Real-World Clinical Outcomes of Ivermectin and Mebendazole in Cancer Patients: Results from a Prospective Observational Cohort

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Abstract

Background: Drug repurposing offers a pathway to identify accessible, low-toxicity cancer therapies. Ivermectin and mebendazole have demonstrated multi-target anti-cancer activity in preclinical models, including the inhibition of cancer cell proliferation and the targeting of cancer stem cells. This paper evaluates real-world patient-reported outcomes, safety, and adherence in a cohort of cancer patients utilizing this combination protocol.

Methods: We analyzed a prospective observational cohort of 197 cancer patients who were prescribed ivermectin and mebendazole off-label through a telemedicine platform by licensed U.S. healthcare providers. Participants received compounded oral capsules containing 25 mg ivermectin and 250 mg mebendazole. As part of a clinical program evaluation, data were collected via voluntary, standardized digital surveys at baseline and at approximately 6-month follow-up. Of the initial cohort (N = 197), baseline characteristics, including cancer type and disease status, were assessed. A total of 122 participants completed the follow-up survey (61.9% response rate) to evaluate self-reported cancer outcomes, medication adherence, and adverse events. 95% confidence intervals (CI) were calculated for primary outcome measures using the Wilson score method. Dose-stratified analyses for outcomes and safety were conducted using Chi-square statistics.

Results: The cohort represented a diverse clinical profile of cancer patients, with mean age of 67 years and nearly balanced sex distribution (52.3% male, 47.7% female). Cancer types included prostate (27.9%), breast (18.3%), lung (8.6%), colon (5.1%), urologic (4.6%), pancreatic (3.0%), liver (2.5%), gynecologic (2.5%), and hematologic (2.5%) malignancies. At enrollment, participants had a median duration since initial diagnosis of 1.2 years, with 37.1% experiencing active disease progression. At 6-month follow-up, medication adherence was high with 86.9% of participants completing the full initial 90-capsule ivermectin-mebendazole prescription and 66.4% remaining on the protocol at 6 months. The Clinical Benefit Ratio (CBR) was 84.4% (95% CI: 77.0–89.8%). Notably, 48.4% (95% CI: 39.7–57.1%) of the cohort reported the strongest positive outcomes, consisting of regression (15.6%; 95% CI: 10.2–23.0%) or no current evidence of disease (NED, 32.8%; 95% CI: 25.1–41.5%). Disease stability was reported to be maintained in 36.1% (95% CI: 28.1–44.9%) of participants, while 15.6% (95% CI: 10.2–23.0%) reported disease progression. While 25.4% reported mild side effects (primarily gastrointestinal), 93.6% of those affected continued treatment through minor dose adjustments. Some participants reported concurrent conventional therapies, including chemotherapy (27.9%), radiation therapy (21.3%), and surgery (19.7%), as well as adjunctive interventions such as supplement use (49.2%), dietary modification (37.7%), and other integrative approaches.

Conclusions: In this prospective real-world cohort, the combination of ivermectin and mebendazole was associated with high rates of self-reported clinical benefit, with nearly half of participants reporting tumor regression or no current evidence of disease across a heterogeneous population of cancer patients. These findings provide a compelling clinical signal that these well-tolerated, repurposed agents may offer therapeutic benefit. However, given the observational design, reliance on self-reported outcomes, and potential for selection bias and uncontrolled confounding, these findings should be interpreted as hypothesis-generating. Urgent prospective, randomized, placebo-controlled clinical trials are warranted to validate these observations and further define optimal dosing strategies.

Keywords: Ivermectin; Mebendazole; Cancer; Drug repurposing; Oncology; Clinical outcomes

Introduction

Cancer remains one of the leading causes of death globally, with conventional treatments such as chemotherapy, radiation therapy, and targeted agents frequently limited by significant toxicity, high cost, development of resistance, and variable long-term efficacy [1]. In this context, drug repurposing has gained substantial attention as a strategy to rapidly identify effective and affordable therapeutic options using medications with good patient tolerance and well-established safety profiles [2]. This approach offers a practical pathway to accelerate the development of new cancer therapies or accompaniments of therapies while leveraging decades of existing safety data.

Ivermectin and mebendazole are two widely used antiparasitic agents that have demonstrated highly promising anti-cancer activity in preclinical models. Ivermectin has exhibited exceptional multi-target efficacy, inhibiting cancer cell proliferation, metastasis, and angiogenesis by targeting key pathways including PAK1, Wnt/β-catenin, and mitochondrial function [3]. It has been shown to exert over 14 distinct anti-cancer mechanisms across more than 12 cancer types and has demonstrated excellent safety in cancer patients (including those actively undergoing chemotherapy) [4]. Ivermectin and mebendazole selectively target cancer stem cells — the critical subpopulation responsible for tumor recurrence and therapy resistance [4]. A recent 2025 review has further characterized ivermectin's favorable physicochemical profile, including high lipophilicity and its strong ability to modulate multiple oncogenic signaling pathways such as Wnt/β-catenin, PI3K/Akt/mTOR, and STAT3 across a wide range of malignancies [5]. Additionally, ivermectin has anti-Spike protein properties, and thus may be particularly advantaged in the current pandemic era where both SARS-CoV-2 infection and COVID-19 vaccination has been associated with more aggressive and rapidly developing malignancies [6]. Similarly, mebendazole has demonstrated robust anticancer effects primarily through microtubule disruption, leading to effective cell cycle arrest, potent induction of apoptosis, and significant inhibition of tumor growth and vascularization [7]. Both ivermectin and mebendazole exhibit excellent tissue penetration [8]. These highly complementary mechanisms suggest that the combination of ivermectin and mebendazole holds considerable therapeutic potential and may offer meaningful advantages over either agent used alone.

