

# Clinical Research Advances in the Treatment of Pancreatic Cancer Using Integrated Traditional Chinese and Western Medicine

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**Abstract:** *Pancreatic cancer is an aggressive gastrointestinal malignancy with a very high mortality rate, representing a significant medical challenge. This chapter systematically reviews the literature to introduce the advantages and recent research achievements of both Traditional Chinese Medicine (TCM) and Western medicine in the treatment of pancreatic cancer. Regarding TCM, this chapter primarily covers the etiology and pathogenesis of pancreatic cancer, syndrome differentiation and treatment, clinical experience of renowned physicians, common herbal formulas, and external therapies, highlighting the strengths of TCM in addressing both the root cause and symptoms, as well as its approach of treating the disease based on syndrome differentiation. Regarding Western medicine, the chapter briefly introduces the current status of comprehensive treatment centered on surgery, radiotherapy, chemotherapy, as well as targeted and immunotherapy. Subsequently, this paper focuses on methods that integrate TCM therapeutic approaches with surgical treatment, radiation therapy, chemotherapy, and minimally invasive interventional therapies to improve treatment efficacy, reduce adverse effects, prolong survival, and enhance quality of life. The author believes this represents the mainstream direction for future development in this field and will be a key focus of future research.*

**Keywords:** Pancreatic cancer, Integration of Traditional Chinese and Western Medicine, Syndrome Differentiation and Treatment, Advances in Clinical Research.

## 1. Introduction

As a highly malignant tumor of the digestive system, the global incidence of pancreatic cancer has continued to rise in recent years, posing a serious threat to human health. In addressing this disease, TCM and Western medicine have each developed distinctive treatment strategies based on their respective theoretical frameworks and practical experience.

TCM emphasizes a holistic perspective and syndrome differentiation and treatment, addressing the disease from the perspective of etiology and pathogenesis while focusing on restoring the body's balance; in contrast, Western medicine primarily relies on localized interventions such as surgery, radiotherapy, and chemotherapy to achieve direct control of the tumor. This article focuses on the TCM perspective, systematically reviewing the latest research advances in the understanding and treatment of pancreatic cancer, with the aim of providing a reference for the clinical integration of the strengths of both TCM and Western medicine. The following sections will provide a comprehensive review of TCM's approach to pancreatic cancer, covering its etiology and pathogenesis, syndrome differentiation and classification, clinical experience of renowned physicians, commonly used formulas and medications, and external therapies.

## 2. TCM Understanding and Treatment of Pancreatic Cancer

### 2.1 Etiology and Pathogenesis of Pancreatic Cancer in TCM

Liu Luming conducted a comprehensive analysis of the pathogenesis and causes of pancreatic cancer from a TCM perspective, concluding that "spleen deficiency with

dampness accumulation, and the mutual entanglement of toxins and blood stasis" are the primary pathogenic factors. His research revealed that the development of pancreatic cancer is associated with dietary habits, emotional fluctuations, and environmental influences. Impaired spleen and stomach function prevents the body from expelling dampness; over time, this generates heat toxins that obstruct the channels of blood and qi circulation, leading to stasis. This study places particular emphasis on the interplay of "deficiency, toxin, and stasis" within the pathogenesis process, providing a theoretical foundation for diagnosis and treatment. It proposes a therapeutic approach centered on tonifying the spleen and resolving toxins and stasis to restore balance to the body [1]. This offers crucial insights for future clinical practice and provides a framework for comprehensively understanding pancreatic cancer.

### 2.2 Differentiation and Treatment of Pancreatic Cancer Based on TCM Patterns

Differentiation and classification based on etiology and pathogenesis are key components of TCM treatment for pancreatic cancer. By analyzing TCM patterns and epidemiological data on pancreatic cancer in China, Yang Huan investigated the relationship between risk factors and TCM patterns, identifying "damp-heat with blood stasis" and "deficiency of qi and yin" as common patterns. The study also found that incorporating pattern differentiation into screening can improve early diagnosis rates [2]. This study approaches pattern differentiation from an epidemiological perspective to demonstrate the advantages of personalized TCM treatment. Subsequently, Xiao Yuyu comprehensively analyzed the TCM pattern differentiation system for pancreatic cancer using a typical case by Professor Zeng Puhua as a model, covering patterns such as liver qi stagnation with spleen deficiency and toxic heat with blood stasis, and listed

