

Review

A Discussion on Chronomedicine in the Treatment of Constipation Based on the Najia Method of Midnight-Noon Ebb-Flow Theory

Xiaoru Zhou¹, Jing Liu¹, Yaming Xu¹ and Ruihui Wang^{1,*}

¹ Shaanxi University of Chinese Medicine, Xianyang, China

* Correspondence: Ruihui Wang, Shaanxi University of Chinese Medicine, Xianyang, China

Abstract: This paper systematically discusses the diagnostic and therapeutic principles of applying chronomedicine to the management of constipation from the perspective of the Najia method of midnight-noon ebb-flow theory. Also known as biological clock therapy, chronomedicine employs midnight-noon ebb-flow acupuncture to select acupoints according to the diurnal waxing and waning of qi and blood as well as the opening-closing rhythm of meridians, serving as an important component of traditional Chinese medicine chronoacupuncture therapy. The Najia method matches the twelve meridians with the ten heavenly stems and calculates the timing for activating five-shu points based on the heavenly stems of days and hours alongside the generation sequence of the five elements. Compared with the Nazi method, it demonstrates superior efficacy in treating chronic disorders arising from long-term dysfunction of multiple zang-fu organs. Constipation is a prevalent digestive condition characterized by prolonged defecation intervals, dry stools, and straining during bowel movements. Its core pathogenesis involves impaired transportation function of the large intestine and obstructed fu-qi, frequently accompanied by disorders of qi, blood, and body fluid metabolism as well as dysfunction of multiple zang-fu organs. The fundamental therapeutic principles aim to unblock fu-qi and restore the intestinal transportation rhythm in accordance with natural circadian timing. Current clinical observations indicate that chronotherapeutic strategies guided by the Najia method, including timed acupuncture, timed auricular point stimulation, timed acupoint application, and timed herbal foot bath, can effectively improve defecation outcomes and achieve superior overall therapeutic efficacy compared with conventional non-timed approaches. As a carrier for chronomedicine, the Najia method provides novel therapeutic avenues for constipation management, facilitates exploration into the temporal pathogenesis of intestinal disorders, and merits broader application in primary clinical settings.

Keywords: constipation; chronomedicine; acupuncture; midnight-noon ebb-flow; traditional chinese medicine

Received: 18 June 2026

Revised: 11 August 2026

Accepted: 24 August 2026

Published: 31 August 2026



Copyright: © 2026 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

With the transformation of lifestyles in contemporary society, an increasing number of individuals adopt sedentary behavioral patterns, consume diets high in processed carbohydrates and low in dietary fiber, and maintain inconsistent sleep-wake cycles and meal timing. These factors collectively contribute to a rising prevalence of chronic constipation, a condition characterized by infrequent bowel movements, straining during defecation, a sensation of incomplete evacuation, or a persistent feeling of rectal obstruction. Within the theoretical framework of Traditional Chinese Medicine, constipation is classified under syndromes such as 'difficult defecation' and 'retarded bowel movement', reflecting underlying imbalances in qi movement, fluid metabolism, and zang-fu organ function. Due to its multifactorial etiology and tendency toward recurrence, chronic constipation often leads to secondary complications including abdominal distension and discomfort, hemorrhoidal exacerbation, sleep disturbances

such as insomnia, and emotional manifestations like irritability or low mood—each of which significantly diminishes overall quality of life and functional capacity [1]. Current clinical management frequently relies on pharmacological laxatives or standardized acupuncture protocols targeting fixed acupoints; however, such approaches commonly overlook the intrinsic temporal dynamics of physiological processes, particularly the cyclical fluctuations of qi and blood distribution across meridians throughout the day, thereby limiting long-term therapeutic sustainability.

The conceptual foundation of midnight-noon ebb-flow acupuncture originates from the classical TCM principle of 'harmony between human physiology and natural rhythms', as systematically articulated in foundational texts such as the *Huangdi Neijing*. This chronobiological paradigm encompasses two complementary acupoint selection strategies: the Najia method and the Nazi method. The Nazi method determines optimal treatment timing and point selection based on the correspondence between earthly branches, diurnal hours, and the waxing and waning of qi and blood within specific meridians. In contrast, the Najia method integrates the ten heavenly stems with daily and hourly time units to allocate zang-fu organ functions and meridian activity, enabling precise identification of activated five-shu points for regulating complex, multi-organ qi disturbances. Given that chronic constipation typically evolves over extended periods and involves interrelated dysfunction across multiple organ systems—including the lung (governing qi and descending fluids), spleen (transforming and transporting), stomach (receiving and ripening), liver (regulating qi flow), and kidney (storing essence and governing water metabolism)—the Najia method's capacity for trans-meridian, time-synchronized modulation aligns closely with the pathophysiological complexity of this condition. Drawing upon both classical TCM theory and emerging evidence from modern chronobiology, this paper systematically examines the relationship between the twelve two-hour temporal segments and patterns of constipation onset, synthesizes clinical experience regarding the application of the Najia method across diverse external therapeutic modalities—including acupuncture, moxibustion, and acupoint stimulation—and provides a theoretically grounded basis for time-optimized therapeutic approaches.