Despite compelling preclinical data and documented safe use in cancer patients [4], robust clinical evidence evaluating the ivermectin–mebendazole combination in oncology remains limited. The present prospective clinical program evaluation was therefore conducted to assess real-world self-reported cancer outcomes, medication adherence, tolerability, and patient experience among individuals prescribed a compounded ivermectin–mebendazole formulation through a telemedicine platform.

Methods

Study Design

This evaluation utilized a prospective observational cohort design, with analyses conducted retrospectively on prospectively collected data from a two-wave clinical program evaluation

utilizing standardized digital surveys to assess real-world, self-reported cancer outcomes, medication adherence, and tolerability of ivermectin and mebendazole. The analysis focused on a cohort of adult patients with confirmed cancer diagnoses who had been prescribed a compounded combination of ivermectin and mebendazole as part of their routine clinical care. The baseline assessment (Survey 1) was administered from August to September 2025, with a longitudinal follow-up occurring between January and March 2026, representing an approximate 6-month interval (range: 4–7 months). The overall study design, clinical workflow, and two-wave data collection framework are illustrated in **Figure 1.**

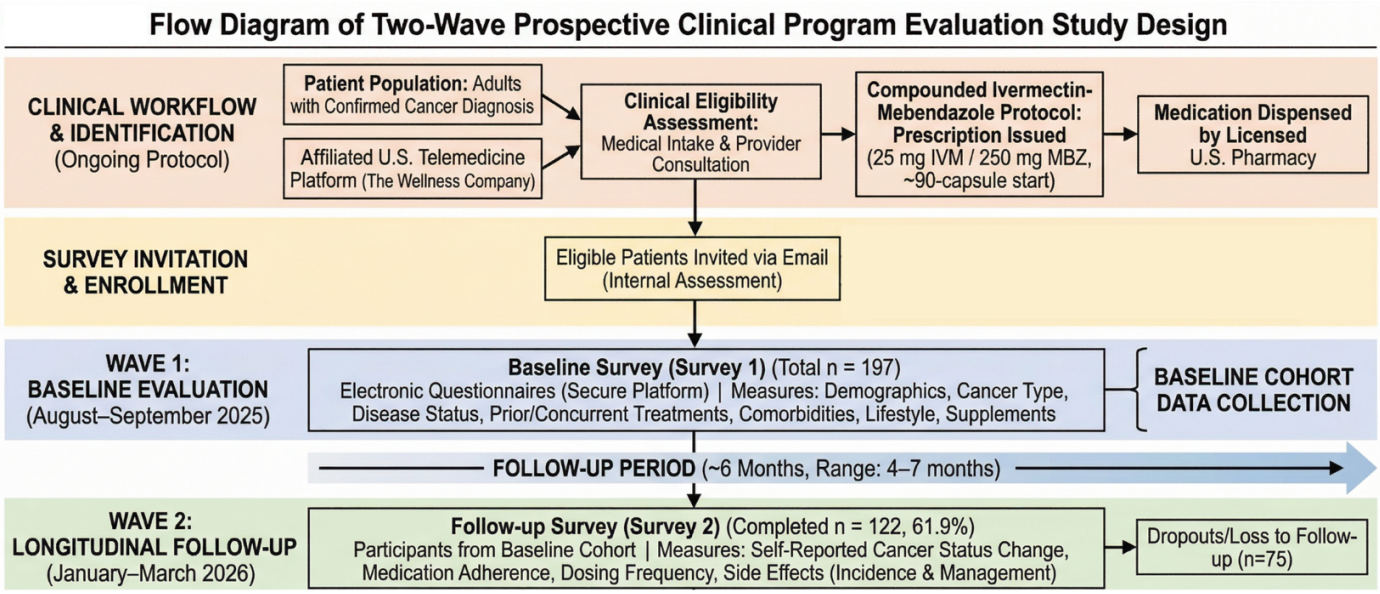

Figure 1. Flow Diagram of the Two-Wave Prospective Clinical Program Evaluation, Including Clinical Workflow, Enrollment, and Longitudinal Follow-Up

Participants and Recruitment

The sample included adults (≥18 years) with confirmed cancer diagnoses who received off-label prescriptions for the ivermectin-mebendazole protocol from licensed U.S. healthcare providers affiliated with The Wellness Company (TWC) telemedicine platform. The clinical workflow required each individual to complete a medical intake form and undergo a consultation with a licensed provider to determine eligibility prior to the issuance of the prescription. All medications were dispensed by a licensed U.S. pharmacy following provider approval. As part of an internal assessment of clinical services and product outcomes, eligible patients were invited by TWC via email to voluntarily participate in the surveys. A total of 197 participants completed the baseline evaluation, and 122 (61.9%) provided follow-up data at 6 months.

Medication Use

Participants received compounded oral capsules containing 25 mg ivermectin and 250 mg mebendazole per capsule. The initial prescription typically provided 90 capsules. Dosing and schedule were individualized by the prescribing provider and patient, most commonly one or two

tablets per day. Many participants followed cyclic regimens and reordered the medication as desired.

Data Collection

Data were collected using structured electronic questionnaires hosted on a secure survey platform assuring confidentiality and anonymity. The baseline survey captured demographics, socioeconomic information, cancer type, disease status at enrollment, and prior or concurrent conventional treatments. It also documented comorbidities, lifestyle factors, and the use of concurrent supplements or dietary interventions. The follow-up survey assessed longitudinal outcomes, including self-reported changes in cancer status, medication adherence, dosing frequency, and the incidence and management of side effects. All responses were self-reported by participants.

Outcome Measures

The primary outcome herein was self-reported cancer status at follow-up, categorized as no current evidence of disease (NED), regressed, stayed about the same (stable disease), or spread or progressed (responses of "spread" and "spread or progressed" were combined into a single progression category for analysis). The Clinical Benefit Ratio (CBR) was defined a priori as the proportion of participants with NED, regression, or stable disease. Secondary outcomes included completion of the initial 90-capsule prescription, re-order frequency, ongoing medication use, and incidence/severity of side effects.

