studies belong to level II and three to level III. Despite the studies dealing with different populations, it can be seen that, according to the results, auriculotherapy was effective in controlling LUTS in four of the five studies that assessed the intervention in isolation[9,22-23,29]. In cases where auriculotherapy was associated with another intervention[14,21,28], there was also effectiveness of the combined therapy for LUTS control.

Chart 1 presents the characterization of studies regarding research design, applied interventions, outcomes, measurement tools, number of assessments, main findings.

Chart 1 – Characterization of studies regarding research design, applied intervention, outcomes, measurement tools and main findings – Belo Horizonte, MG, Brazil, 2019.

Study identification	Study description	Outcomes	Measurement tools	Number of assessments	Main findings
Suen et al, 2019[9]	*Design:* RCT[a] double blind. *Objective:* to assess whether auriculotherapy with laser and magnet is more effective than just with magnet for treatment of LUTS[b] in elderly men. *Sample:* 62 men. *Control group:* 20 patients who received placebo (deactivated laser device + *Medulla Junci* patch). *Intervention group II:* 20 patients treated with laser therapy and magnet therapy at auricular points. *Intervention group III:* 22 patients treated only with magnet therapy at auricular points. *Limitations:* sample size and short follow-up time.	- LUTS[b] - Urinary flow rate (ml/s) - Residual urine (ml) - Quality of life - Sleep pattern - Satisfaction with therapy	I-PSS[e] Urofluxometry Doppler of the supra-pubic region I-PSS QoL[f] PSQI[g] Satisfaction questionnaire (0 to 10 points)	04 (baseline, 4th week, 1 and 3 months of follow-up)	Combination therapy (laser + magnet) had greater effects ($p < 0.05$) in controlling urinary symptoms, increased urinary flow and reduced residual urine.
Michel-Cherqui et al, 2019[23]	*Design:* double blind RCT[a]. *Objective:* to assess the effect of auriculotherapy in preventing postoperative urinary retention in patients undergoing thoracotomy. *Sample:* 50 men. *Control group:* 25 men received after anesthesia and before surgery five applications of adhesive tapes without needles in certain ear points. *Experimental group:* 25 men received anesthetic acupuncture after anesthesia and before surgery using semi-permanent needles at certain ear points. *Type of anesthesia:* combined (general and epidural). *Limitations:* sample composed only of male patients	- Urinary retention - Anxiety - Discomfort	Need for bladder catheterization during; Visual analog scale (0=no anxiety or stress; 10=maximum anxiety and stress)	01 (each patient was monitored during the day and the first night after surgery)	Auricular acupuncture is a safe and useful technique to reduce cases of postoperative urinary retention in patients undergoing thoracotomy.
Capodice et al, 2007[28]	*Design:* quasi-experimental *Objective:* to assess the effect of systemic and auricular acupuncture on urinary symptom control and quality of life in men with prostatitis and chronic pelvic pain. *Sample:* 10 men. *Intervention:* 12 sessions of systemic and ear acupuncture. *Limitations:* sample size, non-randomization, possible placebo effect.	- Dysuria - Frequency - Quality of life	NIH-CPSI[h] SF-36[i]	04 (baseline, 3 and 6 weeks of treatment, and 6 weeks of follow-up)	There was a statistically significant difference before and after intervention for pain, urinary symptoms and quality of life.