corresponding treatment methods, such as soothing the liver and strengthening the spleen, and clearing heat and eliminating toxins. This reflects how the experience of classical medical masters guides the classification criteria [3]. This further enriches the theory of pattern differentiation and serves as a guide for clinical medication. Secondly, Zeng Baozhu conducted clinical observations of 38 pancreatic cancer patients. The study demonstrated the efficacy of syndrome-differentiation-based treatment; statistical analysis revealed that personalized prescriptions tailored to different syndromes could alleviate symptoms and improve quality of life, suggesting the clinical feasibility of syndrome differentiation [4]. These studies have advanced the overall understanding of the syndrome differentiation system for pancreatic cancer and laid the foundation for further learning from the experience of renowned physicians.

### 2.3 Academic Experiences of Renowned Senior TCM Practitioners in Treating Pancreatic Cancer

Regarding the integrated traditional Chinese and Western medicine treatment of pancreatic cancer, the experience and techniques of senior TCM practitioners constitute a vast treasure trove. For instance, Professor Liu Luming's clinical research results demonstrate that his approach to pancreatic cancer is based on the principle of "strengthening the body's vital energy and expelling pathogenic factors, thereby regulating the patient's constitution to modulate the immune system." The findings revealed that this approach can effectively alleviate pain in pancreatic cancer patients and prolong their lives. Furthermore, Jiang Yilan's experience with the "Spleen-Strengthening and Tumor-Eliminating Formula" indicates that this formula possesses unique advantages in supporting the body's vital energy and inhibiting tumor progression [5]. There are also novel concepts and methods for treating cancer; for instance, Wang Xiaorong proposed that the "Principle-Based Approach to Cancer" can improve the quality of life for cancer patients [6]; Cui Lihong proposed that the application of "Chaihu Shugan San" not only reduces the burden on the liver but also improves patients' mental state and immunity, making them more comfortable; this method serves as a powerful adjunctive therapy for patients with advanced cancer [7]. These diverse treatment approaches all embody the individualized characteristics of Traditional Chinese Medicine. Li Na specifically introduced Professor Yu Rencun's academic perspectives, particularly emphasizing the principle of "strengthening the body's vital energy and consolidating its foundation, while detoxifying and dispersing nodules." By combining tonic herbs such as Astragalus and Atractylodes with antiviral herbs like Hedyotis and Hedyotis diffusa, and following clinical trials, it was found that this combination of herbs indeed improves patient tolerance [8].

Regarding the principle that strengthening the body's vital energy takes precedence over expelling pathogenic factors, Yu Rencun conducted in-depth research; He Lili outlined Professor Sun Guizhi's emphasis on the importance of "regulating the liver and strengthening the spleen" in disease treatment, noting her focus on first balancing emotional and lifestyle habits as a foundation before applying the Xiaoyao San formula, which clinical trials have proven to effectively alleviate obstruction symptoms [9]. A second major

achievement of Sun Guizhi was her emphasis on the principle of treating both the liver and spleen simultaneously. Zhang Li described the diagnostic characteristics of Professor Liu Shenlin, focusing on the concept of "concurrent phlegm and blood stasis." Consequently, he routinely selects Erchen Decoction combined with Xuefu Zhuyu Decoction for treatment, and experimental studies have shown that this therapeutic approach can significantly improve patient prognosis [10]. Liu Shenlin's advancements have expanded the theory of phlegm-stasis treatment. Lu Jing reported on a new method proposed by Professor Zhou Weishun, the "Warm-Transportation to Eliminate Accumulation" theory, which involves formulas combining warming herbs such as Aconite and Dried Ginger with herbs that soften hardness and disperse nodules. This approach is used for patients with deficient yang qi, and experimental studies have found it to effectively improve the body's immune function [11]. Zhou Weishun demonstrated the practical efficacy of the warming method in treating pancreatic cancer patients by selecting different herbs according to varying clinical conditions.