2. Overview of Midnight-Noon Ebb-Flow Theory and the Najia Method

Midnight-noon ebb-flow theory constitutes the foundational framework of Traditional Chinese Medicine (TCM) chronomedicine, systematically articulating the dynamic correspondence between natural diurnal rhythms and the cyclical perfusion of qi and blood across the twelve primary meridians. Within this model, the temporal markers 'Zi' (midnight, 11 p.m.–1 a.m.) and 'Wu' (noon, 11 a.m.–1 p.m.) serve as critical pivot points for yin-yang transformation, reflecting the macrocosmic principle that all physiological processes undergo rhythmic alternation in accordance with celestial cycles. The metaphor of 'ebb-flow' conveys the tidal-like oscillation of vital substances—where each meridian experiences peak functional activity and maximal qi-blood abundance during its designated two-hour period, thereby exhibiting heightened responsiveness to therapeutic intervention. This temporal sequencing follows a precise, unidirectional loop: Lung Meridian governs the hours of Yinshi (3–5 a.m.), followed by Large Intestine Meridian (5–7 a.m.), Stomach Meridian (7–9 a.m.), Spleen Meridian (9–11 a.m.), Heart Meridian (11 a.m.–1 p.m.), Small Intestine Meridian (1–3 p.m.), Bladder Meridian (3–5 p.m.), Kidney Meridian (5–7 p.m.), Pericardium Meridian (7–9 p.m.), Triple Energizer Meridian (9–11 p.m.), Gallbladder Meridian (11 p.m.–1 a.m.), and Liver Meridian (1–3 a.m.), completing a full circadian circuit that integrates organ function, meridian dynamics, and environmental time.

Also known as the heavenly stem method, the Najia system represents an advanced elaboration of midnight-noon ebb-flow principles, originally documented in classical acupuncture texts and subsequently refined into a comprehensive daily acupoint activation protocol. Its theoretical architecture rests upon the systematic assignment of the twelve meridians to the ten heavenly stems: Jia corresponds to Gallbladder, Yi to Liver,

Bing to Small Intestine, Ding to Heart, Wu to Stomach, Ji to Spleen, Geng to Large Intestine, Xin to Lung, Ren to Bladder, and Gui to Kidney; the Triple Energizer is associated with Ren, while the Pericardium shares Gui. The method operates under the principle of synchronizing therapeutic timing with cosmic correspondences—yang meridians are preferentially activated during yang hours on days governed by yang stems, and yin meridians during yin hours on yin-stem days. Acupoint selection proceeds sequentially from well points through spring, stream (source), river, and sea points, aligned with the five-element generating cycle. A full activation cycle spans ten days, enabling longitudinal modulation of meridian qi. Practitioners determine optimal acupoints by integrating the heavenly stem of the treatment day with that of the hour, then applying appropriate stimulation techniques—including tonifying or sedating approaches—at source and connecting points, guided by clinical assessment of excess or deficiency patterns.

The Nazi method focuses on regulating qi and blood of a single meridian within one day. In contrast, the Najia method covers multiple meridians over a ten-day cycle to regulate qi movement, making it more suitable for chronic constipation featuring prolonged illness and simultaneous disorders of multiple zang-fu organs. It realizes treatment conforming to natural timing, unblocking meridians and harmonizing fu-qi [2]. This extended temporal scope allows for deeper systemic regulation, particularly in cases where pathogenic factors have become entrenched and involve interrelated dysfunction across several organ systems. By aligning interventions with both daily and decadal celestial cycles, the Najia method supports gradual restoration of homeostatic balance rather than isolated symptomatic relief. Its structured progression facilitates cumulative therapeutic effects, especially in conditions characterized by sluggish qi movement, impaired transformation and transportation functions, and long-standing disharmony between zang and fu organs. Furthermore, the method's emphasis on rhythmic, phased activation enhances adaptability to individual constitutional variations and seasonal influences, reinforcing the TCM principle of personalized, time-sensitive care grounded in natural law.

