

Clinical Application of Zhuang Medicine Special Acupoint Umbilical Ring

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Abstract: This review systematically summarized recent advances in the clinical application of the Umbilical Ring Acupoint, a distinctive acupoint system in Zhuang medicine. Based on the theoretical frameworks of Three Pathways and Two Circuits, Triple Qi Synchronization, and bioholography, the umbilical region is regarded as a central hub for regulating systemic Qi dynamics. Current clinical studies indicate that acupuncture and related therapies targeting the Umbilical Ring Acupoint demonstrate favorable therapeutic effects in neurological disorders, dermatological and immune-related diseases, digestive system disorders, respiratory and metabolic conditions, as well as gynecological and reproductive dysfunctions. The underlying mechanisms may involve modulation of the neuro–endocrine–immune network, regulation of the gut–brain axis, and embryological and holographic characteristics of the umbilical region. In addition, recent technological innovations and standardized operational protocols have promoted the clinical applicability of this therapy. Despite limitations such as regional concentration of studies and insufficient mechanistic evidence, the Umbilical Ring Acupoint shows promising potential for further development within integrative medicine.

Keywords: Zhuang medicine; Umbilical ring acupoint; Acupuncture therapy; Three pathways and two circuits; Clinical application

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1. Theoretical foundations and localization of the unique umbilical ring acupoint in Zhuang medicine

1.1. The three Qi synchronization, three ways and two roads and the umbilical ring acupoint under the theory of biological holography the umbilical ring acupoint through the lens of Sanqi Tongbu, Sandao Lianglu, and bioholographic theories

The “Triple Qi Synchronization” (Sanqi Tongbu) theory in Zhuang medicine emphasized that the Qi of the three bodily regions—Celestial (Heaven), Terrestrial (Earth), and Human must maintain coordinated synchrony with nature ^[1]. This process relies on the pathway system formed by the “Three Pathways” (Sandao: Grain, Water, and Qi Pathways) and the

“Two Circuits” (Lianglu: Dragon and Fire Circuits) to be realized [2].

Concurrently, Zhuang medicine views the umbilicus as a holographic microcosm of the human body [3]. Within this theoretical framework, its projections correspond to the anatomical positions of the visceral organs. The Umbilical Ring Acupoint is regarded as the pivotal hub for regulating systemic Qi dynamics and ensuring the patency of the “Three Pathways and Two Circuits”. By stimulating this local region, it leverages networks such as circulation, nerves, and the lymphatic system to activate holistic regulatory effects. This approach aims to “regulate Qi, unblock pathways, and address the root cause of disease”, thereby achieving therapeutic synergy between local intervention and systemic response.

1.2. Localization method and zonal functions of the unique umbilical ring acupoint in Zhuang medicine

The unique Umbilical Ring Acupoint in Zhuang Medicine refers to a cluster of acupoints located around the umbilicus, categorized into two types: the Inner Umbilical Ring acupoints and the Outer Umbilical Ring acupoints. The inner ring is more commonly used in clinical practice. According to the definition in Chinese Zhuang Medical Acupuncture and Moxibustion, the Inner Umbilical Ring is a circular path traced 0.5 cun (approximately 1.5 cm) outward from the edge of the umbilical fossa. Specific acupoints are distributed along this ring. The clock-face orientation method is frequently employed: with the center of the umbilicus as the clock’s center, eight primary acupoints are selected on the Inner Umbilical Ring corresponding to the following positions and their respective organ systems and indications (**Table 1**).

Table 1. Umbilical ring acupoints (*Nei Qi Huan Xue*) location

Clock position	Target organ systems	Primary indications
12 o'clock	Brain, heart, upper limbs	Neuropsychiatric disorders, cardiovascular conditions
1.5 o'clock	Lungs	Respiratory diseases, immune dysfunction
3 o'clock	Spleen, stomach	Digestive disorders, metabolic imbalance
4.5 o'clock	Intestines (large/small)	Enteric inflammation, motility dysfunction
6 o'clock	Kidneys, bladder, reproductive organs	Urogenital diseases, infertility, edema
7.5 o'clock	Secondary intestinal zone	Chronic enteropathies
9 o'clock	Liver, gallbladder	Hepatobiliary disorders, emotional imbalance
10.5 o'clock	Auxiliary pulmonary zone	Asthma, allergic reactions

The Outer Umbilical Ring (**Figure 1**) typically comprises four cardinal acupoints (at 12, 3, 6, and 9 o'clock), which functionally correspond to and map onto their inner ring counterparts [4].