Statistical Analysis

Descriptive statistics were employed to summarize the demographic and clinical characteristics of the cohort, with categorical variables reported as frequencies and percentages while continuous variables were presented as means and medians. The primary analysis focused on the Clinical Benefit Ratio (CBR) and the proportion of participants reporting the strongest positive outcomes, specifically regression or no evidence of disease (NED). To account for the precision of these self-reported proportions within the 122-subject follow-up cohort, 95% confidence intervals (CI) were calculated using the Wilson score method. Exploratory dose-stratified comparisons for outcomes and safety were performed using Chi-square statistics. To assess for potential responder bias, aggregate clinical profiles of the follow-up cohort were compared against the baseline population using Chi-square statistics to evaluate for significant differences in standard-of-care therapy utilization. All data cleaning and quantitative evaluations were performed using Python (pandas) and Microsoft Excel.

Results

A total of 197 individuals completed the baseline survey. Of these, 122 participants completed the 6-month follow-up survey, yielding a 61.9% response fraction.

Demographic and Socioeconomic Characteristics

Baseline demographic and socioeconomic characteristics of the study population are presented in **Table 1**. The cohort was predominantly older adults, with a mean age of 67 years and a median age of 68 years at baseline. Most participants were between 60 and 79 years old. Sex distribution was nearly even, 52.3% male and 47.7% female. Anthropometric assessments revealed a mean body weight of 76.6 kg (SD 18.8; range 45.5–181.8 kg) and a mean body mass index (BMI) of 25.7 kg/m² (SD 5.2; range 16.5–54.4 kg/m²). Approximately 45.7% (n = 90) of the cohort fell within the normal weight range (BMI 18.5–24.9), while 34.0% (n = 67) were classified as overweight, 17.3% (n = 34) as obese, and 3.0% (n = 6) as underweight. The cohort was predominantly White. Education levels were relatively high, with over 50% of participants holding a college or graduate degree. Annual household income distribution reflected a middle-to-upper socioeconomic profile, with the $100,000 to $250,000 bracket being the most represented. Aside from that, 19.3% reported household incomes under $50,000. Regarding COVID-19 vaccination status, 195 of the 197 baseline participants provided data on the number of vaccine doses received. A majority of the cohort, 122 participants (62.6%), reported being unvaccinated (0 doses). Among those who had received at least one dose, 33 (16.9%) reported having received two doses, and 22 (11.3%) had received three or more doses. Collectively, 73 participants (37.4%) reported being vaccinated with one or more doses. Smoking history was also assessed at baseline. A significant majority of the cohort, 142 participants (72.1%), reported having never smoked. Among those with a history of tobacco use, 52 (26.4%) were identified as former smokers, while only 3 (1.5%) reported being current smokers at the time of enrollment.

Characteristic	**n (%) or Value**
Age, mean (SD)	67 (± 10.5)
Median age	68
Body weight, mean (SD), kg	76.6 (± 18.8)
BMI, mean (SD), kg/m²	25.7 (± 5.2)
BMI Category	
Underweight (<18.5)	6 (3.0%)
Normal weight (18.5–24.9)	90 (45.7%)
Overweight (25.0–29.9)	67 (34.0%)
Obese (≥30.0)	34 (17.3%)
Sex	
Male	103 (52.3%)
Female	94 (47.7%)
COVID-19 Vaccination Status (n = 195)	
Unvaccinated (0 doses)	122 (62.6%)
Vaccinated (1+ doses)	73 (37.4%)
Smoking Status	
Never Smoker	142 (72.1%)
Former Smoker	52 (26.4%)
Current Smoker	3 (1.5%)
Education Level	
Graduate/professional degree	49 (24.9%)
College graduate	68 (34.5%)
Some college/university	30 (15.2%)
Trade/technical/community college	17 (8.6%)

High school	33 (16.8%)
Annual Household Income	
<$50,000	38 (19.3%)
$50,000–$100,000	65 (33.0%)
$100,000–$250,000	68 (34.5%)
>$250,000	26 (13.2%)

Table 1. Baseline Demographic and Socioeconomic Characteristics

Baseline Cancer Profile and Prior Treatments

Baseline cancer characteristics and prior or concurrent treatments among participants are summarized in **Table 2**.

Variable	**n (%)**
Cancer Type	
Prostate	55 (27.9%)
Breast	36 (18.3%)
Lung	17 (8.6%)
Colon	10 (5.1%)
Liver	5 (2.5%)
Other (Sub-categorized)	**74 (37.6%)**
— Urologic (Bladder & Kidney)	*9 (4.6%)*
— Pancreatic & Bile Duct	*6 (3.0%)*
— Hematologic (Lymphoma)	*5 (2.5%)*
— Head, Neck, & Oral	*5 (2.5%)*
— Gynecologic (Ovarian & Uterine)	*5 (2.5%)*
— Thyroid	*4 (2.0%)*
— Brain & Neurological	*3 (1.5%)*
— Multiple Myeloma	*3 (1.5%)*
— Melanoma (Skin & Ocular)	*3 (1.5%)*
— Sarcoma	*2 (1.0%)*
— Miscellaneous / Unspecified	*29 (14.7%)*
Disease Status at Baseline	
Actively spreading or progressing	73 (37.1%)
Not currently spreading	124 (62.9%)
Duration Since Diagnosis	
< 1 year	94 (47.7%)
1–2 years	18 (9.1%)
2–5 years	42 (21.3%)
5–10 years	20 (10.2%)
> 10 years	21 (10.7%)
Missing/Invalid Data	*2 (1.0%)*
Prior / Concurrent Treatments	
Surgery	83 (42.1%)

