

Exploring the Etiology and Pathogenesis of Wasting- Thirst Disorder Based on the Original Texts of the Yellow Emperor's Inner Canon

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Abstract:

As one of the classical disorders in traditional Chinese medicine (TCM), the theoretical origins of the etiology and pathogenesis of wasting-thirst disorder (Xiaoke) can be traced to the Yellow Emperor's Inner Canon (Huangdi Neijing). Anchored in the original texts of this canonical work and integrated with modern scholarly interpretations grounded in classical theory, this paper systematically examines the etiology and pathogenesis of wasting-thirst from multiple dimensions—namely, constitutional predisposition, dietary factors, emotional dysregulation, imbalance between labor and rest, and the “vigorous fire consuming qi” (Zhuang Huo Shi Qi). The study reveals that key passages from the Inner Canon—such as “the five zang-organs are all fragile and weak,” “excessive eating injures the stomach and intestines,” “anger causes qi to counterflow upward,” “overexertion depletes qi,” and “vigorous fire consumes qi”—constitute a theoretical framework for the etiology and pathogenesis of wasting-thirst. This framework provides core guidance for modern TCM understanding and treatment of the disorder, which corresponds to diabetes mellitus in contemporary medicine. By collating the classical texts with modern research findings, this paper further clarifies the scientific validity and practical utility of the Inner Canon's theories, thereby offering theoretical support for clinical diagnosis and treatment.

Keywords:

Yellow Emperor's Inner Canon, Wasting-thirst Disorder (Xiaoke), Etiology and Pathogenesis, Five Zang-organs Being Fragile And Weak, Vigorous Fire Consuming Qi, Dietary Irregularity

1. Introduction

Wasting-thirst disorder is characterized by polydipsia, polyphagia, polyuria, and emaciation, and closely corresponds to diabetes mellitus and its complications in modern medicine. With changing lifestyles, its prevalence has been rising steadily, making it a major chronic disease affecting public health. TCM possesses unique advantages in the prevention and treatment of wasting-thirst, and the Yellow Emperor's Inner Canon—as the theoretical cornerstone of TCM—contains the earliest

systematic records of its etiology and pathogenesis. Passages such as “the five zang-organs are fragile and weak” and “fatty foods generate internal heat, sweet foods cause middle-fullness” laid the theoretical foundation for later medical understanding.[1]

In recent years, scholars have conducted in-depth investigations into the Inner Canon’s texts on wasting-thirst: Su Ying explored its constitutional susceptibility; Liu Wenchao discussed the pathogenesis and treatment from the perspective of “five zang-organs being fragile and weak”; Jiang Li et al. analyzed the pathogenesis of fire-heat injuring qi based on “vigorous fire consuming qi”; and Li Yinuo et al. systematically examined the links between etiology, pathogenesis, and therapy. [2][3] All these studies are rooted in the Inner Canon and have enriched the theoretical connotations of wasting-thirst. The present paper, grounded in the original texts and incorporating these modern findings, aims to decode the etiology and pathogenesis from multiple angles, with the goal of uncovering the deeper value of classical theory and providing clinically relevant guidance that stays true to the canonical origins.

2. Core Discussions on Etiology and Pathogenesis in the Yellow Emperor’s Inner Canon

Although the Inner Canon does not use the unified term “wasting-thirst disorder,” it records conditions such as “Xiao Dan,” “Fei Xiao,” and “Ge Xiao” in various chapters of the Plain Questions (Suwen) and Spiritual Pivot (Lingshu), systematically elaborating their etiology and pathogenesis. [19] The core texts can be summarized into five dimensions—constitution, diet, emotion, labor-rest balance, and pathological products (e.g., “vigorous fire”)—together forming a theoretical framework.[17]