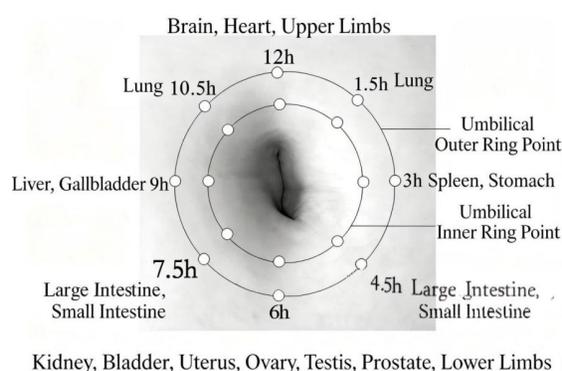


Figure 1. Zhuang Medicine umbilical ring acupoint, image source: Huang Jinming, *Zhuang Medical Acupuncture and Moxibustion*, 2017:107.

2. Research advances in clinical applications of acupuncture at the umbilical ring acupoint

2.1. Acupuncture techniques: The Tian Yinyang and Bagua needling methods

2.1.1. Operational protocol of the Tian Yinyang needling method at the umbilical ring acupoint

(1) Introduction to the Tian Yinyang needling method

The Yellow Emperor's Inner Canon (Huangdi Neijing) – *Suwen: Yifa Fangyi Lun* On Appropriate Methods for Different Regions states that the southern regions are abundant in Yang Qi and gather mists and dews. The local people prefer sour and fermented foods, resulting in dense skin texture, a reddish complexion, and a susceptibility to spasms and obstructions. Their conditions are suitably treated with fine needles (Weizhen), and thus the Nine Needle techniques also originated in the south. Based on this geographical climate and clinical practice, Zhuang medicine gradually summarized and developed the distinctive Tian Yinyang needling method. This technique stimulates the body's "Three Pathways and Two Circuits", regulates the synchronized operation of the Qi of Heaven, Earth, and Man, thereby achieving the therapeutic effects of harmonizing Qi and blood, balancing Yin and Yang, and stabilizing the viscera.

(2) Operational protocol of the Tian Yinyang needling method at the umbilical ring acupoint

The Tian Yinyang needling method is guided by the theory of "Triple Qi Synchronization" (Sanqi Tongbu), with the core of the procedure being the selection of the Umbilical Ring Acupoint. During operation, the patient is first instructed to perform compound breathing exercises to calm the mind and eliminate distracting thoughts, facilitating the coordination and synchronization of the body's internal and external Qi. The needling employs a superficial insertion technique, adhering to the principles of being painless and comfortable^[5]. Lifting, thrusting, and rotating manipulations are not applied, nor is the elicitation of sensations like soreness, numbness, or distension deliberately pursued. After the arrival of Qi (Deqi), patients often feel a warm current radiating from the navel throughout the body, while a cool sensation is discharged from the palms and soles, leading to overall comfort. This signifies "the arrival of Qi indicating efficacy". As the pivotal hub where the Qi of Heaven, Earth, and Grain converge and transform within the human body, gentle superficial needling at the Umbilical Ring Acupoint can stimulate righteous Qi (Zhengqi), harmonize Yin and Yang, and ultimately achieve the therapeutic goal of synchronizing the Qi of the three regions, leading to mutual regulation and transformation.

(3) Characteristics of the Tian Yinyang needling method at the umbilical ring acupoint

Regulating Qi as the Foundation, Disease Resolved as Qi Moves: This needling method is based on the theoretical tenet that "all diseases involving stagnation belong to Qi"^[6]. It posits that needling the Umbilical Ring Acupoint can stimulate the body's righteous Qi, clear toxic pathogens obstructing the "Three Pathways and Two Circuits", achieve "harmonious Qi and unblocked pathways" and thereby reach the state of Triple Qi Synchronization and self-resolution of disease. Operationally, during needle retention, no manual manipulation is applied, relying instead on the body's self-regulatory capacity to achieve a bidirectional effect: it can tonify righteous Qi in deficiency patterns, promote Qi movement and activate blood in excess patterns with Qi stagnation, and dissipate nodules and reduce swelling in excess patterns with masses. This embodies the characteristic of bidirectional regulation through supplementation and drainage, rooted in "regulating Qi as the foundation, with disease resolved as Qi moves".