Chemotherapy	62 (31.5%)
Radiation therapy	57 (28.9%)
Immunotherapy	34 (17.3%)
Hormone therapy	29 (14.7%)
Targeted therapy	17 (8.6%)
Clinical trial participation	7 (3.6%)
Other therapies	76 (38.6%)

Table 2. Baseline Cancer Characteristics and Prior Treatments

At baseline, 73 of 197 participants (37.1%) reported active or progressive spread, while 124 (62.9%) reported that their cancer was stable or not currently spreading at the time of the survey. The cohort represented a broad spectrum of clinical timelines. The median duration since initial cancer diagnosis was 1.2 years. Nearly half of participants (47.7%, n = 94) were within their first year of diagnosis, while approximately one in five (20.8%, n = 41) had been managing their disease for more than five years. The most reported cancer types included prostate cancer in 55 participants (27.9%), breast cancer in 36 (18.3%), lung cancer in 17 (8.6%), colon cancer in 10 (5.1%), liver cancer in 5 (2.5%), and other sites in 74 (37.6%), which included skin, kidney, oropharyngeal, and miscellaneous malignancies. Most participants had already undergone conventional cancer therapies. The most common treatments reported were surgery in 83 participants (42.1%), chemotherapy in 62 (31.5%), radiation therapy in 57 (28.9%), immunotherapy in 34 (17.3%), hormone therapy in 29 (14.7%), targeted therapy in 17 (8.6%), and clinical trial participation in 7 (3.6%). Additional other treatments were reported by 76 participants (38.6%). These baseline characteristics—including cancer type distribution, disease status, and duration since diagnosis—are further visualized in **Figure 2**.

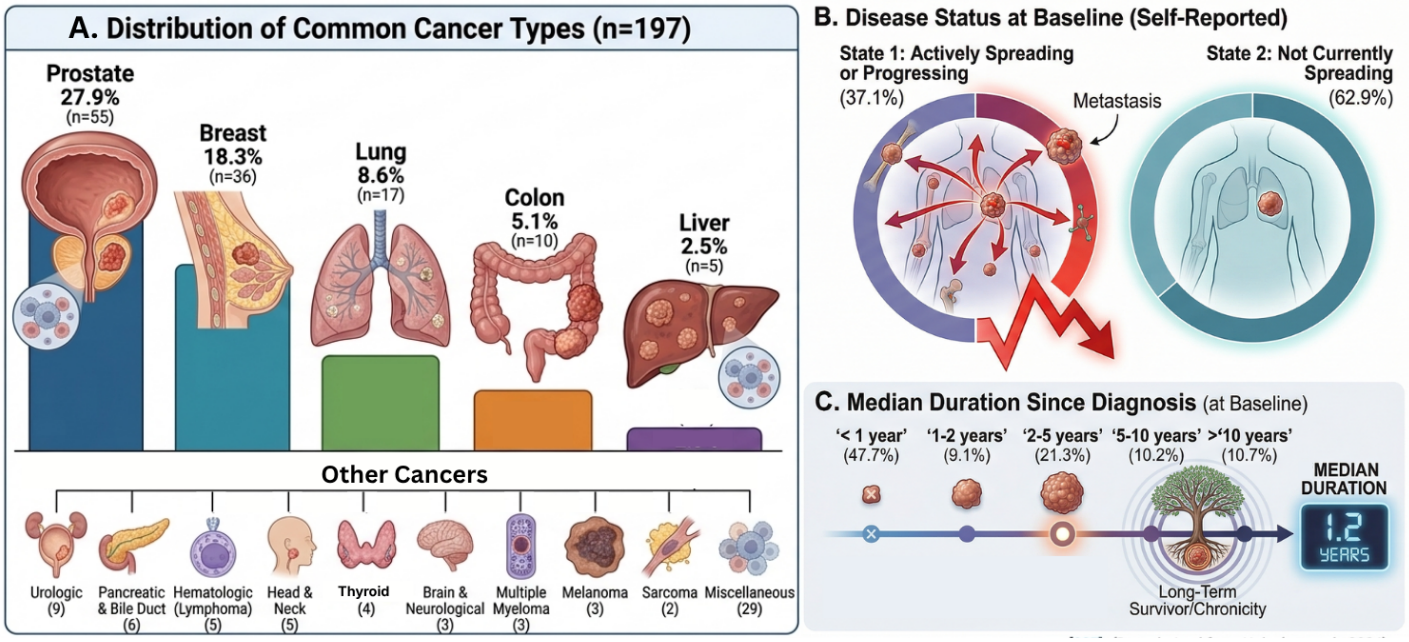

Figure 2. Baseline Cancer Characteristics (N = 197)

Ivermectin & Mebendazole Usage, Adherence, and Dosing

Of the 122 follow-up respondents, 106 (86.9%; 95% CI 79.8–91.8%) reported completing the full initial 90-capsule prescription. Among all follow-up participants (n = 122), the most common average daily dose was 1 capsule per day. The distribution of average daily dosing was as follows: 1 capsule per day in 54 participants (44.3%), 2 capsules per day in 34 (27.9%), 3 capsules per day in 14 (11.5%), and 4 capsules per day in 15 (12.3%). Other or variable dosing was reported by 5 participants (4.1%). At the time of follow-up, 81 participants (66.4%; 95% CI 57.6–74.2%) reported they were still taking Ivermectin & Mebendazole.

Safety and Tolerability

Side effects were reported by 31 of 122 follow-up participants (25.4%; 95% CI 18.5–33.8%). Among participants who experienced side effects, the most frequently reported adverse events were gastrointestinal symptoms (n = 12, 38.7%), fatigue or weakness (n = 10, 32.3%), dizziness (n = 7, 22.6%), skin reactions (n = 4, 12.9%), neurological symptoms (n = 4, 12.9%), headache (n = 3, 9.7%), loss of appetite (n = 3, 9.7%), and muscle or joint aches (n = 3, 9.7%). Among those who had side effects (n = 31), 15 (48.4%) reported no change to their regimen, 14 (45.2%) temporarily reduced or paused treatment, and 2 (6.5%) discontinued therapy.