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Study identification	Study description	Outcomes	Measurement tools	Number of assessments	Main findings
Ricci et al, 2004[14]	*Design*: RCT[a]. *Objetivo:* to assess whether systemic and auricular electroacupuncture is effective in controlling LUTS[b] in patients undergoing transurethral resection of the prostate *Sample:* 42 men with urgent UI[c]. *Control group:* 14 placebo-treated patients. *Intervention Group I*: 15 patients treated with 5 mg oxybutynin. *Intervention Group II:* 13 patients treated with systemic and auricular electroacupuncture (5 to 10 Hz). *Limitations*: sample size.	- Prostatic volume - Urinary flow rate (ml/s) - LUTS[b] - UI[c] (no specification) - Quality of life	Transurethral ultrasound of the prostate Urofluxometry I-PSS[e] I-PSS QoL[f] Voiding diary	03 (baseline, 3 and 12 months) [14]	As for daytime urinary loss (voiding diary) in the intervention group I, there was a reduction of 8% and in the intervention group II, 20%. On nocturia, a reduction of 20% was found in the intervention group I and 60% in the intervention group II.
Tang et al, 2000[29]	*Design:* quasi-experimental. *Objective:* to assess the effect of auricular acupuncture associated with infrared therapy on LUTS[b] and prostate size in patients with BPH[d]. *Sample:* 120 men. *Control group I:* 30 patients who received auricular acupuncture. *Control group II:* 30 patients who received infrared therapy in the pelvic region. *Experimental group:* 60 patients who received combination therapies: auricular + infrared acupuncture *Limitations:* no.	- LUTS[b] - Prostatic volume	I-PSS[e] Digital rectal examination Prostate ultrasonography	02 (before and after)[29]	Ear acupuncture alone proved to be 83.3% effective, while infrared therapy alone, 76.7%.
Leilei 2015[21]	*Design:* RCT[a] *Objective:* to assess the clinical effect of moxibustion associated with auricular acupuncture in the treatment of UI[c] after stroke. *Sample:* 78 patients. *Control group:* 38 patients received routine nursing care. *Experimental group:* 40 patients received atrial therapy combined with moxibustion at systemic points. *Limitations:* no.	- UI[c] (no specification)	Patient report of occurrence or not of urinary loss	02 (baseline and 20 days of treatment)[21]	Auriculotherapy combined with moxibustion was effective in controlling UI[c] in patients with stroke ($p < 0.05$).
Bschleipfer et al, 2013[30]	*Design:* quasi-experimental. *Objective:* to assess whether ear acupuncture can cause urodynamic changes immediately after treatment in patients with detrusor hyperactivity. *Sample:* 14 patients. *Intervention:* an auricular acupuncture session. *Limitations:* sample size, single therapy session.	- UI[c] emergency (cystometry exam) - Bladder filling volume - Maximum detrusor pressure - Residual urine (ml)	Cystometry examination	02 (before and after)[30]	There was no statistically significant effect to control detrusor hyperactivity. There was a statistically significant reduction in residual urine volume after treatment ($p < 0.05$).
Huang, 2011[22]	*Design:* RCT[a]. *Objective:* to assess the clinical effect of auricular and systemic acupuncture in the treatment of urinary retention of patients in the postoperative period of abdominal hernia. *Sample:* 320 patients. *Intervention group:* 160 patients received auricular acupuncture. *Control group:* 160 patients received systemic acupuncture. *Type of anesthesia:* not described. *Limitations:* no.	- Urinary retention	Positive effect: urinary elimination within 8 hours after surgery. Negative effect: urinary elimination 8 hours after surgery.	01 (each patient was monitored until the 1st urinary elimination occurred or for a period up to 12 hours)[22]	Auricular acupuncture was effective in 95.62% of cases of urinary retention (n=153), and systemic acupuncture in 79.38% (n=127). A statistical difference was found between the groups ($p < 0.05$).

[a] RCT - Randomized Clinical Trial; [b] LUTS - lower urinary tract symptoms (frequency, urgency, nocturia, incomplete voiding, intermittency, weak flow and effort to start urination); [c] UI - urinary incontinence; [d] BPH - benign prostatic hyperplasia; [e] I-PSS - International Prostate Symptom Score; [f] I-PSS QoL - International Prostate Symptom Score Quality of Life; [g] PSQI - Pittsburg Sleep Quality Index; [h] NIH-CPSI - National Institute of Health Chronic Prostatitis Symptom Index; [i] SF-36 - Medical Outcomes Short-Form Health Survey. Note: (n=08).

The most assessed outcome among the studies was urinary frequency (4/8)[9,14,28-29], followed by urgency, nocturia, incomplete voiding, intermittency, weak flow and effort to start urination (n=3/8)[9,14,29]. Urinary incontinence was assessed by three studies[14,21,30], and in only one of them urgent urinary incontinence was specified. Still, two studies assessed urinary retention in patients undergoing surgical procedure[22-23]. Other outcomes assessed and not related to urinary aspects are general quality of life[30], sleep quality[9] and level of anxiety and discomfort[30].

The characteristics of the auriculotherapy intervention protocol are described in Chart 2, according to STRICTA recommendations[26].

Chart 2 – Protocol of auriculotherapy interventions to control lower urinary tract symptoms – Belo Horizonte, MG, Brazil, 2019.