Regarding the Xia Xian Xiong Decoction for "mutual entanglement of phlegm and heat," Wang Binbin documented the experience of Professor Wu Liangcun, who believed that the Xia Xian Xiong Decoction can clear the lungs, transform phlegm, relieve obstruction, and disperse nodules, making it an effective method for treating pancreatitis. Professor Wu Liangcun was able to interpret modern diseases by referring to ancient texts [12]. Additionally, Wang Dan documented the "Four Methods" proposed by Professor Yang Jinkun: strengthening the gastrointestinal tract, eliminating dampness, eliminating toxins, and promoting blood circulation — approaches designed to enhance therapeutic efficacy, each with specific applications. The "Yang's Four Methods" have evolved into a comprehensive system that can be adopted as a reference [13]. Sun Tonglin emphasized research on Professor Liu Hua's theories regarding the liver and spleen, using methods of regulating breathing and soothing the liver to alleviate abdominal pain and distension, thereby improving the condition of terminally ill patients [14]. In summary, the valuable experience of the aforementioned experts not only carries forward the wisdom of our ancestors but also lays the groundwork for our own research.

### 2.4 Commonly Used Traditional Chinese Medicines and Formulas for Treating Pancreatic Cancer

Our research involves collecting and summarizing the experiences of renowned physicians to more clearly define the prescriptions corresponding to specific symptoms. For example, Ding Honggang's case study demonstrated the therapeutic efficacy of Da Chai Hu Tang in treating colorectal cancer. He emphasized that the efficacy of Da Chai Hu Tang lies in clearing liver and gallbladder stagnant heat, resolving blood stasis, and eliminating reflux while subduing excessive fire. It is suitable for patients with liver and gallbladder stagnant heat, effectively alleviating discomforts such as jaundice and abdominal pain, and complements Western medical treatments to enhance their efficacy [15]. This demonstrates the application of Da Chai Hu Tang as a TCM formula in the treatment of cancer. In fact, as early as 2000, You Jianliang was the first to report the successful treatment of 42 cases of advanced pancreatic cancer using a "regulating

the spleen and suppressing the pancreas” therapeutic regimen. The core of this approach lies in regulating spleen dampness to facilitate digestion, decomposition, and excretion, thereby clearing blockages. Experimental results confirmed that this approach has a certain degree of efficacy in stabilizing tumor size and prolonging patient survival [16].

The concurrent use of the “Strengthening the Root and Resolving Accumulations” approach also pointed the way for future research. Through observational studies, Li Chengli found that applying this regimen to patients with pancreatic cancer characterized by qi deficiency and toxic stasis could correct the patients’ internal conditions, eliminate tumor tissue, and significantly alleviate symptoms of fatigue and pain. This demonstrates that accurately identifying disease patterns and prescribing medications based on specific symptoms is a highly effective therapeutic strategy [17]. Meanwhile, Jin Chang’s research revealed that Modified Wu Mei Wan effectively alleviates high fever and pain in pancreatic cancer patients with digestive system imbalances, suggesting that in long-term disease management, the sustained efficacy of pill formulations surpasses that of other dosage forms [18]. Furthermore, the application of Wumei Wan offers insights into the feasibility and potential value of using insect-derived medicines to treat cancer. For instance, Qian Rong and colleagues attempted to use Wumei Wan and other Chinese herbal formulas to harmonize the liver and spleen and reduce vomiting symptoms; their experiments demonstrated that these classical formulas remain highly effective against contemporary cancers [19].

The above studies all focus on formula modification. Lu Yunxin employed the method of “strengthening the healthy and assisting in expelling pathogens,” using a strategy to tonify the qi of the spleen and lung to resolve the syndromes of patients with advanced pancreatic cancer. This approach not only enhances the body’s immunity but also delays disease progression, highlighting the critical role of the spleen and stomach in the treatment of advanced patients. Meanwhile, prior research on treating advanced cancer has successfully integrated therapeutic formulas with pharmaceutical agents [20]. Han Jianhong proposed the principle of “strengthening the body’s defenses and expelling pathogens,” specifically a regimen combining spleen-tonifying and kidney-nourishing herbs with chemotherapy drugs. Clinical trials confirmed that this approach enables safe and effective long-term treatment while effectively combating tumors, thereby embodying the principle of “treating both the symptoms and the root cause” in traditional Chinese medicine [21]. This treatment model outlines specific approaches to strengthening the body’s vital energy, consolidating its foundation, and combating the disease. Sun Yubing administered both internal and external medications to patients with mid-to-late-stage cancer, focusing primarily on regulating the spleen and stomach internally, while using anti-inflammatory and analgesic ointments for external treatment. Experiments demonstrated that this therapy had a positive impact on patients’ quality of life [22].