3. Pathogenesis of Constipation from the Perspective of Chronomedicine

3.1. TCM Chronological Theory: Rhythm Disorder and Impaired Transportation of the Large Intestine

The Huangdi Neijing's Plain Questions—Treatise on Regulating Mental Activities in Accordance with Four Seasons underscores the fundamental principle that human physiological functions must harmonize with natural diurnal and seasonal cycles [1]. Within this framework, the two-hour period known as Maoshi (5:00–7:00 a.m.) corresponds to the peak activity of the Large Intestine Meridian, during which qi and blood flow is most abundant in this channel, facilitating optimal peristaltic propulsion and waste elimination. Prolonged bed rest or delayed rising during this critical window impedes the natural ascent of yang qi, thereby disrupting the dynamic balance of qi and blood circulation in the Large Intestine Meridian and diminishing its capacity for effective transportation. Furthermore, traditional Chinese medicine recognizes a profound functional interrelationship between the lung and large intestine as paired zang-fu organs; the lung governs the descending movement of qi, particularly during Yinshi (3:00–5:00 a.m.), and its proper function is essential to support the downward movement of intestinal contents. When lung qi fails to descend adequately, the physiological mechanism metaphorically described as 'lifting the kettle to uncover the lid'—where lung descent initiates and regulates intestinal motility—is compromised, leading to impaired colonic transit and constipation.

Each zang-fu organ exhibits time-specific functional peaks aligned with the twelve earthly branches, forming an intrinsic chronobiological architecture governing digestion, absorption, and excretion. During Sishi (9:00–11:00 a.m.), the spleen reaches its maximal functional capacity for transforming food essence and transporting qi and blood; disruption of routine activities during this phase—such as skipping breakfast or excessive

mental strain—weakens spleen transportation, resulting in insufficient generation of vital substances and diminished propulsive force, thereby predisposing individuals to qi deficiency-type constipation [2]. Similarly, Youshi (5:00–7:00 p.m.) represents the temporal domain of kidney yin, whose moistening and lubricating influence is indispensable for maintaining intestinal fluidity; chronic depletion of kidney yin during this period—often due to overwork or inadequate rest—reduces intestinal hydration and contributes to yin deficiency constipation characterized by dry, hard stools. Choushi (1:00–3:00 a.m.), governed by the liver meridian, is crucial for smooth qi flow and emotional regulation; late-night wakefulness or irregular sleep patterns during this phase induce liver qi stagnation, which in turn obstructs fu-qi movement and inhibits coordinated defecation reflexes. Collectively, persistent misalignment between personal daily routines and these endogenous circadian rhythms engenders systemic disharmony in zang-fu organ qi-blood dynamics, ultimately destabilizing the large intestine's rhythmic transportation function and promoting chronic, recurrent constipation.

3.2. Modern Chronomedicine: Disturbance of Intestinal Biological Clock

Contemporary scientific investigations have established that human physiology is regulated by a hierarchical system of circadian clocks. At the apex resides the suprachiasmatic nucleus located in the hypothalamus, which serves as the primary timekeeper coordinating systemic rhythmicity. Concurrently, peripheral tissues—including the gastrointestinal tract—harbor autonomous molecular clock mechanisms capable of sustaining intrinsic oscillations [3]. Key intestinal functions such as colonic propulsive activity, the gastrocolic reflex, rhythmic secretion of gastrointestinal peptides including ghrelin and peptide YY, and dynamic fluctuations in microbial composition and metabolic output all exhibit robust 24-hour periodicity. Notably, peak colonic motility observed in healthy individuals during early morning hours aligns temporally with the traditional Chinese medicine concept of the Large Intestine Meridian's functional predominance during the Maoshi time period, suggesting potential convergence between chronobiological findings and classical physiological frameworks.

Chronic exposure to nonstandard sleep–wake patterns—such as habitual late-night activity or inconsistent daily routines—alters endogenous timing signals, leading to desynchronization among central and peripheral clocks. This temporal misalignment affects neurotransmitter dynamics, particularly serotonin synthesis and release, and modifies the pulsatile secretion profile of motilin, a key regulator of phase III migrating motor complexes. Additionally, it compromises the electrophysiological integrity of interstitial cells of Cajal, which function as pacemakers for gut motility. Such alterations further perturb the diurnal oscillation patterns of commensal microbiota, diminish colonic contractile amplitude and frequency, and extend fecal transit duration—collectively contributing to the pathophysiology of functional constipation [2]. These insights into intestinal chronobiology reinforce the scientific plausibility of time-based therapeutic interventions grounded in traditional concepts of cyclical physiological variation.