Number of sessions and reference	Device	Lenght of stay	Type of stimulus	Points	Uni/bilateral application	Location of points and treatment line
04 (1 session per week for 4 weeks)[9]	Low energy laser Magnet inserts (130 Gauss; diameter: 1.76mm)	*Laser:* 1 minute in continuous mode *Magnets:* weekly change	//	Internal and external genitals Prostate Bladder Kidney Ureter	Unilateral (alternating the auricular pavilion)	Maps and manual detector/Chinese
01[23]	Semi-permanent needles (0.2 mm in diameter and 0.9 mm in length).	//	//	*Shenmen* Bladder Parasympathetic Hypothalamus Front	Bilateral	World Health Organization map/ French
12 (twice a week for 6 weeks)[28]	Auricular acupuncture needles (0.15 x 36 mm)	20 to 25 minutes	//	*Shenmen* Kidney Liver Spleen Lung	Unilateral (alternating the auricular pavilion)	Ear Maps/Chinese
18 (3 sessions per week for 4 weeks and 1 session every fortnight for 3 months)[14]	Acupuncture needle (15, 25 and 40 mm in length)	20 minutes	Electro-stimulation	Prostate External genitals	Unilateral (alternating the auricular pavilion)	Maps and manual detector/no description
20 (once a day at pre-defined intervals for 3 months)[29]	Auricular acupuncture: acupuncture needle (0.28 mm/2.54 cm)	30 minutes per session	//	Bladder, prostate, stomach, Internal genitals	//	// Chinese
02 (once a week for 2 weeks)[21]	Seeds	Changed weekly	Manual stimulation (pressing the seeds for 30 seconds, 03 times a day)	Bladder, urethra, pituitary, subcortex, occiput and liver	Unilateral (alternating the auricular pavilion)	// Chinese
01[30]	Acupuncture needles (diameter 0.22 mm)	20 to 30 minutes	//	VNS[a] Prostate Anterior bladder Posterior bladder Previous kidney Posterior kidney	Bilateral	Manual detector/ Chinese
01[22]	Acupuncture needle (size not specified)	30 minutes	Stimulation every 10 minutes	Bladder Triple heater (*San Jiao*) Urethra	Unilateral	// Chinese

[a]VNS – Vegetative Nervous System. Note: (n=08).

In all studies, the application of auriculotherapy occurred through fixed treatment protocols. The most used auricular points were bladder (n=6/8), prostate (n=4/8), internal or external genitals (n=4/8), vegetative or parasympathetic nervous system (n=3/8), ureter/urethra (n=3/8) and kidney (n=2/8). In relation to the devices applied, there was a predominance of needles (n=6/8), with the other devices used being laser, magnet inserts and seeds. Only one of the studies described information about the therapist's academic background who applied the auriculotherapy[23].

DISCUSSION

Despite the limited number of primary studies included and the diverse populations under study, it is suggested that auriculotherapy associated or not with other complementary therapies may contribute to control LUTS in adults and elderly people. It was found that the most used method was through a unilateral needle, at the bladder, urethra, ureter, kidney, prostate, internal and external genital points. The number of sessions was diversified, varying between one and 20, and the main parameters adopted to assess the technique were validated instruments for assessing urinary symptoms, followed by data from clinical examinations and/or physiological parameters, such as urinary flow rate and volume residual urine.

According to a report by the World Health Organization (WHO), published in 2003, among the affections of the urinary system that have proven efficacy of acupuncture, one can mention the retention and urinary incontinence[31]. It appears that investigations involving the effect of systemic acupuncture in LUTS control have had greater investments, when compared to auriculotherapy[32-34]. On the other hand, auriculotherapy is considered to be a simpler and less costly method to be implemented in clinical practice[22], a fact that has raised new investigations regarding the effectiveness of this therapy.

Regarding the type of device used between studies, the use of systemic and semi-permanent needles predominated.

It is known that acupuncture traditionally uses needles as a form of stimulation; however, due to the painful sensitivity at the time of application and the stay of needles in the ear, researchers and acupuncturists have verified the possibility of substitution, adopting, for instance, seeds and magnets[9]. Although studies addressing the difference in effect between needles and other ear devices for controlling LUTS have not been identified in the literature, there are reports in the literature of higher needle effects compared to seeds for stress reduction[35]. The main bias, associated with the use of seeds, is based on the need for stimulation. Thus, if a patient does not participate in the process, the results are compromised.

In this context, with the advancement of studies on auriculotherapy, new ways of performing it have emerged, among them the association of low frequency laser[9]. The therapeutic action of the laser occurs by the transformation of light energy into cellular chemical energy, i.e., the photochemical effect. The visible laser causes reactions in the mitochondria, with increased production of mitochondrial adenosine triphosphate (ATP), increased consumption of cellular glucose and intracellular calcium levels[36]. Therefore, the laser has been used in several health areas, including as an alternative to acupuncture needles, mainly because it is a less invasive and painless technique[9]. It is worth mentioning that a favorable effect of the laser for LUTS control was identified in a study of this review[9].

