

Towards an Asian paradigm of inflammatory bowel disease management: A comparative review of China and Japan

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SUMMARY: This systematic review compares inflammatory bowel disease (IBD) management between China and Japan across epidemiology, clinical strategies, health insurance, and social security policies. Epidemiologically, the incidence of IBD is rapidly increasing in China, contributing to a growing disease burden. In contrast, Japan has a stabilized incidence but a rising prevalence, driven by an aging patient population. Clinically, step-up therapy remains the mainstream approach in China, limited by regional and financial disparities in biologic access. In contrast, Japan, benefiting from the "Designated Intractable Diseases" program, favors early intensive therapy with a focus on mucosal healing. In the area of precision medicine, China is advancing rapidly in therapeutic drug monitoring (TDM) for anti-TNF agents. In contrast, Japan leads in AI-assisted endoscopic assessment, despite slower adoption of TDM. Japan's comprehensive insurance covers most costs of IBD; China has significantly reduced drug prices *via* national negotiations, and yet reimbursement rates vary regionally. China has made progress in telemedicine and standardized fecal microbiota transplantation (FMT); Japan excels in AI endoscopy and use of an elemental diet. To optimize IBD care in the Asia-Pacific, China should enhance access to advanced therapies, implement hierarchical diagnosis/treatment, and develop multi-tiered insurance. Japan must address aging-related challenges and insurance sustainability while expanding use of TDM. Sino-Japanese collaboration in genetics, microbiome research, and AI-driven diagnostics, supported by sustained policy dialogue, is key to advancing precision IBD care and shaping a scalable "Asian model" for chronic disease management.

Keywords: inflammatory bowel disease, ulcerative colitis, Crohn's disease, epidemiology, precision medicine, health insurance policy

1. Introduction

Inflammatory bowel disease (IBD) — consisting of ulcerative colitis (UC) and Crohn's disease (CD) — is marked by chronic, relapsing gastrointestinal inflammation and a high risk of complications (1-3). The global burden of IBD continues to grow, with its incidence rising most rapidly in the Asia-Pacific region (4,5). Within Asia, China and Japan offer two contrasting but complementary scenarios: China, a newly industrialized economy, is experiencing one of the world's steepest increases in IBD incidence, whereas Japan, which industrialized earlier, is now home to a substantial population in which IBD is prevalent (5-7). Despite similarities in ethnicity, diet, and culture, the two countries are in different epidemiological stages, offering a natural comparator with which to study the impact of industrialization and demographic transition on IBD. Their health-care financing models likewise diverge. Japan's Specified Intractable Diseases subsidy virtually eliminates out-of-pocket costs and facilitates

early intensive therapy, whereas China's national price-negotiation program has markedly lowered biologic prices but regional reimbursement disparities persist — an ideal setting in which to study how distinct funding strategies affect treatment effectiveness and adherence (8-10). Technologically, China is rapidly expanding therapeutic drug monitoring (TDM) and telemedicine, while Japan leads in artificial intelligence (AI)-assisted endoscopy and elemental diet therapy (11-17); these complementary strengths could catalyze a new Asia-Pacific paradigm for IBD management

Accordingly, a systematic comparison of IBD in China and Japan could not only highlight practice gaps but also inform evidence-based prevention, management, and reimbursement policies for countries across the resource spectrum. Here, we juxtapose the two nations in terms of epidemiology, clinical management, health insurance structures, and adoption of advanced technologies in order to help optimize comprehensive IBD management and to foster regional collaboration in the Asia-Pacific (Table 1).

Table 1. Comparison of IBD epidemiology, clinical practice, health insurance policies, and use of new technology in China and Japan