2.1. Constitutional Basis: “Five Zang-Organs Being Fragile and Weak” as the Intrinsic Root

The Inner Canon places great emphasis on the influence of constitution on disease, clearly stating that “the five zang-organs being fragile and weak” is the internal root of wasting-thirst. Lingshu • Wubian records: “The Yellow Emperor asked Shao Yu: ‘I have heard that at the onset of all diseases, they must arise from wind, rain, cold, and heat, entering through the hair pores and interstices—some return, some stay, some manifest as wind-edema with sweating, some as Xiao Dan...’ Shao Yu replied: ‘Those in whom all five zang-organs are fragile and weak are prone to Xiao Dan.’” Here, “fragility and weakness” refers to congenital insufficiency of the five zang-organs’ functions, with impaired production and distribution of qi, blood, and body fluids, leading to lowered resistance and increased susceptibility to external pathogens or internal injury, thereby triggering wasting-thirst.[15]

Liu Wenchao, in “Discussion on the Pathogenesis and Treatment of Diabetes from the Inner Canon’s ‘Five Zang-Organs Being Fragile and Weak’,” points out that this concept does not merely denote morphological weakness but emphasizes functional disharmony: the kidney, as the root of congenital constitution, when deficient in essence, gives rise to yin deficiency with internal blazing fire that consumes fluids; the spleen, as the root of acquired constitution, when qi-deficient, fails in transportation and transformation, so that grain essences cannot be distributed but instead generate damp-turbidity; the lung governs the waterways, and when lung yin is insufficient, fluid distribution is impaired, causing thirst and polydipsia. [5] This view aligns closely with the Lingshu text, further confirming that “five zang-organs

being fragile and weak” constitutes the intrinsic basis of wasting-thirst, involving synergistic dysfunction of multiple organs rather than a single visceral lesion.

Su Ying, in “A Preliminary Discussion on the Inner Canon’s Understanding of Constitutional Susceptibility to Wasting-Thirst and Its Implications,” adds that the “five-zang fragility and weakness” constitution is mostly related to congenital endowment, as seen in Suwen • Shanggu Tianzhen Lun: “At seven years, a girl’s kidney qi becomes abundant... at eight years, a boy’s kidney qi becomes substantial.” If congenital kidney qi is insufficient and postnatal care is neglected, this constitution is more likely to form, increasing the risk of wasting-thirst. [4] This research deepens the theoretical connotation of “five zang-organs being fragile and weak” as an intrinsic root, echoing the zang-fu differentiation thought in Lingshu • Shunqi Yiri Fenwei Sishi (“for diseases in the zang-organs, select the well-spring and brook points”), suggesting that the diagnosis and treatment of wasting-thirst must attend to congenital factors.

2.2. Dietary Factors: “Rich and Sweet Foods” Leading to “Internal Heat and Middle-Fullness”

Dietary irregularity is a major precipitating factor explicitly recorded in the Inner Canon, with core passages in Suwen • Qibing Lun and Suwen • Tongping Xushi Lun. In Suwen • Qibing Lun, the Yellow Emperor asks: “There is a disease with sweet taste in the mouth—what is its name, and how does it arise?” Qi Bo answers: “This is an overflow of the five qi, called Pi Dan (spleen-heat). The five flavors enter the mouth, are stored in the stomach, and the spleen distributes their essential qi; the fluids remain in the spleen, hence the sweet taste in the mouth. This arises from rich and delicious foods. Such a person must have regularly consumed sweet and fatty foods. Fatty foods generate internal heat, sweet foods cause middle-fullness; hence the qi overflows upward and turns into wasting-thirst.” This passage clearly describes the pathological transition from Pi Dan to wasting-thirst: long-term overconsumption of sweet and fatty products impairs the spleen-stomach transport function; the accumulated rich products generate internal heat and middle-fullness; the heat scorches body fluids, eventually leading to wasting-thirst. [13]