Another approach discussed in one of the studies was stimulation of auriculotherapy points with electrical or electronic devices[14]. In this type of application, as the stimulation is done by means of devices, the therapist does not need to manipulate needles. Additionally, the quantity and quality of stimulus can be regulated according to the treatment applied by the professional. Such electrical stimulus is applied to specific auricular points, aiding in the body's physiological recovery capacity, with a view to optimizing the adaptive response[37].

Regarding the auriculotherapy protocols identified, it was found that there is no uniformity in relation to the number of sessions, duration of treatment and points applied for LUTS control. However, there is an average number of 10 sessions. It is suggested that the non-uniformity of the protocols used is mainly due to the scarcity of investigations that address the theme, which highlights the importance of studies with robust methodologies, capable of supporting the implementation of clinically validated auricular protocols.

The main stimulated points were bladder, urethra, ureter, kidney, prostate and internal genitals, i.e., points directly related to the urinary system. Other relevant points addressed in the studies were the central nervous system (*Shenmen*) and the vegetative/parasympathetic nervous system. It is known that acupoints of the nervous system are considered essential in any therapy, as they are related to reducing stress, increasing energy flow and restoring health as a whole[38].

The location of the auricular points in the selected studies occurred mainly through the manual pressure detector and auricular maps. The location of the points may vary from one acuriculotherapy treatment line to another, such as between Chinese and French. Because of this, WHO has ordered the standardization of systemic and ear acupuncture points[39].

Concerning manual pressure detector use, it is known that the degree of sensitivity of an acupoint is generally related to the severity of the condition, i.e., the greater the sensitivity, the more severe the energy disturbance. Among the mechanisms that explain this condition, one can mention the fact that the real acupuncture points, when in conditions of imbalance, show higher concentrations of substance P, in comparison to placebo points. Substance P is a neurotransmitter found in afferent C fibers involved in pain transmission. Therefore, an increase in substance P lowers the pain threshold and makes the ear points more sensitive when touched[24].

On the other hand, currently, there are electric acupoints detectors, which, for research purposes, are considered more appropriate, as they favor less risk of bias in their location. It is known that acupoints, considered to be "energetically unbalanced", are detected by the electrical device through a difference in electrical resistance compared to the others.

As for the study in which no satisfactory results of auriculotherapy were found to control urinary incontinence, it is noteworthy that the author recognizes as limitations the sample size (n=14) and the fact that a single session of therapy was performed[30]. Despite the limitations mentioned, it was possible to identify a statistically significant reduction in residual urine volume after treatment ($p < 0.05$), which suggests a favorable effect of the intervention.

With regard to the parameters assessed by the studies and which are not directly related to urinary symptoms, such as quality of life, anxiety and sleep, it is known that auriculotherapy is a therapeutic technique with systemic action, whose objective is to try to reestablish the energy balance of the body as a whole[40]. Therefore, other symptoms can be improved, and not just those related to the main complaint. Furthermore, like other Integrative and Complementary Health Practices, auriculotherapy involves an approach that seeks to stimulate the natural mechanisms of health recovery, with an emphasis on welcoming listening, the development of the therapeutic bond and the integration of the human being with the environment and society, which contributes positively to the effect of the intervention[41].

In relation to the fact that only one study addressed the interventionist's training time, it is known that professionals' knowledge, experience regarding the application of the technique and clinical practice are important factors to achieve positive therapy results[35]. It is suggested that the reduction of acupuncture to "needling" is considered worrying, as it implies the loss of rationality that sustains it, in addition to reducing it to the appendix of biomedicine, appropriating it only at the technical level[42].

In two of the included studies, it was not possible to assess the effect of auriculotherapy in isolation, as it was associated with acupuncture[28] and systemic electroacupuncture[14]. It was decided to keep such investigations due to the scarce number of publications on the subject and, at the same time, the importance and relevance of knowing the results

obtained. Therefore, conducting experimental research that aims to test the effect of auriculotherapy, either as a single intervention or enhancing some other treatment and, mainly, with statistically representative samples, becomes necessary to prove the real benefits of this therapy.