4. Correlation between Qi-Blood Disorder of Meridians in Twelve Two-Hour Periods and Constipation

Within the framework of the midnight-noon ebb-flow system, physiological fluctuations in qi and blood across the twelve meridians follow a cyclical temporal pattern aligned with the two-hour divisions of the day. Disruptions to this natural rhythm—whether due to lifestyle irregularities, environmental stressors, or constitutional imbalances—may impair the functional coordination among zang-fu organs, disturb the directional movement of qi (particularly its ascending and descending dynamics), and compromise the generation, distribution, and transformation of body fluids. These interrelated pathophysiological mechanisms collectively contribute to altered colonic motility, reduced intestinal secretion, and diminished peristaltic propulsion, thereby predisposing individuals to constipation or exacerbating its chronicity [3].

During Yinshi (3:00–5:00), the Lung Meridian is predominant. The lung governs the descending movement of qi and maintains an interior-exterior relationship with the large intestine. When lung qi is insufficient or when heat accumulates in the lung channel, the normal descent of lung qi is impeded, weakening its regulatory influence on large intestine function. This results in diminished propulsive force for fecal transit, clinically presenting as incomplete evacuation, prolonged straining during morning defecation, and a sensation of residual fullness despite evacuation attempts [3].

Maoshi (5:00–7:00) corresponds to the peak activity of the Large Intestine Meridian [4]. This period represents the optimal physiological window for intestinal peristalsis and coordinated defecation reflexes. Prolonged bed rest or delayed rising during Maoshi interferes with the natural activation of intestinal motility, leading to sluggish qi and blood circulation within the large intestine meridian. Consequently, waste material remains retained longer than physiologically appropriate, promoting water reabsorption from stool and contributing significantly to the development and persistence of chronic constipation.

Chenshi (7:00–9:00) reflects the dominant phase of the Stomach Meridian [5]. As the stomach governs reception and initial digestion, dietary irregularities—including excessive consumption of rich, greasy, or processed foods—can lead to food stagnation. Over time, such stagnation may transform into internal heat, which consumes yin fluids along the digestive tract. This depletion reduces intestinal lubrication, increases stool hardness, and diminishes the efficiency of colonic transit, manifesting as dry, pellet-like stools and infrequent bowel movements.

Sishi (9:00–11:00) is governed by the Spleen Meridian. The spleen plays a central role in generating qi, blood, and body fluids through postnatal transformation and transportation. When spleen function is compromised—due to overwork, poor dietary habits, or aging—the resulting deficiency leads to inadequate qi to propel intestinal contents forward and insufficient body fluid to maintain mucosal hydration and stool softness. This pattern is especially prevalent in older adults and individuals recovering from childbirth, where constitutional qi and fluid reserves are comparatively diminished [1].

Wushi (11:00–13:00) aligns with the Heart Meridian's peak activity. Although the heart does not directly govern digestion, its functional state influences fluid metabolism via its connection with the small intestine. Excess heat in the heart channel may transmit downward, affecting small intestine function and accelerating fluid loss. Concurrently, blood deficiency limits nourishment to the intestinal tissues, reducing their elasticity and secretory capacity, thereby intensifying intestinal dryness and slowing transit.

Weishi (13:00–15:00) corresponds to the Small Intestine Meridian. A key physiological function of the small intestine is the separation of clear (nutritive) from turbid (waste) substances, including the regulation of fluid distribution. When this process is suboptimal, insufficient moisture is directed toward the large intestine, compromising stool consistency and colonic hydration. This imbalance contributes to hard, dry stools and increased effort during defecation.

Shenshi (15:00–17:00) is associated with the Bladder Meridian. The bladder's role in qi transformation extends beyond urinary excretion to include broader aspects of water metabolism throughout the body [6]. Impaired bladder qi transformation disrupts systemic fluid balance, limiting the availability of moisture for intestinal lubrication. Additionally, as yang qi begins to converge during this period, any underlying qi stagnation becomes more pronounced, further inhibiting the downward movement of fu-organ qi required for effective defecation.

Youshi (17:00–19:00) reflects the Kidney Meridian's active phase. The kidneys regulate overall fluid homeostasis and support the physiological processes of both urination and defecation. Deficiency of kidney yin leads to insufficiency of moistening fluids in the intestines, while deficiency of kidney yang results in diminished warming and transformative functions, causing cold accumulation that slows intestinal motility. These distinct patterns give rise to yin-deficient constipation characterized by dry stools

and thirst, and cold-type constipation marked by cold limbs, pale complexion, and aversion to cold [7].