(4) Harmonizing the spirit as the essence, a clear spirit ensures a healthy body

The "Spirit" (Shen) resides in the superior Celestial region of the human body and favors clarity. This needling method regulates Qi dynamics by stimulating the Umbilical Ring Acupoint, promoting the ascent of clear Qi to nourish the heart-mind (Shen) and the descent of turbid Qi for excretion. Thus, it organically integrates "regulating Qi" and "harmonizing the Spirit". The two aspects are mutually reinforcing: stabilized Qi leads to a tranquil Spirit, and regulating Qi serves to nourish the Spirit; conversely, harmonizing the Spirit can also regulate Qi. Ultimately, through the harmonization of Qi and blood and the abundance of righteous Qi, the goal of nurturing

the Spirit and achieving physical and mental well-being is realized.

2.1.2. Operational protocol of the Bagua needling method at the umbilical ring acupoint

Based on the localization method of the Umbilical Ring Acupoint within the Zhuang medical theory of “Yin-Yang as the Root”, the Bagua localization method divides the area into eight primary acupoints according to the orientations of the Postnatal Bagua. For example (Table 2), the Kun trigram corresponds to the lungs zone (1 o'clock direction on the umbilical ring), and the Li trigram corresponds to the heart zone (12 o'clock direction).

Table 2. Umbilical clock position and bagua trigram

Eight Trigrams and Five Elements		Zhuang medicine umbilical ring point			Hologram	Three pathways-two circuits	Function regulation clinical practice
Bagua	Wu Xing	Zone	Inner Ring	Outer Ring			
Li South	Fire	Zone 1 (12 o'clock)	Head, heart, brain	upper limb	The heart and brain system	Fire Pathway (Huolu): Governs divine regulation and Qi circulation	Palpitations, insomnia, mental abnormalities, and headaches
Kun Southwest	Earth	Zone 2 (1 o'clock)	lungs	Heart, brain	Lung immune	Qi Pathway (Qidao): Manages respiration and detoxification	Cough, asthma and skin disease are caused by external infection of toxins
Dui West	Metals	Zone 3 (3 o'clock)	Spleen, stomach		Spleen and stomach system	Grain Pathway (Gudao): Controls nutrient transport and blood production	It can relieve abdominal distension, diarrhea, indigestion and stomach pain
Qian Northwest	Ministerial Fire	Zone 4 (5 o'clock)	intestines	Spleen, stomach	Sanjiao life gate Spread and suppress	Dragon Pathway (Longlu): Facilitates Qi transformation and metabolic regulation	It is used to treat cold and heat disorders, metabolic disorders, and to treat pain in the ribs, jaundice, and depression

In clinical application, needles are inserted deeply according to the Bagua orientations, combined with rotary reinforcement and reduction techniques^[7]. The needles are retained in the patient's body for 30 minutes. During needle manipulation, the rotation speed should ideally be 120–200 rotations/min, sustained for 30 seconds. When performing the technique to “activate the channel and guide Qi”, the needle is held with consistent force while performing slow lifting and thrusting movements. This manipulation is neither purely tonifying nor purely reducing; its purpose is specifically to promote channel circulation and guide Qi^[8].

2.2. Research advances in clinical applications of acupuncture at the umbilical ring acupoint

2.2.1. Neurological disorders: Regulating the “dragon circuit” (blood circulation pathway) and the “fire circuit” (bodily signal transduction pathway)

In Zhuang medicine theory, the “Dragon Circuit” and the “Fire Circuit” together constitute the core network for information transmission and energy distribution within the human body. Specifically, the Dragon Circuit governs blood circulation, while the Fire Circuit regulates neural conduction. Dysfunction in these pathways is closely associated with various neurological disorders (Table 3). Song Ning et al. found that using Zhuang medicinal thread moxibustion combined with acupuncture at the Umbilical Ring Acupoint for acute migraine attacks reduced the pain VAS score by 50% within 30 minutes, with an analgesic duration lasting 8.2 hours, outperforming the oral ibuprofen group^[9]. This effect

may stem from the modulation of the trigeminovascular system and the inhibition of the release of pain mediators such as CGRP. Regarding insomnia treatment, Li Yuxuan et al. reported that acupuncture at the 12 o'clock zone (heart-brain zone) of the Umbilical Ring Acupoint combined with warm needling at Yongquan (KI1) significantly improved insomnia of the heart-kidney non-interaction type ^[10]. The PSQI score decreased by 42%, with HAMD and HAMA scores decreasing by 38% and 35%, respectively. Animal studies ^[11-13] further revealed that its mechanism involves upregulating hypothalamic 5-HT levels and modulating the 5-HT1A/Gαi/o/cAMP and 5-HT2A/Gαq/11/BDNF signaling pathways. Wei Yi et al. supplemented these findings, noting that this therapy also increases GABA content, decreases glutamate, and restores the excitatory-inhibitory balance of the nervous system ^[14].