Domain of comparison	China	Japan	Ref.
Epidemiological stage	In the "rapid increase in incidence" phase: Age-standardized incidence rose by about 2.9% annually (1990–2021); prevalence is accelerating.	In the "increasing prevalence" phase: Incidence has plateaued over the past decade; prevalence continues to rise due to prolonged survival.	(1,5,6)
Overall clinical strategy	From the traditional Step-up approach to the emerging Top-down approach, but the usage of advanced therapies such as biological agents in practice remains relatively low.	Prefers "early aggressive" strategy: Early introduction of biologics, JAK inhibitors, and other advanced therapies.	(13,14,35,36)
TDM	TDM is widely practiced. In 2018, the first "Expert Consensus on TDM for IBD Biologics" was issued; the 2023 national guideline re-emphasizes reactive TDM for IFX and other anti-TNF agents. First-tier centers are standardizing routine TDM.	Adoption of TDM is relatively slow; physicians more commonly rely on empirical dose escalation or switching therapies in cases of anti-TNF loss of response.	(35,39)
Disease monitoring	Emphasis on fecal calprotectin and imaging assessments; endoscopy mainly used for diagnosis and mucosal reassessment.	Emphasis on regular endoscopic evaluation for mucosal healing; non-invasive biomarkers are used as adjuncts.	(27,44,46)
Patient management	Medical care is mainly concentrated in large tertiary hospitals; primary care capacity remains limited.	A well-developed tiered care system: management has shifted from tertiary hospitals to community facilities; many non-IBD specialists manage common cases.	(28,33,34,47)
Insurance & economic burden	Based on basic health insurance plus critical illness insurance; biologics have been included in the NRDL, but reimbursement ratios vary widely across provinces, and patients still bear considerable out-of-pocket costs.	Universal health insurance plus "Designated Intractable Disease" subsidy covers > 90% of costs; out-of-pocket expense for high-cost biologics is nearly zero.	(8-10,36,50)
Social security policies	Disability assessment and employment support systems are still being developed; outpatient reimbursement for chronic diseases varies significantly by region.	Severely affected patients can apply for disability allowances, sick leave subsidies, etc.; employment is legally protected.	(18,48,49)
AI & digital medicine	Internet hospitals, AI-based consultation, and imaging-assisted diagnosis are in their pilot stages; large-scale use is still in its infancy.	Global leader in AI-assisted endoscopic analysis; multicenter prospective studies have been conducted for real-time mucosal scoring and histological prediction.	(11,12,15)
FMT	Early adoption; established fecal microbiota banks and FMT guidelines; routine use in refractory UC in some tertiary hospitals.	Still mainly in the clinical research stage; guidelines advise caution; probiotics are commonly used as adjunctive supplements.	(40,42,44,45)
Dietary therapy	Specialized formulas such as elemental/low-FODMAP diets are beginning to be incorporated into personalized management at some centers, but evidence and implementation remain limited.	EEN is the first-line induction therapy for pediatric CD; extensive clinical experience, with remission rates of up to 80%.	(16,17,45)

CD, Crohn's disease; EEN, exclusive enteral nutrition; FMT, fecal microbiota transplant; IBD, inflammatory bowel disease; TDM, therapeutic drug monitoring; UC, ulcerative colitis.

2. Epidemiological comparison

2.1. Trends in prevalence and incidence

Before the latter half of the 20th century, IBD was rarely reported in China and remained an uncommon disease in Japan. Since the beginning of the 21st century, both countries have witnessed a marked increase in the incidence and prevalence of IBD, albeit in different epidemiological stages (5,6) (Figure 1, A and B). According to nationwide Japanese data, the annual incidence of UC surged over 20-fold, from 0.6 per 100,000 in 2010 to 12.7 per 100,000 in 2019 (18). Overall, the prevalence of IBD increased from ~133.2 per 100,000 (2014) to ~368 per 100,000 (2022), and it is projected to exceed 600 per 100,000 by 2030 (19,20). Modeling indicates Japan's prevalence rose from 187.8 per 100,000 (2010) to 368.3 per 100,000 (2022), potentially surpassing projected figures for the US (645.8 vs. 629.9 per 100,000) by 2032 (20).

In contrast, China remains in the "second stage", exhibiting rapidly increasing incidence but lower overall rates (5,7) (Figure 1A). The age-standardized annual incidence of IBD in China rose from near zero (1990) to ~3.0 per 100,000 (2019), while the total prevalence increased from < 1 per 100,000 (1990) to ~47 per 100,000 (2019) (1). Although significantly below rates in Japan and South Korea, the annual growth rate in China is one of the world's highest (1). Projections suggest substantial increases in Chinese patients with IBD by

2030 (21). Thus, China's epidemic is accelerating, while Japan's is growing; both anticipate rising disease burdens (5) (Figure 1, A and B).