Additional Treatments and Lifestyle Modifications

Participants frequently combined ivermectin and mebendazole with other interventions. At follow-up, the most common adjuncts were other cancer-related supplements (n=60, 49.2%), dietary changes (n=46, 37.7%), chemotherapy (n=34, 27.9%), radiation (n=26, 21.3%), and surgery (n=24, 19.7%). Intermittent or prolonged fasting, ketogenic or low-sugar diets, hyperbaric oxygen, red-light therapy, and specific supplements (e.g., vitamin D, turmeric, berberine, mushrooms) were commonly reported in free-text fields.

Dosing patterns, adherence rates, safety outcomes, and concurrent treatment use among 6-month follow-up respondents are visually summarized in **Figure 3.**

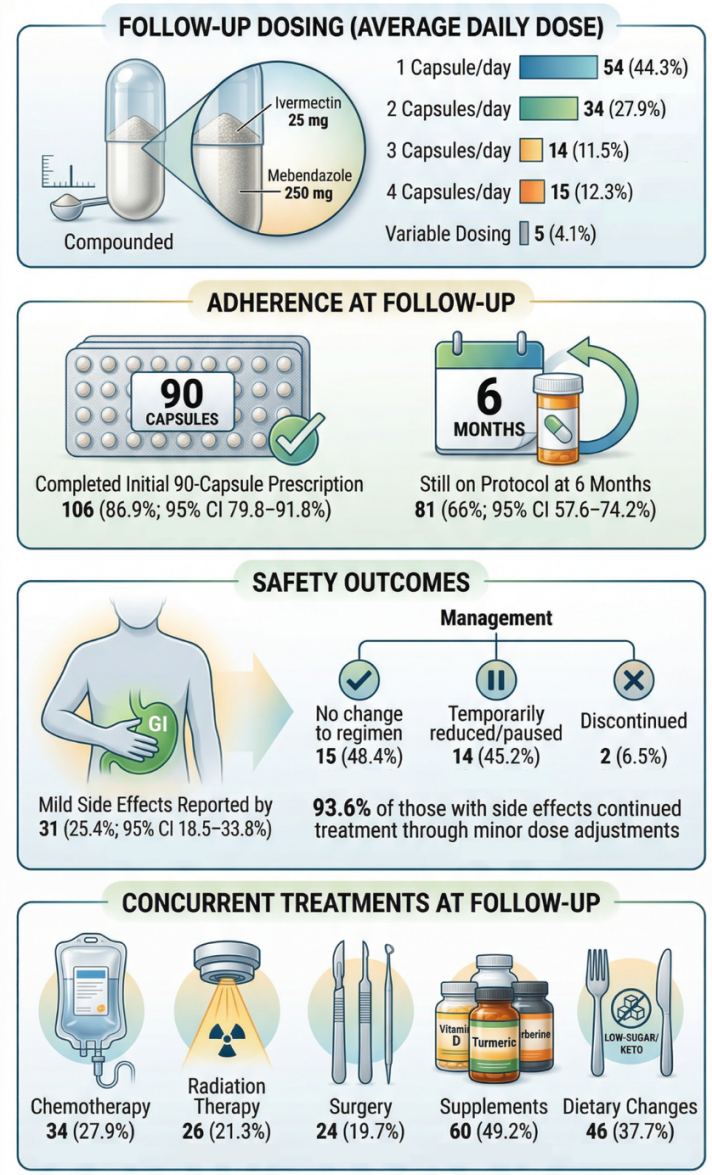

Figure 3. Follow-Up Dosing Distribution, Adherence, Safety Outcomes, and Concurrent Treatments at 6 Months in Patients Receiving Ivermectin and Mebendazole (n = 122).

Cancer Outcomes at 6-Month Follow-Up

Self-reported cancer outcomes at 6-month follow-up are summarized in **Table 3** and illustrated in **Figure 4**. Self-reported cancer status at follow-up was no current evidence of disease in 40 participants (32.8%; 95% CI 25.1–41.5%), regressed in 19 (15.6%; 95% CI 10.2–23.0%), stayed about the same (stable disease) in 44 (36.1%; 95% CI 28.1–44.9%), and spread or progressed in 19 (15.6%; 95% CI 10.2–23.0%). The Clinical Benefit Ratio (CBR) was 84.4% (103 of 122;

95% CI 77.0–89.8%). The combined fraction of strongest positive outcomes (no current evidence of disease or regression) was 48.4% (59 of 122; 95% CI 39.7–57.1%).

Outcome	n (%)	95% CI
No current evidence of disease (NED)	40 (32.8%)	25.1–41.5%
Regression	19 (15.6%)	10.2–23.0%
Stable disease	44 (36.1%)	28.1–44.9%
Progression	19 (15.6%)	10.2–23.0%
Clinical Benefit Ratio (CBR)	103 (84.4%)	77.0–89.8%
NED + Regression	59 (48.4%)	39.7–57.1%