Table 3. Comparison of clinical efficacy of umbilical ring acupoint in treating neurological diseases

Type of disease	Intervention study	Sample capacity	Main outcome indicator	Curative effect
Cephalagra	Acupuncture of umbilical ring acupoint + moxibustion with medicinal thread	Not reported	PainVAS score	Within 30 minutes, it drops by 50% and lasts for 8.2 hours
Insomnia of heart and kidney interaction	Urine ring acupoint + warm needle Yongquan	Not reported	PSQI grade	↓ 42% ($p < 0.01$)
PCPA insomnia model	Umbilical ring acupoint + insomnia acupoint	Rat experiment	Hypothalamus 5-HT	↑ 55% ($p < 0.001$)
Sleep disorders after stroke	Umbilical inner ring acupoint + conventional acupuncture	96 cases	total sleep time	Up to 35%, sleep efficiency up to 32%

For Post-Stroke Sleep Disturbance (PSSD), recent research indicates that adding needling of the inner umbilical ring points to conventional “awakening the brain and opening the orifices” acupuncture significantly improves patients’ sleep architecture and cerebral circulation ^[15]. After 4 weeks of treatment, total sleep time increased by 35%, the proportion of deep sleep increased by 28%, sleep efficiency improved by 32%, and nocturnal awakenings decreased by 40%. This effect may be mediated through the “gut-brain axis”, regulating the synthesis of gut-derived sleep substances (e.g., melatonin precursors), thereby influencing the central sleep-wake regulatory network.

In summary, the Umbilical Ring Acupoint exerts multi-faceted clinical value in the treatment of neurological disorders by regulating the “Dragon Circuit” (blood circulation pathway) and the “Fire Circuit” (bodily signal transduction pathway) through multiple pathways.

2.2.2. Dermatological and immune disorders: Balancing “fire circuit” function

According to Zhuang medicine theory, the “Fire Circuit”, as the body’s core information-sensing pathway, exhibits a high degree of correspondence with the neuro-endocrine-immune network in modern medicine. The role of the Umbilical Ring Acupoint in immune-related skin diseases, particularly chronic eczema, has received preliminary validation. Xie Yuhua et al., in their study on chronic eczema of the blood deficiency-wind dryness type, showed that acupuncture at the Umbilical Ring Acupoint was superior to conventional drug therapy (compound glycyrrhizin tablets combined with mometasone furoate cream) in regulating Th1/Th2 immune balance ^[16,17]. The marked-effective rate in the treatment group reached 65.0%, significantly higher than the 45.0% in the control group ($p < 0.05$). Regarding immune indicators, serum IFN- γ levels increased by 45% and IL-2 by 32% in the treatment group; whereas IL-4 decreased by 28% and IL-5 by 34%, with the Th1/Th2 ratio recovering from 0.9 to 1.8 ($p < 0.001$). This immune remodeling effect confirms the regulatory role of the Umbilical Ring Acupoint on ***“Fire Circuit”*** function. The mechanism may involve neuropeptide (e.g., SP, CGRP)-mediated skin-immune dialogue, regulating Langerhans cell and T lymphocyte activity, thereby attenuating inflammatory

responses. Notably, the umbilicus serves as an important lymphatic convergence area in the human body. Its superficial and deep lymphatic vessels drain into axillary lymph nodes, superficial inguinal lymph nodes, as well as parasternal, external iliac, and lumbar lymph nodes, respectively. This anatomical structure may provide the morphological basis for the systemic immunomodulatory effects generated by umbilical stimulation.