Zhang Chuanlong began his research by examining the relationship between pancreatic cancer and the spleen as described in the \*Huangdi Neijing\* (The Yellow Emperor’s

Inner Canon). By focusing on the functions of the spleen, he demonstrated that the use of spleen-tonifying Chinese herbal medicines yields favorable outcomes and clinical value. This laid the foundation for the subsequent development of compound formulations and expands the treatment options for pancreatic cancer [23].

### **2.5 Application of Traditional Chinese Medicine External Therapies in Pancreatic Cancer**

As an adjunctive therapeutic modality, external TCM therapies play a significant clinical role in the comprehensive treatment of pancreatic cancer patients. Research by Wang Shiheng revealed that Professor Liu Jianfeng’s treatment of advanced pancreatic cancer incorporates techniques such as topical medications and acupuncture. For instance, the use of blood-activating and stasis-resolving plasters to alleviate patient pain has been clinically validated. Practical application confirms that external therapies can directly target the affected area, thereby improving patient comfort ([24]). This demonstrates that TCM external therapies serve a clear purpose. Similarly, according to Wang Xuehua, who explored treatment regimens for advanced pancreatic cancer involving topical application of Chinese herbal medicines and moxibustion—such as the use of the “Wenyang Sanhan” patch to treat ascites—clinical practice has also confirmed that a combined approach of internal and external treatments can enhance therapeutic efficacy [25]. This demonstrates that external therapies in TCM possess a synergistic effect. Qi Xuewei reported a clinical case of herbal medicine treatment for a solid pseudopapillary tumor of the pancreas, emphasizing the role of the externally applied formula for reducing swelling and resolving nodules, while noting that oral administration yielded better results than topical application [26]. The above studies indicate that external therapies in TCM can provide multifaceted and comprehensive support for pancreatic cancer patients and expand treatment options.

### **3. Current Status of Western Medical Treatment for Pancreatic Cancer**

Pancreatic cancer is a highly aggressive gastrointestinal tumor, and its treatment remains a global challenge and a major area of focus. Western medicine employs multidisciplinary comprehensive treatment approaches for pancreatic cancer, including surgery, radiotherapy, chemotherapy, and, in recent years, targeted and immunotherapy.

These various treatment modalities play a crucial role for patients with different stages and types of pancreatic cancer. With advancements in medical technology, Western medical treatments are continuously being optimized to extend survival and improve quality of life for patients. However, due to the characteristics of pancreatic cancer—including difficulty in early detection, high metastasis rates, and strong resistance—treatment remains the greatest challenge in managing this disease. This article will focus on four treatment modalities—surgery, radiation therapy, chemotherapy, and targeted and immunotherapy—to highlight the latest developments in Western medical approaches to pancreatic cancer, with the aim of providing practical guidance for clinical practice.

### 3.1 Surgical Treatment of Pancreatic Cancer

Surgical resection is one of the fundamental treatment modalities for pancreatic cancer and is indicated for early-stage, locally confined tumors. A review by Vincent A. on surgical approaches for pancreatic cancer notes that procedures such as pancreaticoduodenectomy or distal pancreatectomy can effectively remove tumor tissue; however, the choice of surgical technique depends on the tumor stage and location. He pointed out that accurate preoperative assessment and meticulous surgical technique are the foundation of surgical success and can help prevent postoperative complications. Furthermore, for resectable or locally advanced tumors, the use of neoadjuvant chemotherapy can improve resectability. Although surgical techniques are constantly evolving, the high recurrence rate remains a major challenge in pancreatic cancer; therefore, adjuvant therapy is necessary to enhance treatment outcomes [27].

### 3.2 Radiation Therapy for Pancreatic Cancer

Radiation therapy is also frequently used as a means of local control in patients with pancreatic cancer, particularly in those who are ineligible for surgical treatment or who require follow-up therapy after surgery. Based on cancer data, Siegel R L analyzed the role of radiation therapy in the comprehensive treatment of pancreatic cancer, noting that advanced technologies such as intensity-modulated radiation therapy (IMRT) and stereotactic body radiation therapy (SBRT) can precisely target tumors while minimizing damage to healthy tissues. The study also found that radiation therapy is often combined with chemotherapy, such as in chemoradiation regimens, to enhance the efficacy of local treatment. For patients with advanced disease, it can also alleviate discomfort or symptoms of obstruction, thereby improving their quality of life. However, due to the influence of tumor biology and the potential for side effects such as gastrointestinal discomfort, dose adjustments and individualized treatment planning are required [28].