Suwen • Tongping Xushi Lun further emphasizes: “In treating Xiao Dan, sudden collapse, hemiplegia, flaccidity-coldness, qi-fullness with counterflow, among the rich and noble who consume sweet and fatty foods, these are disorders of rich diet.” Here “Gao Liang” refers to rich and fatty foods, and “sweet-fat nobles” points to those with luxurious diets as the high-risk group. This ancient description is highly congruent with the modern epidemic of diabetes induced by high-sugar, high-fat diets—insulin resistance parallels the pathology of “fatty foods generate internal heat, sweet foods cause middle-fullness.”[6][16]

The core mechanism underlying wasting-thirst disorder induced by dietary irregularity lies in “spleen-stomach impairment”. Dysfunction of spleen transportation and transformation leads to two pathological consequences: on the one hand, grain essences fail to be distributed to the five zang-organs and six fu-organs, resulting in general malnutrition of the body; on the other hand, untransformed nutritive substances transform into pathological products such as damp turbidity and phlegm-heat, which further consume body fluids and exacerbate the symptoms of wasting-thirst.

2.3. Emotional Dysregulation: “Anger Causes Qi to Counterflow Upward” Generating Heat and Injuring Fluids

The Inner Canon emphasizes “emotional pathogenesis,” holding that chronic emotional disturbance can induce wasting-thirst. Core texts are found in Lingshu • Wubian and Suwen • Judong Lun. Lingshu • Wubian records: “Those who are fragile and weak must have firmness and strength; firmness invites much anger, and the weak are easily injured. Such persons have thin skin but deep-set, firm eyes, with a stretched and upright bearing; their heart is firm, and firmness leads to much anger; anger causes qi to counterflow upward, accumulating in the chest, with blood and qi stagnating, the skin and muscles congested, blood vessels blocked, transforming into heat; heat then consumes the skin and flesh, hence Xiao Dan.” Here, “anger causes qi to counterflow upward” means that rage leads to liver qi stagnation and deranged qi movement; blood and qi accumulate in the chest to generate heat, which consumes the fluids of the skin and flesh, ultimately causing Xiao Dan.[14]

Suwen • Judong Lun further elaborates the relationship between emotions and qi movement: “Anger makes qi ascend, joy makes qi relax, grief makes qi dissipate, fear makes qi descend... all diseases arise from qi.” Among emotional disturbances, “anger making qi ascend” is most prone to generating heat—liver qi stagnation over time transforms into fire; the blazing fire scorches lung fluids above, causing thirst and polydipsia (upper wasting); scorches stomach fluids in the middle, causing polyphagia with easy hunger (middle wasting); scorches kidney fluids below, causing polyuria (lower wasting), thus forming the typical triad.

The work- and life-related pressures in modern society easily lead to emotional distress, consistent with the pathogenic factor of “firmness and much anger” in the Inner Canon. Chronic anxiety and depression can affect the endocrine system, leading to abnormal insulin secretion and aggravating glycemic fluctuations. This resonates with the pathological process of “anger causing qi counterflow, transforming into heat, heat consuming the flesh,” further confirming emotional dysregulation as a significant cause.

2.4. Imbalance Between Labor and Rest: “Overexertion Depletes Qi” and “Excessive Ease Stagnates Qi”

The Inner Canon proposes that “imbalance of labor and rest” can trigger wasting-thirst, including both “excessive exertion” and “excessive ease.” Suwen • Judong Lun states: “Overexertion depletes qi... overexertion causes panting and sweating, with both external and internal dissipation, hence qi is depleted.” Excessive physical or mental labor consumes qi, blood, and body fluids: physical overexertion injures spleen qi, impairing transport; mental overexertion consumes heart blood, so that the zang-organs lose nourishment—both lead to disordered fluid generation and distribution, inducing wasting-thirst.[12]

Suwen • Xuanming Wuqi, on the other hand, states that “prolonged lying injures qi, prolonged sitting injures flesh,” highlighting the harm of excessive ease: chronic lack of movement hinders qi and blood circulation, weakens spleen-stomach transport, and deprives muscles of nourishment, easily generating phlegm-damp; phlegm-damp stagnates and transforms into heat, consuming fluids and leading to wasting-thirst. This ancient notion is highly consistent with modern findings that sedentary behavior and obesity increase diabetes risk.