2.2. Disease spectrum and population characteristics

2.2.1. Population characteristics and age distribution

The prevalence of IBD in Asia, and especially China and Japan, exhibits distinct features in population composition, patterns, and spectrum. Japan's growing cases tend to indicate a rising incidence of IBD among pediatric and elderly patients (5) (Figure 1, C and D). Studies project Japan's annual incidence of IBD will increase by 2.88%, driven primarily by the < 18 age group, while the 18–65 cohort remains stable (19). This necessitates healthcare adaptations for aging patients and increasing pediatric cases. Conversely, Chinese patients with IBD are predominantly young and middle-aged (peak incidence: 20–40 years) (1), implying greater impacts on potential workforce productivity (5,22). Despite lower total numbers than Japan, China's rapidly accelerating incidence signifies substantial future burdens (1) (Figure 1A).

2.2.2. Distribution of disease subtype

The distribution of disease subtype also differs markedly. While UC remains designated intractable and historically predominant in Japan, the growth of CD has been

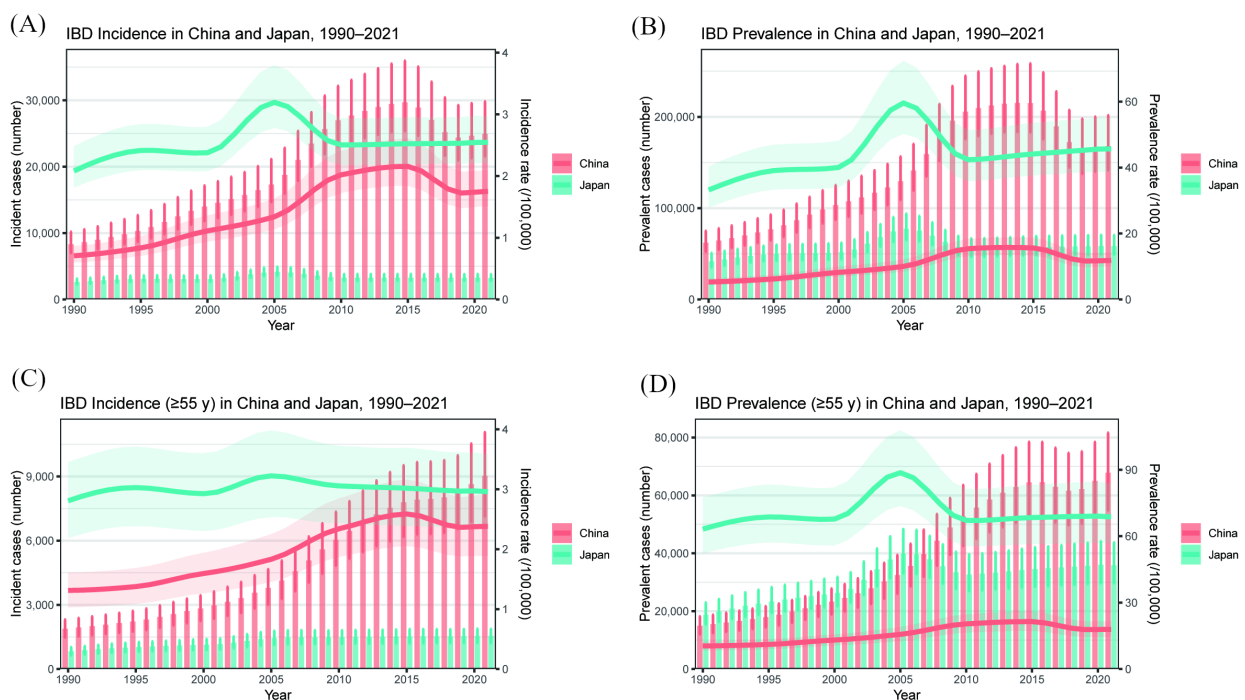


Figure 1. IBD Burden in China and Japan (1990–2021). (A, B) Incidence and prevalence among the total population; (C, D) Incidence and prevalence among the elderly population. Bars: Annual cases (left axis); lines \pm 95 % UI: corresponding rate per 100,000 (right axis). Red: China; Blue: Japan. All data are from the Global Burden of Disease 2021 database.

significant recently (18). Early Chinese data indicated the predominance of UC, but the growth of CD now surpasses UC in some regions (23-25). Overall, Japan exhibits a "mature" epidemic with a large, diverse patient base, whereas China exhibits an "emerging" phase with rapid growth, necessitating vigilance with regard to future healthcare challenges (1).