### 3.3 Chemotherapy for Pancreatic Cancer

As a core component of the overall treatment for pancreatic cancer (PD), particularly for metastatic or advanced PD, chemotherapy plays a crucial role. The Chinese Cancer Burden Study by Sund D analyzed the use of chemotherapy in PD treatment. Building on the recommendation of regimens such as gemcitabine or FOLFIRINOX as first-line therapy, it contributes to extending overall survival and specifies that chemotherapy selection should be tailored to the patient's overall condition and genetic profile. In this process, adverse reactions such as bone marrow suppression must not be overlooked. Building on this approach, the epidemiological trends in pancreatic cancer (Cai J) further highlight the importance of a second wave of chemotherapy—based on screening and predictive results—in enhancing postoperative outcomes. It also reveals that comprehensive chemotherapy, combining early definitive diagnosis with neoadjuvant chemotherapy, has become a key focus in the field of chemotherapy development, aiming to “enhance tumor control and efficacy while reducing side effects and improving patient well-being.” Overall, chemotherapy

continues to play a fundamental role in saving patients with advanced disease, but the threat of drug resistance remains an urgent issue to be addressed [29,30].

### 3.4 Targeted and Immunotherapy for Pancreatic Cancer

Novel targeted and immunotherapies represent emerging trends in pancreatic cancer treatment, focusing on specific molecular mechanisms or the immune microenvironment. Yin L et al. recently completed a whole-genome sequencing study in Chinese pancreatic cancer patients, published in *Oncogene*, to identify potential targets for targeted therapy. They demonstrated that patients with BRCA mutations may benefit from PARP inhibitors. Although targeted drugs such as erlotinib have been used on a trial basis in certain patient populations, their efficacy remains unsatisfactory, and further optimization based on biomarkers is necessary. Regarding immunotherapy, while immune checkpoint inhibitors PD-1/PD-L1 demonstrate certain advantages for highly microsatellite-stable tumor subtypes, their application in immunosuppressive environments such as pancreatic cancer is significantly limited. Future research should focus on developing effective combination strategies, such as the combined use of targeted and immunotherapy [31].

In summary, Western medicine has established multiple effective treatment regimens for pancreatic cancer, including surgery, radiation therapy, chemotherapy, targeted therapy, and immunotherapy, each of which plays a distinct role at different stages of the disease. Surgery serves as a curative approach to tumor resection; radiation therapy is a means to improve local control rates; chemotherapy is a systemic treatment method; and targeted and immunotherapies represent pathways toward personalized treatment. However, the heterogeneity and resistance of pancreatic cancer remain major challenges that cannot be avoided. In the future, it will be necessary to continuously strengthen basic theoretical and practical research and scientifically adjust the sequence and combination of treatments. With the support of multidisciplinary collaboration and precision medicine technologies, Western medicine has the opportunity to further improve the quality of life for pancreatic cancer patients, thereby fostering greater synergy with Traditional Chinese Medicine.

## 4. Clinical Practice of Integrated Traditional Chinese and Western Medicine for Pancreatic Cancer

Current research on the integrated treatment of pancreatic cancer combines the principles of TCM—which uses potent tonics and purgatives to regulate bodily functions—with the microscopic targeted therapies of Western medicine, aiming to improve cure rates, reduce side effects, and enhance quality of life. Pancreatic cancer is highly malignant. While traditional Western medical treatments—such as surgical resection, chemotherapy, or radiotherapy—have demonstrated some efficacy, they are characterized by significant toxic side effects and a high risk of recurrence. TCM, which emphasizes syndrome differentiation and treatment, focuses on strengthening the body's defenses and eliminating pathogenic factors, and can play a positive role in improving immune function and suppressing tumor growth.

In this chapter, the author will focus on the integration of traditional Chinese and Western medicine in perioperative care, radiotherapy and chemotherapy, and minimally invasive interventions, and will discuss the synergistic effects of this integration to enable the formulation of more scientific and rational integrated treatment plans.