Huang Haoyue and Zhang Yuan, in “Application of Inner Canon Health-Preservation Theories in the Prevention and Treatment of Wasting-Thirst,” integrating the above texts, point out that “moderation of labor and rest” is an important principle for preventing wasting-thirst: appropriate exercise promotes qi-blood circulation, enhances spleen-stomach transport, and ameliorates the “five-zang fragility” constitution; avoiding overexertion prevents depletion of qi, blood, and fluids, maintaining stable zang-fu function. This view, from the health-preservation angle, corroborates the Inner Canon’s pathogenesis theory and offers practical guidance for clinical prevention.[8]

2.5. Pathological Mechanism: “Vigorous Fire Consuming Qi” Leading to Fire-Heat Injuring Fluids

“Vigorous fire consuming qi” is a core theory in the Inner Canon for explaining the pathological mechanism of wasting-thirst, found in Suwen • Yin-yang Yingxiang Dalun: “The qi of vigorous fire declines; the qi of gentle fire thrives; vigorous fire consumes qi, and qi feeds on gentle fire; vigorous fire disperses qi, while gentle fire generates qi.” Here “vigorous fire” refers to hyperactive fire-heat (including both excess and deficiency fire), and “consuming qi” means that fire-heat depletes the body’s vital qi (especially qi and fluids). In wasting-thirst, “vigorous fire” arises from dietary accumulation, emotional stagnation, or zang-organ deficiency—all falling into this category.[11][18]

Jiang Li et al., in “Exploring the Pathogenesis of Fire-Heat Injuring Qi in Diabetes Based on the Inner Canon’s ‘Vigorous Fire Consuming Qi’,” analyze in depth: “Vigorous fire consuming qi” in wasting-thirst manifests as fire-heat consuming lung qi, impairing descending and dispersing, with fluid maldistribution and thirst; consuming spleen qi, impairing transport and transformation, with maldistribution of essences, leading to polyphagia but emaciation; and consuming kidney qi, impairing consolidation, with fluid leakage downward, leading to polyuria. Moreover, prolonged “vigorous fire” consumption of qi can lead to dual deficiency of qi and yin, further aggravating the condition, forming a vicious cycle of “fire-heat → qi-consumption → fluid-depletion,” which perfectly matches the Suwen statement that “vigorous fire disperses qi.”

Sun Xiaozhong, in “The Inner Canon’s Understanding of Diabetes,” also points out that “vigorous fire consuming qi” is a pathological mechanism that runs throughout the entire course of wasting-thirst, whether it be excess fire in the early stage or deficiency fire in the later stage, all centering on “consuming qi and injuring fluids.” This further reinforces the pivotal role of “vigorous fire consuming qi” and provides textual basis for the therapeutic principles of “clearing heat, benefiting qi, generating fluids, and moistening dryness.”

3. Integration of Inner Canon Theory with Modern Research: A Systematic Synthesis of Etiology and Pathogenesis

Synthesizing the original texts of the Inner Canon and modern scholarly findings, the etiology and pathogenesis of wasting-thirst can be systematically constructed as a model of “one foundation, multiple causes, and synergistic mechanisms”—the “foundation” being the constitutional basis of “five zang-organs being fragile and weak”; the “multiple causes” including dietary irregularity, emotional dysregulation, and imbalance of labor and rest; and the “synergistic mechanisms” centering on

“internal heat generation,” “vigorous fire consuming qi,” and “fluid injury,” as detailed below.