2.2.3. Digestive system disorders: Regulating “grain pathway” function

Zhuang medicine categorizes the digestive system as the “Grain Pathway”, responsible for receiving and digesting food and drink, and serving as the source of Qi and blood production. The Umbilical Ring Acupoint plays a significant role in regulating “Grain Pathway” function, demonstrating clear clinical efficacy for diseases such as ulcerative colitis (UC), irritable bowel syndrome (IBS), and functional constipation. He Jun et al. showed that using ginger-partitioned moxibustion at the inner umbilical ring combined with acupuncture in patients with UC of the spleen-kidney Yang deficiency type significantly reduced serum pro-inflammatory cytokine levels, with TNF- α and IL-8 decreasing by 32% and 28%, respectively ($p < 0.01$, $p < 0.05$)^[18]. The mechanism is related to inhibiting the NF- κ B pathway and upregulating TGF- β 1 expression, thereby promoting intestinal mucosal repair. The thermal effect of ginger-partitioned moxibustion and herbal penetration, synergized by the umbilicus’ rich vascular and lymphatic structures, enhances the local anti-inflammatory effect. Xiao Qian et al., in a randomized controlled trial of 72 IBS patients, demonstrated that acupuncture at the Umbilical Ring Acupoint was superior to conventional acupuncture and oral Chinese herbal medicine in improving abdominal pain, bloating, and quality of life^[19]. The abdominal pain VAS score decreased by an average of 4.2 points, and the IBS-QOL score increased by 18.5 points, outperforming the control groups (all $*p^* < 0.05$). This effect may be related to modulating the gut-brain axis and reducing visceral hypersensitivity. As the starting point of embryonic development, the umbilicus retains direct connections with the enteric nervous system; stimulation can re-establish the functional balance between the dorsal motor nucleus of the vagus and the myenteric plexus. Regarding functional constipation, Ning Yuyin et al. found that applying a Yang-warming Qi-tonifying paste to the kidney zone of the Umbilical Ring Acupoint was more effective for Yang deficiency constipation than applying a rhubarb paste to the Shenque (CV8) acupoint in the control group^[20]. The treatment group achieved 3.2 ± 0.8 spontaneous bowel movements per week (control group: 1.5 ± 0.6 , $*p^* < 0.001$). Liu Chunqiang further confirmed that acupuncture at the Umbilical Ring Acupoint was superior to the Western medicine control group in both TCM syndrome scores and spontaneous complete bowel movement frequency ($p < 0.05$)^[21]. The mechanism may be related to enhancing colonic 5-HT secretion and vagal tone. The embryonic vascular structures in the umbilical region and their potential connection to the portal venous system may be the key anatomical basis for effect transmission.

2.2.4. Respiratory and metabolic disorders: Coordinating “Qi pathway” and “water pathway”

Zhuang medicine posits that the “Qi Pathway” and “Water Pathway” govern respiration and fluid metabolism, respectively. The Umbilical Ring Acupoint demonstrates unique value in treating respiratory and metabolic disorders by coordinating these two pathways. Zhang Jianye et al. showed that adding acupuncture at the Umbilical Ring Acupoint to conventional drug therapy significantly improved lung function and inflammatory status in patients with stable COPD^[22]. In the combination therapy group, serum IL-6, TNF- α , and TGF- β 1 decreased by 40%, 35%, and 28%, respectively, and the FEV1/FVC ratio increased by 12%, outperforming the drug-only group. The mechanism may involve umbilical stimulation regulating bronchial function via the celiac plexus-lung reflex arc and inhibiting systemic inflammatory cascades. For edema-related diseases, Zhang Yan et al., based on the “Three Pathways and Two Circuits” theory, indicated that needling the kidney zone of the Umbilical Ring Acupoint can regulate AQP4 aquaporin expression and restore fluid balance^[23]. The mechanism of action involves three levels: neurologically, regulating renal blood flow and filtration via T10-L1 spinal nerves; endocrinologically, influencing ADH and aldosterone secretion; and immunologically, reducing vascular permeability by inhibiting inflammatory factors, thereby comprehensively regulating “Water Pathway” function.

2.2.5. Gynecological and reproductive system disorders: Balancing fire and water equilibrium

In Zhuang medicine theory, reproductive function belongs to the “Water Pathway” category, with the physiological basis of “Fire and Water in Harmony”. The Umbilical Ring Acupoint has a clear role in regulating gynecological disorders such as menstrual irregularities and reproductive dysfunction. Tang Mochou et al. showed that using the Umbilical Ring Acupoint combined with medicinal thread moxibustion in patients with liver depression-type menstrual irregularities effectively improved unsmooth menstruation and related emotional symptoms ^[24]. The mechanism is related to regulating the hypothalamic-pituitary-ovarian axis function, promoting estrogen metabolism towards the 2-hydroxylation pathway (beneficial pathway) and inhibiting the 4-hydroxylation pathway (potential carcinogenic pathway), thereby alleviating abnormal endometrial stimulation from high estrogen. Anatomically, the umbilicus connects to the bladder via the urachal remnant, and the round ligament of the uterus extends to the labia majora. This embryological continuity provides a morphological basis for umbilical stimulation to regulate pelvic reproductive function.