Table 3. Self-Reported Cancer Outcomes at 6-Month Follow-Up

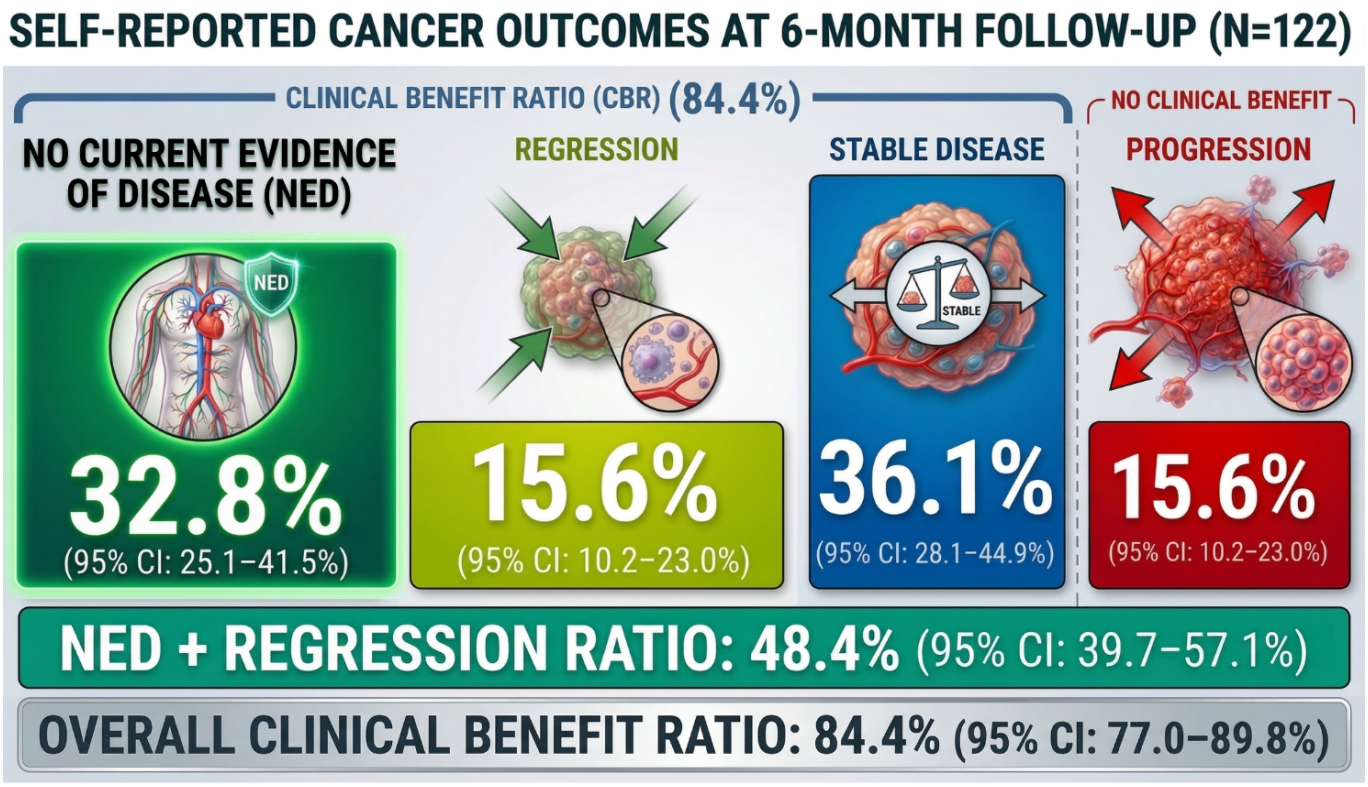

Figure 4. Self-Reported Cancer Outcomes and Clinical Benefit Ratio at 6-Month Follow-Up

Dose–Response Analysis of Outcomes and Safety

An exploratory dose–response analysis was conducted to evaluate the relationship between average daily capsule intake and clinical outcomes. Follow-up participants were stratified into groups based on reported average daily dosing (1–4 capsules per day). Dose-stratified cancer outcomes and safety profiles are presented in **Table 4.**

Dose (caps/day)	n	NED (%)	Regression (%)	Stable (%)	Progression (%)	CBR (%)	NED + Regression (%)	Side Effects (%)
1	54	37.0	11.1	33.3	18.5	81.5	48.1	**16.7**
2	34	29.4	20.6	41.2	8.8	91.2	50.0	**47.1**
3	14	28.6	21.4	35.7	14.3	85.7	50.0	**0.0**
4	15	26.7	20.0	40.0	13.3	86.7	46.7	**26.7**

Table 4. Dose–Response Analysis of Cancer Outcomes and Safety at 6-Month Follow-Up.

No significant dose-response association was observed for cancer outcomes ($p = 0.91$), while a significant association was observed for side effects ($p = 0.0014$). The proportion of participants achieving the strongest positive outcomes (no current evidence of disease or regression) remained consistent across dosing groups, ranging from 46.7% to 50.0%. Similarly, the Clinical Benefit Ratio (CBR) remained high across all dose levels, with the highest observed in the 2-capsule group (91.2%). These findings suggest that clinical benefit was maintained across a range of dosing strategies without a clear dose-response gradient for efficacy.

In contrast, a statistically significant association was observed between dosing level and the incidence of self-reported side effects ($\chi^2 = 15.60$, $p = 0.0014$). The highest risk of side effects was reported in the 2-capsule group (47.1%), while lower risks were observed at other dosing levels.

Representativeness of the Follow-up Cohort

To evaluate whether the 122 participants who completed the 6-month follow-up survey (61.9% response rate) were representative of the full baseline cohort (N = 197), we compared utilization of major standard-of-care cancer therapies as objective markers of disease severity and clinical profile (**Table 5**).

Characteristic	Baseline Cohort (N=197)	Follow-up Cohort (n=122)	p-value
Standard-of-Care Utilization			
Chemotherapy	31.5% (62)	27.9% (34)	0.58
Radiation Therapy	28.9% (57)	21.3% (26)	0.17

Table 5. Comparison of Baseline and Follow-up Cohort Characteristics. P-values calculated via Chi-square analysis comparing the prevalence of major standard-of-care therapies between the baseline and follow-up cohorts.

Prior or concurrent chemotherapy use was reported by 27.9% (34/122) of follow-up respondents versus 31.5% (62/197) in the full baseline cohort ($\chi^2 = 0.31$, $p = 0.58$). Radiation therapy utilization was 21.3% (26/122) versus 28.9% (57/197) at baseline ($\chi^2 = 1.90$, $p = 0.17$). Neither difference was statistically significant.