Xushi (19:00–21:00) corresponds to the Pericardium Meridian. Emotional factors, particularly sustained mental tension or emotional constraint, can induce qi stagnation in the pericardium channel, which indirectly affects the large intestine through shared regulatory pathways involving the autonomic nervous system and neuroendocrine signaling. This mechanism underlies many cases of functional constipation where bowel habits are closely tied to psychological states, without structural or biochemical abnormalities.

Haishi (21:00–23:00) is governed by the Triple Energizer Meridian, which serves as the primary conduit for the circulation of qi and body fluids across all three jiao regions [4]. Dysfunction in triple energizer qi transformation leads to generalized impairment in fluid transport and qi movement, resulting in systemic stagnation that manifests as abdominal distension, sluggish intestinal transit, and difficulty initiating defecation.

Zishi (23:00–1:00) marks the peak activity of the Gallbladder Meridian and coincides with the initial generation of yang qi for the new day [8]. Late-night wakefulness during this critical restorative phase depletes nascent yang qi, undermining the energetic foundation required for subsequent organ functions, including intestinal motility. Chronic sleep deprivation during Zishi progressively weakens the dynamic capacity of the fu-organs to perform their descending and transporting roles.

Choushi (1:00–3:00) is governed by the Liver Meridian, whose primary function includes the smooth conveyance of qi throughout the body. Inadequate rest during Choushi impedes liver qi regulation, leading to qi stagnation that may further evolve into heat. This obstructs the downward flow of fu-qi, disrupts intestinal coordination, and produces symptoms such as epigastric or lower abdominal distension, bloating, and delayed or difficult defecation.

Collectively, these observations indicate that temporal dysregulation of qi and blood circulation across the twelve meridians constitutes a fundamental pathogenic factor in recurrent and refractory constipation. Conventional interventions focused solely on laxative effects address only surface manifestations and fail to restore underlying rhythmic harmony. A more comprehensive therapeutic strategy must therefore integrate chronobiological principles, emphasizing lifestyle alignment with natural circadian cycles and incorporating time-specific interventions—such as precisely timed acupoint stimulation based on the Najia method—to realign meridian activity with physiological timing and promote sustainable restoration of intestinal function [9].

5. Clinical Application of the Najia Method of Midnight-Noon Ebb-Flow Theory in Constipation Treatment

The greatest merit of the Najia method lies in its ability to transcend the temporal limitation of single-meridian activation within a 24-hour cycle. By organizing therapeutic timing according to the ten-day heavenly stem cycle, it enables systematic, trans-meridian regulation that aligns with the dynamic physiological rhythms of the zang-fu organs. This approach is especially valuable for managing chronic constipation accompanied by complex, multi-system imbalances—such as spleen-stomach deficiency, liver-qi stagnation, or kidney-yin insufficiency. In clinical practice, it is frequently integrated with time-sensitive traditional Chinese medicine external modalities—including acupuncture, moxibustion, and herbal patching—to enhance therapeutic precision and physiological coordination.

5.1. Timed Acupuncture with the Najia Method

Timed acupuncture under the Najia method is grounded in the theoretical framework of traditional Chinese medicine, particularly the correspondence between celestial stems, earthly branches, and the cyclical flow of qi within the meridian system. This approach systematically selects acupoints according to the specific stem-branch combination of the day and hour, thereby aligning therapeutic intervention with the

dynamic physiological rhythms of the body. The activated acupoints—determined through precise stem-branch calculations—serve as primary points, while supplementary acupoints are selected based on individualized syndrome differentiation for constipation, such as qi stagnation, fu-heat excess, lung qi failing to descend, or spleen qi deficiency. Key meridians involved include the Large Intestine Meridian (Geng), Lung Meridian (Xin), Spleen Meridian (Ji), Stomach Meridian (Wu), Liver Meridian (Yi), and Kidney Meridian (Gui). For instance, during yang hours on Geng days, stimulation of the five-shu points along the Large Intestine Meridian enhances the movement of qi and clears fu-heat, thereby resolving constipation rooted in qi stagnation and excess heat. On Xin days during yin hours, acupoints of the Lung Meridian are prioritized to regulate lung qi's descending function, supporting the so-called 'kettle-lid lifting' mechanism that facilitates intestinal peristalsis. Similarly, on Ji days, targeted activation of Spleen Meridian points reinforces spleen qi, improves transformation and transportation functions, and addresses constipation arising from deficient propulsive force due to chronic spleen insufficiency.