2.2.3. Clinical and genetic characteristics

Clinical subtypes further demonstrate national variations. In China, the ratio of UC to CD is approximately 2:1, with the ileocolonic (L3) type accounting for about 48% of all CD cases (26). The male-to-female ratio of CD patients is about 1.5:1, whereas UC has a nearly equal gender distribution (26). In Japan, the UC to CD ratio is approximately 3:1, with L3 CD accounting for about 55%, and a similarly higher proportion of males among CD patients (6,27). A meta-analysis reported that 65% of Asian CD patients are male, in contrast to 49% in Caucasians, highlighting a unique regional gender distribution (28).

Genetic studies have revealed significant differences in IBD susceptibility loci between East Asian and Western populations. NOD2 mutations, which are closely associated with CD in Western populations, are rare in Japan (29). Conversely, TNFSF15 variants are closely associated with IBD in Asians, while high-risk Western loci like ATG16L1 are less frequent in East Asians (20). These findings underscore substantial genetic divergence in IBD susceptibility among Chinese, Japanese, and Western populations.

2.2.4. Contrast with Western epidemiology and phenotype

In North America and Western Europe, IBD has reached a late-plateau stage: incidence has stabilized, and yet prevalence now exceeds 600–700 per 100 000 (5,30). In contrast, China remains in a rapid-growth phase, whereas Japan is in an aging phase with an aging patient population. Consequently, Western IBD cohorts are more likely to be overweight or obese and to present with metabolic comorbidities such as non-alcoholic fatty-liver disease or type 2 diabetes. In China — and, to a lesser extent, Japan — under-nutrition and low body mass index are still relatively common (31). These contrasting phenotypes mirror dietary and lifestyle differences (higher intake of ultra-processed, high-fat foods and earlier widespread use of antibiotics in the West versus more fiber-rich diets and later industrialization in East Asia) and reflect disparities in healthcare system maturity: Western countries have decades-old multidisciplinary IBD services with integrated dietetic support, while China is still building specialist capacity (32,33). Collectively, differences in body habitus, environmental exposure, and healthcare infrastructure

highlight the need for region-specific prevention and management strategies.

3. Clinical management and precision medicine

3.1. Overall therapeutic strategies

3.1.1. China: From traditional step-up to emerging top-down strategies

While both countries follow international IBD guidelines, real-world practices diverge due to variations in healthcare infrastructure and physician decision-making. Historically, IBD management in China has centered around a step-up therapeutic strategy, beginning with 5-aminosalicylic acid (5-ASA) and corticosteroids, progressing to immunomodulators and biologics in refractory cases. This approach was driven by factors such as limited availability of biologics, insufficient availability of specialists, and a high patient out-of-pocket burden. In recent years, however, treatment paradigms have evolved. The 2023 Chinese Consensus on the Diagnosis and Treatment of IBD explicitly advocates for early introduction of biologics in high-risk patients, supporting an "accelerated step-up" or even top-down strategy (13,14). The guideline also recommends proactive use of TDM to help optimize anti-TNF therapy and proposes de-escalation protocols for cases of stable remission (13,14).

Real-world implementation is increasing but on an uneven basis. One large-scale survey reported that only 13.7% of Chinese UC patients received biologics within the first year of diagnosis, and mucosal healing rates remained below 15% (34). Nonetheless, major IBD centers in cities like Nanjing and Shanghai are increasingly adopting early biologic strategies, often guided by risk-based stratification models. Expanded physician training, policy support, and reimbursement reforms will be key to scaling these practices nationally.