Another limitation of this study refers to the fact that, in the search expression, only specific urinary symptoms were inserted, such as retention and urinary incontinence. It is noteworthy that this strategy was conducted with the help of a librarian and the objective was to expand the search results, and the general descriptors were maintained so that there was no restriction between the various LUTS.

CONCLUSION

This study reiterated the contribution and relevance of the integrative review method to identify evidence available in the literature about the use of auriculotherapy in adults and elderly people with voiding dysfunctions. Despite the limited number of primary studies and certain weaknesses with regard to sample size and different intervention protocols, it is suggested that auriculotherapy may contribute to control LUTS in adults and elderly people.

According to the included studies, it was possible to evidence favorable effects of the use of auriculotherapy in specific populations suffering from LUTS, such as elderly men with prostatic changes and individuals undergoing surgical procedures. The main urinary symptoms addressed were frequency, urgency, nocturia, incomplete voiding, intermittency, weak flow, effort to start urination, incontinence and urinary retention.

The most used points in the studies were: central nervous system (*Shenmen*), kidney, vegetative/parasympathetic nervous system, prostate (for men), bladder, ureter, urethra, internal and external genitals. As for the number of sessions, the average was 10 sessions, applied unilaterally, with alternation of the auricular pavilion at each session. The parameters most used to assess LUTS were validated and clinical instruments such as uroflowmetry, cystometry, supra pubic doppler and voiding diary.

Finally, the need to conduct new clinical studies is evident, in order to generate more consistent recommendations. The possibility of a greater insertion of nurses in the care related to adults and elderly people who suffer from voiding dysfunctions through auriculotherapy associated or not with other complementary, behavioral or medication treatments is also highlighted.

RESUMO

Objetivo: Analisar as evidências disponíveis na literatura sobre o uso da auriculoterapia em adultos e idosos com sintomas do trato urinário inferior. **Método:** Revisão integrativa da literatura. A busca dos estudos primários foi executada em nove bases de dados relevantes na área da saúde. A caracterização dos estudos quanto ao método de aplicação da auriculoterapia foi baseada nas recomendações do *Revised Standards for Reporting Interventions in Clinical Trials of Acupuncture*. **Resultados:** Foram localizados 296 estudos, 17 pré-selecionados e oito incluídos na revisão. Evidenciaram-se resultados favoráveis da auriculoterapia em populações específicas, tais como homens idosos com alterações prostáticas e indivíduos submetidos a procedimentos cirúrgicos. Os principais sintomas miccionais abordados foram frequência, urgência, noctúria, esvaziamento incompleto, intermitência, fluxo fraco, esforço para iniciar a micção, incontinência e retenção urinária. **Conclusão:** Apesar do limitado número de estudos e de fragilidades no que se refere ao tamanho amostral e diferentes protocolos de intervenção, sugere-se que a auriculoterapia, associada ou não a outras terapias complementares, pode contribuir para controle de sintomas do trato urinário inferior em adultos e idosos.

DESCRITORES

Sintomas do Trato Urinário Inferior; Auriculoterapia; Acupuntura Auricular; Cuidados de Enfermagem; Revisão.

RESUMEN

Objetivo: Analizar la evidencia disponible en la literatura sobre el uso de la terapia del oído en adultos y ancianos con síntomas del tracto urinario inferior. **Método:** Revisión integradora de la literatura. La búsqueda de estudios primarios se realizó en nueve bases de datos de salud relevantes. La caracterización de los estudios sobre el método de aplicación de la auriculoterapia se basó en las recomendaciones del *Revised Standards for Reporting Interventions in Clinical Trials of Acupuncture*. **Resultados:** Se encontraron 296 estudios, 17 preseleccionados y ocho incluidos en la revisión. Se evidenciaron resultados favorables de la auriculoterapia en poblaciones específicas, como hombres ancianos con alteraciones prostáticas e individuos sometidos a procedimientos quirúrgicos. Los principales síntomas urinarios abordados fueron frecuencia, urgencia, nicturia, vaciamiento incompleto, intermitencia, flujo débil, esfuerzo para iniciar la micción, incontinencia y retención urinaria. **Conclusión:** A pesar del número limitado de estudios y las debilidades en cuanto al tamaño de la muestra y los diferentes protocolos de intervención, se sugiere que la auriculoterapia, asociada o no a otras terapias complementarias, puede contribuir al control de los síntomas del tracto urinario inferior en adultos y ancianos.

DESCRIPTORES

Síntomas del Sistema Urinario Inferior; Auriculoterapía; Acupuntura Auricular; Atención de Enfermería; Revisión.

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