Clinical evidence accumulated through rigorously designed controlled trials indicates that timed acupuncture using the Najia method yields superior outcomes in managing functional constipation and post-stroke constipation compared with conventional fixed-point acupuncture. These benefits encompass a statistically significant reduction in the time to first spontaneous defecation, measurable improvements in stool form, frequency, and ease of passage, as well as favorable modulation of gastrointestinal hormone profiles—including motilin, ghrelin, and vasoactive intestinal peptide. Furthermore, longitudinal follow-up data suggest a notably lower recurrence rate over extended observation periods. Mechanistically, this modality operates by synchronizing stimulation with the natural waxing and waning pattern of meridian qi, thereby optimizing neurohumoral signaling, enhancing autonomic regulation of colonic motility, and promoting bidirectional communication along the gut-brain axis [3]. Such temporal precision supports the restoration of endogenous circadian rhythms governing intestinal secretion, absorption, and propulsion, contributing to sustainable physiological rebalancing rather than transient symptomatic relief.

5.2. Timed Auricular Point Pressing with the Najia Method

The auricle serves as a microsystem reflecting the entire body, with all twelve primary meridians converging upon it; consequently, qi and blood from these meridians ascend to and nourish the ear [10]. Within the framework of traditional Chinese medicine chronobiology, the Najia method employs the ten-day heavenly stem cycle to determine physiologically optimal treatment windows, aligning therapeutic intervention with dynamic fluctuations in organ-system activity. Selected auricular points—including those corresponding to the Large Intestine, Lung, Spleen, Constipation Point, and Subcortex—are manually stimulated through gentle but sustained pressure. On Geng and Xin days—associated with metal element dominance—targeted stimulation of Lung and Large Intestine points facilitates the dispersion of stagnant fu-qi and enhances descending function of the large intestine. On Ji days—linked to earth element and spleen-pancreas system—Spleen point activation supports transformation and transportation functions, thereby improving digestive efficiency and stool formation. This time-synchronized approach concurrently mobilizes qi and blood across multiple meridian networks, modulates neuroendocrine pathways including the hypothalamic-pituitary-adrenal axis, and enhances the threshold sensitivity and coordination of the defecation reflex arc. Its non-invasive nature, minimal equipment requirements, and ease of self-application make it particularly suitable for geriatric populations and individuals with needle phobia or contraindications to conventional acupuncture.

5.3. Timed Acupoint Application and Herbal Foot Bath with the Najia Method

The feet serve as critical anatomical loci where yin and yang meridians originate and terminate, establishing a foundational connection between the lower extremities and systemic meridian circulation. Shenque (CV8), located at the umbilicus, functions as a pivotal convergence point for qi and blood from multiple meridians, thereby enhancing

its therapeutic significance in regulating visceral function. Timed interventions—specifically herbal foot baths and topical acupoint application at Shenque—are strategically scheduled according to the Najia method, which correlates temporal cycles with meridian qi abundance, particularly during peak activity of the Lung, Spleen, and Large Intestine Meridians. For constipation characterized by excess patterns, formulations emphasize qi activation and fu-qi unblocking to restore dynamic motility; conversely, deficiency-type constipation is addressed with prescriptions that replenish qi, nourish yin, and lubricate the intestinal tract. The thermal component of the foot bath promotes transdermal absorption of bioactive herbal constituents, facilitating their entry into the meridian system, harmonizing triple energizer qi flow, optimizing body fluid metabolism and distribution, guiding rebellious qi downward, and supporting the large intestine's intrinsic peristaltic and transport functions.

5.4. Timed Lifestyle Guidance and Daoyin Intervention

Abdominal massage and diaphragmatic breathing are performed during time periods aligned with the physiological activity peaks of corresponding meridians, as determined by the traditional Najia temporal calculation method. Patients are advised to consume breakfast during Chenshi (7–9 a.m.), a period associated with optimal gastric motility, thereby supporting activation of the gastrocolic reflex. Defecation training is systematically scheduled during Maoshi (9–11 a.m.), when spleen-pancreas function is traditionally considered most active, facilitating consistent bowel habit formation. This time-coordinated approach harmonizes therapeutic practices with natural circadian rhythms and physiological cycles, enhancing treatment consistency and reinforcing long-term functional outcomes through structured daily routine integration [2].