3.1.2. Japan: Early biologic era

Conversely, Japan entered the biologic era earlier (with post-infliximab approval in the early 2000s), shifting toward proactive treatment. Current guidelines emphasize early mucosal healing and prevention of complications (18). Biologics and targeted small molecules are widely used for moderate to severe disease. Second-line therapies (intravenous cyclosporine/tacrolimus for steroid-refractory UC) and early biologics are more common (35). Japanese physicians traditionally favor tacrolimus and leukocyte apheresis for steroid-refractory UC, in contrast to China's earlier switch to biologics (35). While therapeutic concepts converge, China's utilization of advanced therapy lags due to historical limitations on drug access and economic factors (36,37). Bridging this gap requires enhanced physician training and improved

reimbursement.

3.2. Use of biologic therapies

Biologics (TNF, integrin, IL-12/23, and JAK inhibitors) have transformed IBD management. Japan's comprehensive insurance facilitates access, with > 50% of UC and ~75% of CD patients receiving biologics (36). Anti-TNF agents became standard for severe cases post-2002; newer agents (ustekinumab, vedolizumab, and tofacitinib) expanded options, enabling mechanism-based selection (36). Critically, Japan's intractable disease subsidy system minimizes the financial impact on drug selection (36).

China faces greater challenges: biologics were incorporated into reimbursement schemes only recently (e.g., adalimumab was included nationally in 2019) (10). Consequently, biologic utilization nationwide remains substantially lower than in developed countries, hindered by cost and limited physician/patient awareness (38). Localized production, greater reimbursement, and enhanced medical education are expected to improve future adoption.

3.3. TDM

3.3.1. China: Growing emphasis on TDM

TDM is a key component of precision medicine. By measuring drug concentrations and anti-drug antibodies in patients' blood, TDM can optimize dosing and guide therapeutic adjustments (39). Here, practices diverge significantly between China and Japan. According to a 2020 survey of Asian IBD specialists, when selecting management options for patients who do not respond to anti-TNF therapy, more than 90% of Chinese clinicians would consider, among other possibilities, measuring serum trough concentrations of anti-TNF agents and anti-drug antibodies. The corresponding proportions were approximately 32% in South Korea and less than 15% in Japan, suggesting that the adoption of TDM in China already surpasses the regional average across Asia (35). This may be attributed to China's growing emphasis on precision IBD care in recent years, with multiple centers establishing drug concentration monitoring platforms and clinically utilizing locally produced reagents and laboratory services (35).

3.3.2. Japan: Adoption of TDM is relatively slow

In contrast, the uptake of TDM in Japan has been relatively slow. Most Japanese clinicians still prefer empirical dose escalation or interval shortening when confronted with a poor response to anti-TNF therapy, rather than routinely performing drug concentration testing (35). Potential reasons include the previous lack of commercial assays in Japan and the fact that

biologic therapy is covered by insurance, while TDM testing has typically been paid for out-of-pocket by patients. However, with mounting supporting evidence, awareness of TDM's value is rising in Japan, and some centers have begun to offer these services, with broader implementation expected in the coming years. In China, efforts should focus on ensuring the quality and standardization of testing and on using TDM results to guide clinical decision-making — for example, distinguishing between secondary loss of response due to low drug levels and immunogenicity — to inform whether to switch drugs or intensify therapy (39). In summary, TDM is a pivotal tool for personalized IBD management, and there are differences in both awareness and practice in China and Japan, which may provide opportunities for mutual learning.

3.4. Microbiome-based interventions

Beyond TDM, gut-microbiota-targeted interventions offer a complementary avenue for precision care. Fecal microbiota transplantation (FMT), which is intended to re-establish microbial homeostasis, has shown induction potential in refractory UC (40). China adopted this approach early: national stool banks and an Expert Consensus on the Clinical Practice of FMT have been established, and several tertiary centers now provide washed microbiota transplantation (WMT) as an adjunct, lowering adverse event rates from 38% with conventional FMT to 12% (41-43). Japan, in contrast, remains cautious, limiting FMT to research protocols without routine clinical use in IBD (44).

Probiotic strategies also diverge. Japan prescribes formulations such as *Clostridium butyricum* as adjunct therapy, whereas most Chinese patients self-administer over-the-counter probiotics whose efficacy still needs to be confirmed in high-quality RCTs (45,46). Nutritional modulation follows a similar pattern: elemental diets are widely used in Japan as first-line induction for CD — achieving pediatric remission rates approaching 80% — and are now being incorporated into personalized regimens at selected Chinese centers (16,17).