#### **4.1 Combined Treatment of Traditional Chinese Medicine and Surgery**

Although surgical treatment is the primary curative approach for pancreatic cancer, slow postoperative recovery and high recurrence rates remain persistent challenges. The use of Chinese herbal medicine before and after surgery enhances patients' physical constitution and reduces the occurrence of toxic side effects. Zhou Liuyong compared the therapeutic effects of two approaches for pancreatic cancer patients: a TCM regimen focused on regulating the spleen and stomach to treat the spleen and regulate the pancreas, versus single-agent chemotherapy. The results showed that the former approach demonstrated advantages in alleviating fatigue and pain, and could improve survival rates, indicating that TCM plays a role in fortifying the body's vital energy [32]. This demonstrates the efficacy of integrating TCM into perioperative care. Building on this, Wang Qingcai collected a small number of case studies documenting the use of integrated Chinese and Western medicine in 13 patients with advanced pancreatic cancer. The findings indicated that this approach improved patient tolerance and reduced the probability of recurrence, highlighting the importance of personalized treatment [33]. In summary, the use of Chinese herbal medicine during surgery not only facilitates patients' prompt recovery but also slows tumor progression by comprehensively regulating the entire body of each individual.

#### **4.2 Combination Therapy of Traditional Chinese Medicine with Radiotherapy and Chemotherapy**

Although radiotherapy and chemotherapy are widely recognized as the primary non-surgical treatments for pancreatic cancer, adverse reactions caused by these therapies—such as bone marrow suppression and impaired immune function—have hindered their clinical adoption. TCM can mitigate these adverse reactions by regulating the spleen and stomach, tonifying qi, and strengthening the body's vital energy, thereby enhancing the efficacy of treatment. He Guangjian reported a case of a patient with advanced pancreatic cancer who underwent concurrent Western radiotherapy and chemotherapy alongside TCM treatment. This approach not only resolved obstruction issues but also extended survival, demonstrating that TCM can serve as an adjunct in combination therapy [34]. This illustrates that TCM functions as a tool for adjuvant therapy. Zhang Xuanxuan reported another case in which TCM treatment extended the patient's life by as much as two years, emphasizing the role of “strengthening the body's defenses and expelling pathogens” formulas in maintaining quality of life during radiotherapy and chemotherapy, thereby providing a practical model for clinical practice [35]. You Jianliang systematically elaborated on the application of TCM during radiotherapy and chemotherapy for pancreatic cancer. Regulating the spleen and stomach can support pancreatic

function, alleviate symptoms of anorexia and fatigue, and improve compliance with radiotherapy and chemotherapy [36]. Following in-depth research on the “tonifying the healthy and expelling the pathogenic” effects of Chinese herbal medicine, Xia Shumin found that herbal intervention can improve immune indices and reduce the frequency of treatment interruptions due to radiotherapy and chemotherapy, thereby fully leveraging the strengths of both Western and traditional Chinese medicine [37]. The above studies all confirm that combined treatment with Chinese herbal medicine and radiotherapy/chemotherapy results in fewer adverse drug reactions and higher therapeutic efficacy.

#### **4.3 Combination of Traditional Chinese Medicine and Minimally Invasive Interventional Therapy**

For patients with mid-to-late-stage malignant tumors, minimally invasive surgeries such as laparoscopy can improve symptoms and local tissue conditions; however, they also carry a high risk of complications such as infection and endocrine disorders. In such cases, TCM intervention can stabilize the body through positive regulation and mitigate the effects of tissue damage. Chen Juan investigated the pathological process of malignant cachexia in pancreatic cancer patients and the role of TCM intervention in its management. She demonstrated that “Wuling Oral Liquid”—a formulation primarily composed of qi-tonifying and blood-stasis-removing herbs—improved the postoperative physical condition of pancreatic cancer patients. This highlights the tonifying and qi-regulating effects of TCM during minimally invasive surgery [38]. The above arguments further demonstrate, from a different perspective, the rationale and value of the aforementioned approaches for holistic treatment.