6. Exploration on TCM Etiology and Pathogenesis of Constipation

6.1. Impaired Transportation of the Large Intestine as the Core Pathogenesis

The Suwen section Linglan Midian Lun states that the large intestine functions as the official responsible for transportation, transforming waste material and facilitating its excretion. Constipation fundamentally involves dysfunction of this organ system, with impaired transportation representing the central pathogenic mechanism. This impairment may arise from multiple etiological factors, including invasion by external pathogenic influences, dietary irregularities, emotional imbalances, physiological decline associated with aging, or constitutional weakness. These factors collectively give rise to two broad categories of pathogenesis: excess patterns characterized by obstruction and deficiency patterns marked by insufficiency of vital substances. Excess-type constipation encompasses conditions such as accumulation of heat in the gastrointestinal tract, stagnation of qi flow, and internal cold congealing the intestines. Deficiency-type constipation includes insufficient qi to propel intestinal movement, blood deficiency failing to moisten and nourish the intestinal tract, yin deficiency resulting in inadequate body fluids, and yang deficiency accompanied by cold accumulation. In clinical practice, chronic constipation frequently manifests as complex patterns combining both excess and deficiency elements. Overreliance on strong purgative therapies risks depleting healthy qi, potentially leading to symptom recurrence and further weakening of digestive function over time.

6.2. Mutual Influence of Dysfunction among Multiple Zang-Fu Organs

The physiological function of the large intestine—particularly its role in waste transportation and elimination—depends on coordinated interactions among several zang-fu organs. The lung facilitates downward movement of qi, thereby supporting peristaltic propulsion and colonic motility. The spleen contributes through its function of transforming and transporting nutrients and fluids, ensuring adequate production of qi, blood, and body fluids essential for intestinal integrity and lubrication. The liver ensures smooth flow of qi throughout the body, preventing stagnation that may impair intestinal transit. The kidney governs fluid metabolism and plays a key role in maintaining

hydration balance, which directly influences stool consistency and defecatory rhythm. Clinically, isolated large intestine dysfunction is uncommon; chronic constipation typically reflects progressive, interrelated imbalances across these organ systems. This systemic perspective underscores the therapeutic rationale for integrative approaches—such as trans-meridian timed regulation—that address temporal and functional synergies rather than focusing narrowly on local acupoints within a single meridian [5, 11].

6.3. Imbalanced Chronological Yin-Yang, Qi and Blood as the Underlying Root Cause

The diurnal oscillation of yin and yang forms the foundational temporal framework regulating the rhythmic circulation of qi, blood, and body fluids throughout the human organism. Adherence to natural circadian patterns supports the physiological coordination of yang qi's ascending and descending movements, ensures timely moistening of the intestinal tract by body fluids, and facilitates the regular elimination of metabolic waste. When daily routines deviate significantly from endogenous circadian cues—such as through irregular sleep-wake cycles, nocturnal activity, or mistimed meals—the harmonious alternation of yin and yang becomes misaligned. This misalignment propagates downstream effects, including desynchronization in the timing of qi and blood circulation, impaired distribution of body fluids to the large intestine, and reduced peristaltic efficiency, collectively contributing to the pathogenesis of functional constipation. Chronomedicine therefore emphasizes realignment of these intrinsic biological rhythms as a central therapeutic strategy, targeting restoration of the physiological yin-yang balance and its associated regulatory functions over gastrointestinal motility and hydration.

7. Existing Problems and Prospects

Although the Najia method of midnight-noon ebb-flow theory demonstrates distinctive clinical advantages in managing functional constipation, several methodological and practical limitations hinder its broader integration into routine practice. First, the intricate computation involving heavenly stems and earthly branches poses significant cognitive and pedagogical challenges for frontline clinicians, particularly those with limited training in classical Chinese calendrical systems, thereby impeding widespread adoption and fidelity of application. Second, the current body of clinical evidence remains largely confined to single-center studies with small sample sizes, often lacking rigorous design elements such as allocation concealment, blinded outcome assessment, and pre-registered protocols—factors essential for minimizing bias and enhancing generalizability. Third, while temporal alignment between acupuncture timing and endogenous circadian physiology appears promising, the precise molecular cascades—especially how timed stimulation modulates clock genes (e.g., *Bmal1*, *Per2*), intestinal epithelial barrier integrity, and neuroendocrine signaling pathways—remain inadequately characterized. Fourth, considerable inter-practitioner variability persists in acupoint selection, reflecting insufficient consensus on syndrome-specific point combinations within the Najia framework, which compromises reproducibility and therapeutic consistency across different clinical settings.