3.5. Monitoring strategies and care delivery models

China and Japan also differ in their approaches to patient management. In Japan, the provision of IBD care has progressively shifted from tertiary hospitals to community hospitals, and an increasing number of non-IBD specialists now manage clinically stable cases (36). This has enabled Japan to develop an extensive tiered care network, but also presents challenges for consistency in care, prompting the country to enhance IBD training for non-specialists (47). In China, most IBD patients are still managed at large tertiary hospitals, while the diagnostic and treatment capabilities of primary care facilities remain limited (48) (Table 2). As a result,

Table 2. Comparison of IBD diagnosis and support systems in China, Japan, Europe, and the US

Comparison domain	China	Japan	Europe and the US	Ref.
Initial point-of-care facilities and their diagnostic capacity	Gastroenterology departments in county-level hospitals possess colonoscopy capability but have limited diagnostic experience; a hierarchical referral system is being expanded.	Community gastroenterology clinics predominate; about 80% are equipped with portable colonoscopes, enabling same-day screening; fully covered by universal health insurance.	Predominantly managed by family physicians who provide symptomatic care; no endoscopic accreditation; dependent on a mandatory referral system.	(22,28,43)
Nursing infrastructure	Study nurses double as follow-up coordinators (pilot phase); follow-up is predominantly outpatient.	Comprehensive nursing teams with training programs for specialized nurses; IBD outpatient nurses are included in routine practice.	Dedicated IBD nursing teams responsible for patient education and follow-up, with telephone and e-mail support.	(26,27,42)
Follow-up frequency and assessment tools	Endoscopy every 1–2 years with variable adherence — many patients present only upon relapse; biomarkers: CRP/ESR widely available, fecal calprotectin limited to tertiary centers.	High-frequency endoscopic surveillance (particularly post-operatively); biomarkers: CRP, fecal calprotectin plus immunochemical fecal occult blood testing.	Endoscopy every 3–6 months; biomarkers (CRP, fecal calprotectin) every 3–6 months; high-resolution endoscopy or MRI is routinely used.	(27,44,46)
Patient education and proactive management	Public-interest initiatives (e.g., IBD Care Center) and WeChat-based guidance enhance interaction, but a systematic framework is still in its infancy.	Classes for specialized nurses emphasizing adolescent transition care and healthy lifestyle.	Structured education programs on diet, pharmacotherapy, and psychosocial health, supported by mHealth platforms; patient-centered shared decision-making.	(27,55,56)
Patient organizations and community support	Hospital-led support platforms; nascent local patient groups and WeChat communities remain small-scale.	National IBD Network and regional associations hold regular meetings and offer employment support.	Well-established non-profit organizations (CCFA/EFCCA) provide peer-support groups and online resources.	(28,34,49)
Mechanisms for responding to relapse	WeChat/telephone emergency contacts plus pilot follow-up apps; post-relapse response remains slow.	Telephone-booking rapid clinics with systematic recall reminders; endoscopy-guided therapeutic decisions.	Rapid-access IBD clinics, coupled with electronic medical-record alerts, facilitate urgent follow-up and remote therapeutic adjustments.	(27,28,46)

IBD, inflammatory bowel disease.

China has promoted the development of IBD centers and pilot programs for tiered care, encouraged the formation of provincial and municipal IBD specialist alliances, established referral standards, and enhanced recognition and management at the primary care level. To mitigate urban–rural disparities and relieve the caseload at academic centers, the National Health Commission has introduced a tiered-care reform strategy centered on IBD-specific regional medical consortia that link services across the province–city–county hierarchy. Under this framework, provincial IBD centers function as referral hubs for complex and refractory cases, municipal hospitals deliver standardized maintenance therapy, and county-level facilities focus on early screening and triage. Collectively, these reforms aim to decentralize care, harmonize treatment pathways, and narrow geographic inequities in IBD management.