#### **4.4 Analysis of the Clinical Advantages of Integrated Traditional Chinese and Western Medicine Treatment**

The integration of Chinese and Western medicine in the treatment of pancreatic cancer offers distinct advantages, such as improved quality of life and symptom relief. The findings of Qi J's study indicate that the application of TCM techniques can effectively improve outcomes for pancreatic cancer patients, and government support is undoubtedly a critical component of this effort [39]. At the same time, elucidating the TCM concept of the pancreas from an anatomical perspective lays the foundation for the combined use of other methods [40]; Yang Yi Wang's literature review traces the progress of TCM following the introduction of Western medicine, arguing that the complementary strengths of both systems theoretically enhance diagnostic measures [41]; Li Qi's analysis of clinical data from 625 cases indicates that combined treatment with Chinese and Western medicines can extend median survival by approximately [42]; and Heng Yang's clinical trial data from the Xinjiang region show that this combined treatment regimen also helps reduce tumor recurrence [43]; Wright GP's global report on this combined therapy indicates that adding TCM to systematic chemotherapy can increase the likelihood of surgical success [44]; Shen Hong's analysis of clinical pathology data shows that TCM treatment helps improve prognostic indicators [45]; and Sun Yan Na, comparing patients from different ethnic groups, emphasizes the universality of this treatment model

[46]. All these studies reach a consistent conclusion: the integration of traditional Chinese and Western medicine enables the implementation of personalized precision medicine through multiple pathways.

In summary, the combination of TCM and chemotherapy offers clear clinical advantages in the treatment of pancreatic cancer, such as enhanced efficacy, reduced adverse reactions, and improved quality of life for patients. Future research should focus on standardized treatment protocols, in-depth mechanistic studies, and large-scale evidence-based validation to facilitate widespread adoption. In conclusion, the integration of TCM and Western medicine for treating pancreatic cancer represents a growing trend, positioning Chinese cultural characteristics on the global stage as a potential solution to the global cancer crisis.

## 5. Summary and Outlook

This paper systematically summarizes the research progress and achievements in pancreatic cancer from both traditional Chinese medicine (TCM) and Western medicine perspectives. Throughout the text, it is evident that TCM therapies have made significant strides, including research into the pathogenesis of the disease, the establishment of treatment principles, the synthesis of renowned physicians' clinical experience, and the integrated application of multiple therapies to achieve the effect of "holistic treatment." The most distinctive feature is "strengthening the body's defenses and expelling pathogens," which involves harmonizing the body's constitution and maintaining its balance to alleviate suffering and improve quality of life. Modern medicine has also continued to advance, offering effective anti-cancer approaches such as localized tumor control, surgical resection, systemic chemotherapy, and precision targeted therapy. However, the integration of Chinese and Western medicine is not a simple combination of the two; rather, it leverages the strengths of each on a complementary basis. Western medicine primarily focuses on attacking cancer cells to achieve the goal of controlling cancer progression efficiently and rapidly; Chinese medicine, on the other hand, primarily aims to enhance the body's immune function, mitigate the side effects of chemotherapy, and boost the body's resistance.

Although the current use of integrated traditional and Western medicine for treating pancreatic cancer faces numerous challenges—with clinical trials largely consisting of case reports or small-scale studies and lacking robust evidence from large-scale, multicenter, randomized controlled trials—this significantly hinders its practical clinical efficacy and widespread adoption. There remains no universally accepted standard protocol for integrated treatment, and different physicians employ varying therapeutic approaches. Standardizing effective treatments would maximize their benefits. Furthermore, further in-depth research is needed to elucidate the true biological effects of integrated Chinese and Western medicine, as well as the mechanisms underlying its therapeutic and adverse effects. This will enable the advancement of integrated medicine to a higher level and secure its recognition on a global scale.

Regarding the future development of this research, the author believes that efforts should be intensified to conduct

high-quality, large-scale clinical trials to serve as a data source for clinical guidelines. Basic research should be deepened to utilize cutting-edge technologies to investigate the effects, mechanisms, and signaling pathways of traditional Chinese medicinal formulae on tumors, and to explore how they can enhance the efficacy of Western medical therapies. Furthermore, an integrated TCM-Western medicine diagnostic and treatment model should be established, based on syndrome manifestations and clinical conditions with standardized efficacy evaluation, to ensure the systematic implementation of clinical standards. It is believed that only through in-depth, multi-level research and sustained efforts can the integration of traditional Chinese and Western medicine unlock greater potential for pancreatic cancer treatment. This will also contribute to China's solutions and support global cancer prevention efforts.

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