3. Multidisciplinary exploration of the mechanisms of action of acupuncture at the umbilical ring acupoint

3.1. Neuro-endocrine-immune network regulatory mechanisms

Modern research has revealed the mechanism of action of the Umbilical Ring Acupoint from a neurobiological perspective. As a region densely innervated in the human body, the umbilicus primarily receives innervation from the T10–L1 spinal nerve segments and forms reflex connections with abdominal viscera via splanchnic nerves. fMRI studies indicate that umbilical stimulation can significantly modulate default mode network activity, enhancing interoceptive processing capacity in brain regions such as the insula. This central effect is primarily achieved through two pathways: the somatosensory-autonomic pathway, where signals are transmitted via the spinal dorsal horn and activate hypothalamic autonomic centers; and the vagal-nucleus tractus solitarius pathway, involving mechanotransduction mediated by TRPV1 channels in gut-brain information transmission.

At the molecular level, stimulation of the Umbilical Ring Acupoint exhibits multi-target regulatory characteristics. Metabolomics shows that post-stimulation, serum levels of anti-inflammatory metabolites such as resolvins and ATP precursors increase, while pro-inflammatory mediators like prostaglandins decrease. Proteomics further indicates that stimulation of specific umbilical zones can induce the expression of cytoprotective proteins such as HSP70 and SOD2, enhancing tissue repair capacity. These findings provide a modern scientific interpretation of the traditional effects of the Umbilical Ring Acupoint: “regulating Qi, detoxifying, and tonifying deficiency”.

3.2. Bioholographic theory and embryological development mechanisms

Bioholographic theory provides a crucial perspective for understanding the zonal effects of the Umbilical Ring Acupoint. The umbilicus is viewed as a “holographic microcosm” of the human body, its distribution pattern resembling the projection of an upright fetus. This understanding is supported by embryology: as the primary center of embryonic development, the umbilicus retains pluripotent mesenchymal stem cells and epigenetic memory, which can activate tissue regeneration programs under specific stimulation. The vascular architecture of the umbilicus forms the structural basis for its holographic function. The embryonic umbilical vessels (two arteries, one vein) evolve into ligamentous structures after birth but retain micro-lumens and endothelial cells, potentially connecting to the portal venous system. This unique vascular framework makes the umbilicus a hub for material exchange and signal transduction, potentially explaining the phenomenon of local stimulation producing systemic effects.

3.3. Gut microbiota-gut-brain axis mechanism

Recent research has begun to focus on the regulatory role of the Umbilical Ring Acupoint on the “gut-brain axis”. Animal experiments show that umbilical stimulation can significantly increase the abundance of beneficial gut bacteria such as

Faecalibacterium prausnitzii. As a key regulator of mucosal immunity, its metabolite butyrate can enhance intestinal barrier function and reduce endotoxin entry into the bloodstream. Simultaneously, these microbial metabolites can act on the central nervous system via vagal afferents and blood circulation, influencing neurotransmitter synthesis and neuroinflammatory responses. This modulation of the microbiota-gut-brain axis may be an important mechanism through which the Umbilical Ring Acupoint improves post-stroke sleep disturbances and mood disorders.

4. Technological innovations and standardization advances in Zhuang medicine's umbilical ring acupoint acupuncture

4.1. Auxiliary device for the Tian Yinyang aromatic moxibustion-needle combined therapy

Traditional manipulation of the Umbilical Ring Acupoint faces technical challenges: the eight acupoints of the inner umbilical ring are densely distributed (within a diameter of only 1–2 cm), making manual needle insertion prone to interfering with already inserted needles. Furthermore, when combining needling, moxibustion, and aromatherapy, the three modalities easily interfere with each other. To address this issue, Professor Huang Jinming's team, in collaboration with Guangxi University of Chinese Medicine, developed an auxiliary device for the Tian Yinyang aromatic moxibustion-needle combined therapy, achieving a standardized innovation in technical operation. The device adopts a nested upper-lower component design: the upper component integrates a moxa cone combustion chamber (with adjustable slots) and eight essential oil diffusion grooves; the lower component is equipped with eight 15°-angled needle guide holes, guiding the needles to be inserted radially and precisely. Clinical verification confirms three major advantages of this device:

- (1) It ensures the synchronous and precise positioning of all eight needles, avoiding operational interference;
- (2) It allows for even heat distribution, where the moxibustion heat enhances the diffusion effect of the essential oils through thermally conductive materials;
- (3) It improves safety, featuring an ash-bearing mesh to prevent burns and a thermal insulation coating to prevent heat diffusion. This innovation transforms the originally complex triple therapy (needling, moxibustion, aromatherapy) into a clinically applicable technique suitable for standardized promotion.

4.2. Evidence-based optimization of the acupuncture operation protocol for the Zhuang medicine umbilical ring acupoint

Based on clinical practice, a consensus framework for the operation protocol of the Umbilical Ring Acupoint has been established:

- (1) Micro-needle superficial insertion technique
Uses 0.18 × 15 mm filiform needles with an insertion depth of 2–3 mm (reaching only the subcutaneous layer). It emphasizes "painless needle insertion" and "not deliberately pursuing Deqi (needle sensation)". This forms a sharp contrast with the traditional Chinese medicine concept of deep insertion to obtain Deqi.
- (2) Tripartite (heaven-man-earth) acupoint selection method
Selects corresponding acupoints from the Celestial region (12–4.5 o'clock), Human region (4.5–7.5 o'clock), and Terrestrial region (7.5–12 o'clock) based on the disease location, achieving holistic regulation through the principle of "Heaven and Human corresponding".
- (3) Energy dynamic regulation
Patients often report sensations of energy flow during treatment, such as "warmth radiating from the navel" and "coolness discharging from the hands and feet", which are regarded as hallmark responses indicating "the arrival of Qi signifies efficacy".

Regarding special therapies like the Silkie Chicken Umbilical Therapy ("navel wind suction"), research proposes its potential biophysical mechanism: the temperature difference between the chicken's body heat (40–42°C) and the abdominal cavity creates thermal convection, while the rhythmic contraction of the anal sphincter produces a negative

pressure suction effect, simulating the physical therapeutic principle of “cupping”. This explanation endows the traditional therapy with a modern scientific connotation.

5. Issues and future prospects

5.1. Current limitations in research

This field of study presents the following primary limitations: Geographic Concentration: Over 90% of the research is concentrated in Guangxi Province, lacking validation through multi-center trials, which limits the generalizability of the findings. Weaknesses in Mechanism Research: Investigations often remain at a macro-descriptive level, lacking support from omics technologies and other cutting-edge methodologies. This results in insufficient explanation of key issues such as “acupoint specificity”. Imbalanced Disease Spectrum: Research is overly focused on conditions like insomnia and eczema, with insufficient attention paid to major diseases such as cancer and metabolic syndrome. These areas will be the focus of continued investigation.

5.2. Future research directions

Future research should focus on: Applying single-cell spatial omics to analyze the response of the umbilical microenvironment to stimulation. Establishing organoid models to simulate umbilical-target organ crosstalk. Expanding the scope of disease research to areas such as adjunctive cancer therapy and autoimmune diseases. Promoting interdisciplinary integration by developing AI-assisted acupoint selection systems and conducting multinational multicenter randomized controlled trials (RCTs).

6. Summary

Based on the theories of the “Three Pathways and Two Circuits” and biology, the Zhuang medicine Umbilical Ring Acupoint has evolved from folk experience into a systematic diagnostic and therapeutic framework. By regulating the neuro-immune-endocrine network and the gut-brain axis, it demonstrates unique advantages in treating conditions such as Post-Stroke Sleep Disturbance (total sleep time ↑ 35%), refractory eczema (marked-effective rate 65%), and irritable bowel syndrome, highlighting the clinical value of the umbilicus as the pivotal hub for “Triple Qi Synchronization”.

Future efforts should integrate single-cell omics and optogenetics to deepen mechanistic understanding, and develop AI-assisted standardized devices to expand into new fields such as adjunctive cancer therapy. Through extensive international collaboration, the Zhuang medical wisdom encapsulated in the axiom, “One Umbilicus Connects the Whole Body; Triple Qi Dynamics Anchor the Cosmos”, holds promise for developing into an exemplary model within integrative medicine.

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