There are also differences in disease monitoring preferences. Japanese clinicians tend to favor direct endoscopic assessment: in addition to standard colonoscopy, Japan is a global leader in small bowel endoscopy (capsule endoscopy and double-balloon enteroscopy), which is routinely used to assess small bowel involvement in CD. Japan has also pioneered research on AI-assisted endoscopic evaluation of mucosal inflammation. In contrast, Chinese clinicians more often combine noninvasive markers and imaging: fecal calprotectin, MRI/CT enterography, and other modalities are increasingly utilized (35). These differences reflect variations in resource allocation and patient preferences: capsule endoscopy is reimbursed in Japan but remains an out-of-pocket, high-cost option in China, making laboratory tests more attractive to patients. As such, IBD monitoring in the two countries reflects a contrast between "invasive" and "noninvasive" strategies. Nevertheless, the overall trend is toward more precise evaluation and rigorous follow-up to detect disease changes and adjust treatment in a timely manner.

In the quest for more precise disease assessment, AI is assuming an increasingly prominent role. Japan leads AI-assisted endoscopy, where deep-learning models autonomously interpret UC images, quantify mucosal healing, and assign Mayo endoscopic subscores with > 90% accuracy, thereby standardizing evaluation and limiting observer bias (11,12). China, in contrast, is expanding AI deployment across clinical services: big-data and natural-language–driven IBD consultation platforms support decision-making, while a nationwide "Internet hospital" network (> 3,000 sites by the end of 2023) integrates teleconsultation, e-prescriptions, and coordinated offline care, facilitating remote symptom monitoring and medication resupply.

4. Differences in health insurance and social security policies

4.1. Japan's multitiered patient support system

Since the 1970s, the Japanese Government has classified UC and CD as "designated intractable diseases" ("Nanbyo"), granting affected patients access to special medical subsidies (8,9). Currently, Japan operates a universal health insurance system, under which IBD patients receive reimbursement for medical expenses according to statutory provisions. In addition, the intractable disease subsidy further alleviates out-of-pocket costs for high medical expenses (36). For example, Japanese Government policy covers 70–80% of costs for designated intractable diseases, leaving patients to pay only 20–30%. There is also a monthly payment ceiling based on household income (8). This means that even with the use of expensive biologics, the patient's personal financial burden is relatively low, with most costs borne by the government and insurers (36). This system has greatly promoted the use of biologics in Japan and ensured long-term disease management. Nevertheless, studies have found that low-income patients still face a monthly co-payment of 10,000–20,000 yen, which can impact their work (18). To address this, patients may apply for additional welfare benefits such as a chronic disease certificate, and those with severe illness can receive nursing care subsidies. Moreover, Japan has active patient advocacy groups and social security support systems that provide psychological counseling and employment protection for IBD patients (49). These measures result in a higher overall quality of life for Japanese IBD patients compared to those in countries with heavier economic burdens.

4.2. Improved insurance coverage for IBD in China

China currently has no intractable disease subsidy specifically for IBD. However, the three-tier payment structure of the national social health-insurance system — the pooled fund of Basic Medical Insurance, Catastrophic Medical Insurance, and means-tested Medical Assistance — has begun to cushion the economic burden on patients. In the past, the high cost of biologics — such as several thousand RMB per injection for infliximab — made lifelong treatment unaffordable for many. Since the late 2010s, several IBD-related drugs have been included in China's National Reimbursement Drug List (NRDL). For example, adalimumab (Humira) was included in the reimbursement list in 2019 after price negotiations, leading to a substantial price reduction. According to a single-center study, the annual out-of-pocket cost for biologics dropped from an average of 20,000 RMB to about 8,800 RMB per year, a reduction of more than 50% after insurance coverage (50). This has greatly improved access and adherence to biologic therapy. Currently, infliximab, adalimumab, ustekinumab, vedolizumab, and tofacitinib are all available in China and are gradually being included in reimbursement

programs. However, reimbursement proportion and policies vary by region: most areas cover about 70% of costs, with patients still paying around 30% out of pocket, while less developed regions provide less coverage (often < 60%).