Discussion

This prospective observational cohort evaluation provides the first real-world, therapeutic signal for the combination of ivermectin and mebendazole in cancer patients with diverse malignancies. At 6-month follow-up, the Clinical Benefit Ratio reached 84.4% (95% CI: 77.0–89.8%), with 48.4% of participants reporting the strongest positive outcomes—no current evidence of disease (32.8%) or tumor regression (15.6%). Disease stability was maintained in an additional 36.1%, while progression was reported by only 15.6%. These favorable outcomes were consistent across dose levels ($p = 0.91$), accompanied by high adherence (86.9% completed the initial 90-capsule course; 66.4% remained on therapy) and a favorable safety profile (25.4% mild side effects, 93.6% continued after minor adjustments). The results align with the multi-target preclinical mechanisms of both agents [3-5, 7] and indicate that meaningful clinical benefit may be achieved in a heterogeneous real-world population that includes individuals receiving concurrent chemotherapy, radiation, surgery, and integrative approaches. These findings are visually summarized in **Figure 5 (Graphical Abstract)**.

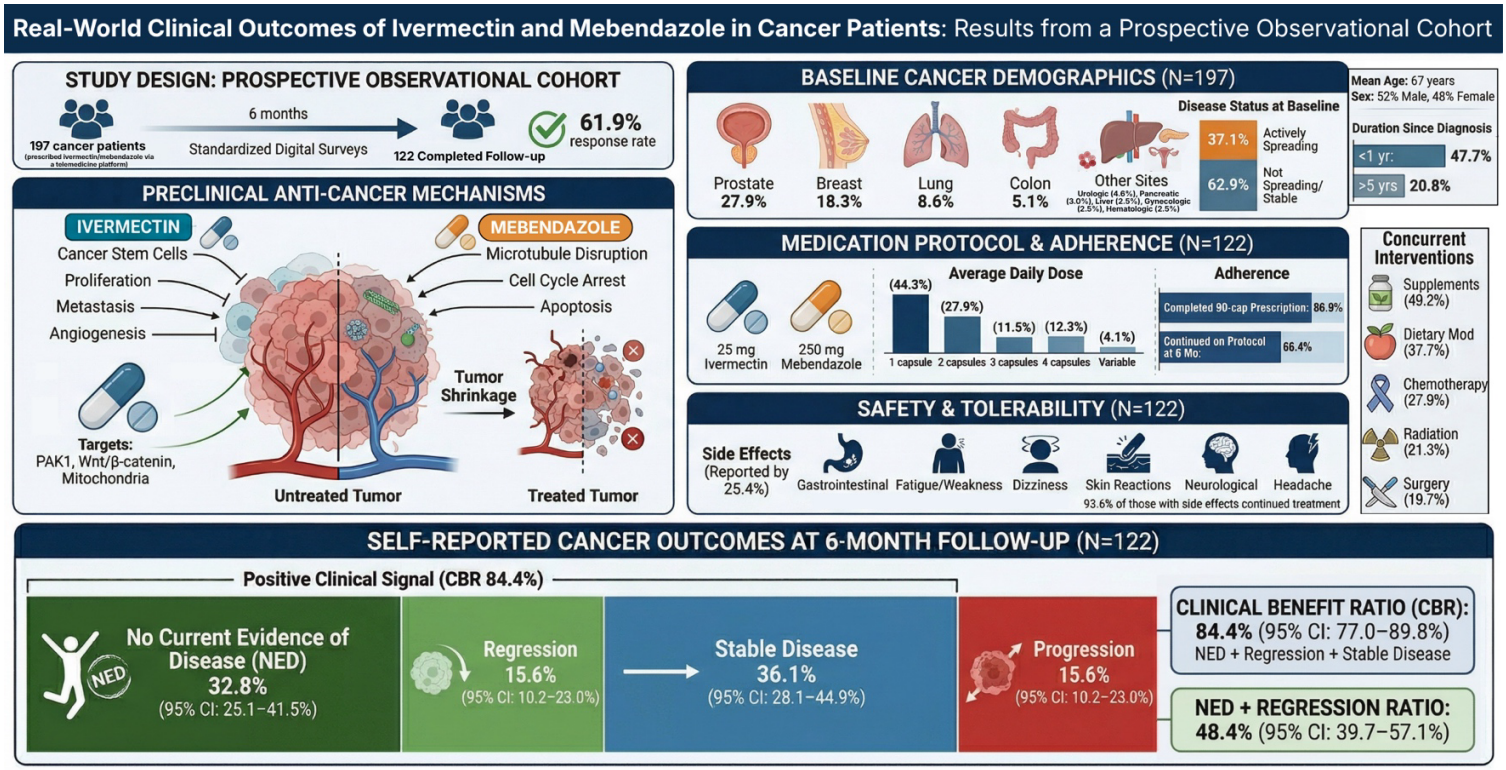

Figure 5 (Graphical Abstract). Integrated Overview of Study Design, Patient Characteristics, Treatment Protocol, and 6-Month Self-Reported Clinical Outcomes Following Ivermectin and Mebendazole Therapy in Cancer Patients

The exceptionally high, self-reported Clinical Benefit Ratio (CBR) of 84.4% observed at the 6-month follow-up in this diverse real-world cohort is striking and underscores the potential clinical importance of the ivermectin and mebendazole combination. This level of disease control (no evidence of disease, regression, or stability) substantially exceeds typical clinical

benefit and disease control rates reported with standard chemotherapy in advanced or pretreated solid tumors. In metastatic castration-resistant prostate cancer, the most represented malignancy in our cohort, metronomic chemotherapy regimens have demonstrated mean clinical benefit fractions of approximately 56.8% [9]. Similarly, in metastatic breast cancer, conventional chemotherapy typically achieves clinical benefit fraction of 50–60% in the first-line setting, with notably lower proportions in subsequent lines or heavily pretreated patients [10]. Disease control percents with later-line chemotherapy in non-small cell lung cancer and colorectal cancer are frequently below 60%.