Future scholarly efforts should prioritize four interrelated domains: (1) algorithmic simplification of the Najia calculation system—such as developing validated digital decision-support tools or visualized time-mapping charts—to lower entry barriers for community-level practitioners; (2) execution of prospective, multicenter, pragmatic randomized controlled trials with stratified randomization by TCM syndrome type, comparing the Najia method against both the Nazi method and conventional acupuncture, with primary endpoints including bowel movement frequency, stool consistency (Bristol scale), and patient-reported quality-of-life metrics; (3) integrative mechanistic investigations combining transcriptomic profiling of colonic tissue, metagenomic analysis of gut microbiota diurnal oscillations, and real-time monitoring of enteric nervous system activity to elucidate how chronotherapeutic acupuncture entrains peripheral circadian clocks; and (4) consensus-driven development of standardized clinical practice guidelines

that explicitly link TCM syndrome differentiation patterns—such as spleen-qi deficiency, liver-qi stagnation, or yin-deficiency heat—to temporally optimized acupoint prescriptions, thereby advancing evidence-informed standardization of traditional Chinese medicine chronotherapy [12].

8. Conclusion

Constipation is not merely a local disorder arising from impaired large intestine fu-qi function, but rather reflects a broader systemic imbalance rooted in the dynamic relationship between human physiology and natural environmental cycles, particularly disruptions in the intrinsic temporal regulation of qi and blood within the zang-fu organ network. Grounded in the classical theoretical framework of 'correspondence between human and nature', the Najia method—based on the midnight-noon ebb-flow principle—systematically maps the cyclical activation patterns of meridian acupoints using the heavenly stems, thereby enabling precisely timed modulation across multiple zang-fu systems. This approach aligns closely with the clinical complexity of chronic constipation, characterized by extended duration, co-occurring dysfunctions across several organ systems, and deviations from physiological circadian rhythms. Rather than relying solely on purgative strategies, the Najia method prioritizes the restoration of endogenous rhythmicity—the harmonious, time-structured circulation of qi and blood—and supports the large intestine's inherent transport and transformation capacity. Ongoing scholarly inquiry into traditional Chinese medicine chronomedicine, coupled with rigorous methodological refinement in clinical trial design and outcome measurement, positions this method as a promising paradigm for time-sensitive diagnosis and individualized management of chronic constipation. It further contributes foundational insights toward the systematic integration of temporal principles into the prevention and therapeutic strategy for functional gastrointestinal disorders.

References

1. J. Li et al., "Gut jet lag: how circadian rhythm disruption undermines the Chrono-Microbiota-Motility axis and induces functional constipation," *Frontiers in Nutrition*, vol. 12, p. 1678482, 2025.
2. M. Smolensky and L. Lamberg, **The Body Clock Guide to Better Health: How to Use Your Body's Natural Clock to Fight Illness and Achieve Maximum Health**. New York: Macmillan, 2001.
3. M. Alkhaldi et al., "The Gastro-Circadian Metabolic Axis: A Comprehensive Framework for Chronotherapy in Gastroenterology," *Cureus*, vol. 18, no. 6, 2026.
4. K. A. Shemerovskii, "What you need to know to avoid constipation," **Ambulatoynaya khirurgiya = Ambulatory Surgery (Russia)**, no. 3–4, pp. 102–107, 2021.
5. K. A. Shemerovskii, "Chronoenterography: monitoring of circadian rhythm of the intestinal evacuatory function," *Bulletin of Experimental Biology and Medicine*, vol. 133, no. 5, pp. 506–509, 2002.
6. P. V. Seliverstov et al., "Frequency of occurrence of colorectal bradyarrhythmia syndrome in elderly patients," *Medical Alphabet*, vol. 1, no. 18, pp. 45–47, 2022.
7. Y. P. Uspenskiy et al., "Disorders of circadian rhythms of defecation in obese patients," *Experimental and Clinical Gastroenterology*, no. 3, pp. 68–73, 2022.
8. K. A. Shemerovskiy, "Chronobiological strategy for the treatment of patients with constipation," in *Chronobiology and Chronomedicine*. Moscow: RUDN, 2018, pp. 804–816.
9. S. Agrawal, V. Verma, and S. Gehlot, "A scientific exploration on concept of chronomedicine and chronotherapy in Ayurveda," *Journal of Natural Remedies*, vol. 19, no. 2, pp. 87–89, 2019.
10. S. Kundu et al., "VITEXIN AS A CHRONOTHERAPEUTIC AGENT FOR CIRCADIAN-ASSOCIATED COLONIC COMPLICATIONS IN DIABETES: A REVIEW," *Genetics and Molecular Research*, 2026.
11. A. R. Damato et al., "A randomized feasibility study evaluating temozolomide circadian medicine in patients with glioma," *Neuro-Oncology Practice*, vol. 9, no. 3, pp. 193–200, 2022.
12. D. Riga et al., "Transdisciplinarity of time research in bio-medicine," in *Proc. Rom. Acad. Ser. B*, vol. 17, 2015, pp. 165–177.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of Publisher and/or the editor(s). Publisher and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.