3.1. Synergistic Action of Constitutional Basis and Causative Factors

The “five-zang fragility” constitution is not independently pathogenic but works synergistically with diet, emotion, labor, and rest to induce wasting-thirst. Su Ying notes that individuals with this constitution, if they chronically overconsume rich and sweet foods, are more prone to spleen-stomach impairment and internal heat; if additionally afflicted with emotional distress, liver qi stagnation transforms into fire more rapidly; and if combined with improper labor-rest patterns, depletion of qi, blood, and fluids is further accentuated—the triple combination can accelerate the transition from Pi Dan to wasting-thirst. This echoes the Lingshu statement that “those in whom all five zang-organs are fragile and weak are prone to Xiao Dan,” indicating that clinical management must attend to both constitution and triggers for individualized intervention.

3.2. Progressive and Interconnected Pathological Mechanisms

The pathological mechanisms of wasting-thirst exhibit a progressive course: first, dietary and emotional factors generate “internal heat” (excess or deficiency fire), forming “vigorous fire”; second, “vigorous fire consumes qi,” depleting the qi of lung, spleen, and kidney; finally, qi depletion leads to impaired generation and distribution of fluids, manifesting as polydipsia, polyphagia, polyuria, and emaciation. This progression is fully consistent with the Inner Canon logic of “fatty foods generate internal heat → vigorous fire consumes qi → heat consumes the flesh.” Studies by Li Yinuo, Liu Wenchao, and others have all confirmed that this pathological chain is the core pathway for the development of wasting-thirst, providing a theoretical basis for stage-based treatment.

3.3. Holistic Dysfunction of Zang-Fu Organs

The Inner Canon emphasizes the “holistic concept,” and the etiology and pathogenesis of wasting-thirst also manifest as a holistic dysfunction of the five zang-organs: lung, spleen, and kidney play central roles in fluid metabolism; “five-zang fragility” leads to insufficiency of these three organs, and dietary, emotional, and other factors further exacerbate their impairment—lung fails to distribute fluids, spleen fails to transform fluids, kidney fails to consolidate fluids, collectively causing “fluid injury”; meanwhile, liver fails in free coursing (emotional dysregulation) affecting qi movement, and heart loses nourishment (overexertion depleting qi) affecting fluid distribution—all participating in the pathological process. Zhang Haiyan, in “The Inner Canon’s Understanding of Wasting-Thirst,” points out that such holistic zang-fu imbalance is a key reason for the prolonged course and easy relapse of wasting-thirst, aligning with the Suwen • Linglan Midian Lun’s statement that “all these twelve officials must not fail in harmony.”[7]

4. Conclusions and Prospects

The original texts of the Yellow Emperor's Inner Canon—covering “the five zang-organs being fragile and weak,” “rich and sweet foods generating internal heat,” “anger causing qi counterflow to generate heat,” “overexertion depleting qi,” and “vigorous fire consuming qi”—constitute the core theoretical framework for the etiology and pathogenesis of wasting-thirst. These classical theories, validated by

modern scholarship, are highly concordant with contemporary understandings of diabetes pathogenesis (e.g., genetic, dietary, psychological, and lifestyle factors), fully demonstrating their scientific validity and foresight.

Based on the Inner Canon's original theories, future research on wasting-thirst may proceed in three directions: first, further excavating less-explored classical content, such as the specific characteristics and regulation methods of "constitutions susceptible to wasting-thirst"; second, employing modern technological approaches to verify the molecular biological mechanisms underlying "vigorous fire consuming qi" and "five zang-organs being fragile and weak"; and third, developing diagnostic and therapeutic protocols more closely aligned with the pathogenesis, such as optimizing formulae from the perspectives of "supplementing the five zang-organs" and "clearing heat and benefiting qi."

In sum, the original theory of the Yellow Emperor's Inner Canon remains the living source for research on the etiology and pathogenesis of wasting-thirst. Only by anchoring in the classics and integrating with modern advances can we continually enrich its theoretical connotations, provide more effective guidance for clinical management, and advance the development of TCM in preventing and treating metabolic disorders.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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