Although surgery and radiation therapy provide essential local control and can be curative in early-stage disease, they offer limited systemic benefit in metastatic settings and are not directly quantified using CBR metrics. Achieving a high CBR with mild side effects in 25.4% of participants and strong adherence demonstrates the value of well-tolerated repurposed agents, especially in an older population (mean age 67 years) that frequently combines integrative approaches with conventional care. These hypothesis-generating findings support the urgent need for randomized controlled trials to establish the role of this combination relative to or in conjunction with established therapies.

Our findings build upon a growing body of promising clinical evidence suggesting meaningful anticancer potential for repurposed antiparasitic agents in humans. An observational study in Ecuador reported notable self-reported clinical benefits and quality-of-life improvements among cancer patients using ivermectin [11]. More compellingly, a small randomized controlled trial showed that the addition of mebendazole to bevacizumab plus FOLFOX4 in metastatic colorectal cancer dramatically improved objective response rate (65% versus 10%) and nearly tripled median progression-free survival (9.25 versus 3 months) [12]. A 2025 case series reported complete or near-complete remission in three patients with stage IV cancers (breast, prostate, and melanoma) who self-administered fenbendazole, achieving dramatic tumor regression and long-lasting remission sustained for up to three years without chemotherapy [13]. Early-phase trials combining ivermectin with immunotherapy have further demonstrated good tolerability and preliminary signals of clinical activity in heavily pretreated patients [14]. The present prospective observational cohort therefore represents the largest and most structured real-world evaluation of the specific ivermectin-mebendazole combination published to date.

The high clinical benefit observed in our cohort is firmly grounded in extensive preclinical evidence demonstrating highly complementary multi-target anticancer mechanisms of ivermectin and mebendazole. Ivermectin exerts at least 14 distinct anti-tumor effects, including potent inhibition of PAK1 kinase, disruption of Wnt/β-catenin, PI3K/Akt/mTOR, and STAT3 signaling, induction of mitochondrial dysfunction, and selective eradication of cancer stem cells [3,5,15-18]. Mebendazole primarily destabilizes microtubules leading to G2/M cell cycle arrest, apoptosis, inhibition of angiogenesis, and disruption of glucose uptake [7,19-21]. When used together, these agents target non-overlapping pathways, resulting in synergistic tumor regression, cancer stem cell depletion, and reversal of multidrug resistance in multiple in vitro and in vivo models [22]. The pharmacokinetics and biodistribution of both ivermectin and mebendazole document excellent tissue penetration [8] This mechanistic complementarity provides a clear biological rationale for the high Clinical Benefit Ratio and frequent tumor regression or no evidence of disease reported with the combination in our real-world setting.

The benefits of using repurposed medication are two-fold: a previous safety record and low cost. The cost analysis of standard chemotherapies is important to consider. Overall, it is estimated that annual costs of standard chemotherapies average $111,000 per year [23]. In contrast, the estimated annual cost of a daily ivermectin–mebendazole regimen is approximately a few thousand U.S. dollars (e.g., ~$2,000–$3,000), depending on formulation and dispensing source.

Strengths of the study include its prospective, longitudinal design with standardized surveys at baseline and 6 months, a solid response fraction of 61.9%, and a representative follow-up cohort. Utilization of major standard-of-care therapies (chemotherapy 27.9% vs. 31.5%; radiation 21.3% vs. 28.9%) was statistically comparable between the follow-up and full baseline groups (both $p > 0.05$), indicating that survey responders were not disproportionately those with less aggressive disease or better prognoses. The real-world telemedicine setting, detailed capture of concurrent supplements and lifestyle modifications, and dose-stratified analyses further enhance the generalizability and practical relevance of the findings.

Limitations are inherent to the observational, self-reported nature of the data. Outcomes were not clinically adjudicated or radiographically confirmed, no control group was available, and confounding from concurrent conventional therapies, supplements, and lifestyle changes cannot be excluded. Given these threats to validity, therapeutic benefit cannot be inferred. These results should therefore be regarded as hypothesis-generating.

Conclusion

In this prospective real-world cohort, the combination of ivermectin and mebendazole was associated with high proportions of self-reported clinical benefit, with nearly half of participants declaring tumor regression or no current evidence of disease across a heterogeneous population of cancer types. These findings, observed alongside favorable tolerability and strong adherence, support the biological plausibility suggested by preclinical data, indicating this combination may offer therapeutic potential as an adjunctive or repurposed strategy in oncology. However, given the observational design, reliance on self-reported outcomes, and potential for confounding, these results should be interpreted as hypothesis-generating. Rigorous randomized, double blind, placebo-controlled trials are urgently needed to validate safety and efficacy, clarify optimal dosing strategies, and determine the role of this combination across specific cancer types.

Institutional Review Board (IRB) Statement: This project was conducted as a retrospective analysis of a prospective clinical program evaluation. Consistent with established frameworks for quality improvement and internal assessment of clinical services, the project utilized voluntary, patient-reported data. As such, it did not meet the definition of human subjects research and did not require Institutional Review Board (IRB) review.

Conflict of Interest Statement: All authors are affiliated with and/or receive salary support from The Wellness Company (TWC), which operates the telemedicine platform through which the ivermectin–mebendazole combination evaluated in this analysis was prescribed and

dispensed. TWC also offers compounded formulations of ivermectin and mebendazole as part of its clinical services.

Data Availability Statement: Data on file with The Wellness Company. Aggregated summary data supporting the findings of this project are included in this article.

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