Twenty-five of 31 provinces now classify IBD as a "special disease, outpatient care", activating a mechanism for reimbursement of outpatient care for special diseases that allows patients to claim outpatient drug costs at the same reimbursement rate as inpatient care, thereby avoiding unnecessary hospital admission. In provinces where this mechanism is absent, patients must still be hospitalized to be reimbursed for high-cost drugs, and out-of-pocket spending remains substantial. To fill the gap in formal insurance, China has recently introduced patient assistance programs led by charitable organizations. For example, the China Charity Federation has collaborated with pharmaceutical companies to offer programs where patients purchasing a certain course of medication can receive additional doses free of charge, further reducing overall costs. The Chinese Red Cross Foundation has also established a dedicated fund for IBD care to assist financially disadvantaged patients. Overall, health insurance coverage for IBD in China is improving rapidly, but there remains a clear gap compared to Japan. Out-of-pocket payments remain relatively high and regional disparities persist, with some families facing poverty due to illness. Potential solutions include expanding outpatient reimbursement for IBD in more provinces, increasing the reimbursement rate for biologics, and developing supplementary commercial insurance. Additionally, increasing public awareness and advocating for the inclusion of IBD in major chronic disease management would be beneficial.

4.3. Social support and disability protection

IBD often affects patients' quality of life and ability to work, making appropriate social security measures essential. In Japan, the disability certificate system provides benefits for patients with severe IBD, including employment leave subsidies and nursing care services. UC is recognized as a condition eligible for special medical subsidies, and patients' employment rights are protected by law, requiring employers to provide reasonable accommodations. China has lagged behind in this regard, with IBD not currently recognized as a disability and most patients not entitled to disability benefits. However, as the disease burden increases, there is growing advocacy for improved employment protection and livelihood support for IBD patients (48). This includes policies such as medical leave, tax reductions, and exemptions. Patient education and public awareness are also critical: due to the private nature of symptoms such as diarrhea and abdominal pain, many patients face misunderstanding or even discrimination.

In recent years, China has organized annual "World IBD Day" activities to raise public awareness, and campaigns such as "IBD without Borders — Breaking Taboos" are fostering a more inclusive social environment. In summary, health insurance and social security are essential components of comprehensive IBD management. The Japanese experience demonstrates that robust policy support can significantly improve patient outcomes and quality of life (49). China is moving in this direction, but further progress is needed in insurance reimbursement, charitable assistance, and legal protection to establish a comprehensive IBD support network that integrates healthcare and social services.

4.4. Psychosocial support and societal engagement strategies

IBD significantly impairs patients' psychological well-being and social functioning (51-53). Enhancing public awareness and mitigating disease stigma constitute critical challenges in both nations. Establishing regular exchanges between Chinese and Japanese IBD patient organizations is essential to facilitating the sharing of educational resources and rehabilitation experiences. Organizing joint annual online patient forums, featuring bilingual presentations by experts, could increase patient confidence and improve disease literacy. In terms of psychological support, Japan possesses expertise in training professional IBD counselors (54); collaborative Sino-Japanese efforts should focus on developing, implementing, and evaluating culturally adapted psychological assessment and intervention guidelines. Social media constitutes a critical platform; implementing joint public campaigns — such as photo exhibitions, essay contests, and charity runs — can effectively raise awareness, advocate for policy support, and foster inclusive societal attitudes toward IBD patients (48,55,56). As part of policy advocacy, Chinese and Japanese researchers and patient groups should jointly petition international health-related organizations to incorporate IBD in global chronic disease prevention frameworks. They must concurrently push for enhanced legislative protections within domestic jurisdictions.

5. Conclusion and Outlook

China and Japan face distinct IBD challenges shaped by divergent epidemiological stages: China is contending with a rapidly rising incidence, while Japan is managing growing prevalence within an aging population. Clinically, China is bridging gaps in access to biologics and adoption of precision medicine, while Japan is capitalizing on innovations like AI to enhance the quality of care. Policymaking reveals core contrasts: Japan substantially subsidizes patient costs, while China prioritizes drug price negotiations and multi-tiered

insurance frameworks. Critical collaborative priorities must address: *i*) Cost sustainability (Japan: optimizing efficiency, China: expanding reimbursement); and *ii*) Joint research (shared data, examination of pathogenesis, and optimization of therapy). Harnessing complementary strengths — China's scale and Japan's advanced systems — offers a unique pathway to developing an effective "Asian paradigm" for chronic disease management in response to this shared burden.

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