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Research Article

Efficacy and Safety of Hetrombopag for Thrombocytopenia in Patients with Advanced Solid Tumors: A Retrospective Study

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Objective. To analyze and evaluate the clinical value of hetrombopag in cancer therapy-induced thrombocytopenia (CTIT) caused by antitumor therapy for malignant tumors and to provide scientific evidence support for clinical application in the real-world setting. *Methods*. The clinical data of CTIT patients with advanced solid tumors who received hetrombopag were analyzed retrospectively. The proportion of patients with different characteristics who recovered platelet count to $\geq 75 \times 109$/L at day 14 and the effective rate of platelet elevation was compared by the χ^2 test or Fisher exact probability method. $P < 0.05$ was considered statistically significant. *Results*. A total of 60 CTIT patients who received hetrombopag at our site from July 2021 to October 2022 were finally included in this study. The proportion of patients who achieved therapeutic effect within (7 ± 2) days after treatment was 26.7% (16/60), among which 20.0% (12/60) patients had platelet count recovered to $\geq 100 \times 109$/L, and 25.0% (15/60) patients had platelet count increase from baseline $\geq 50 \times 109$/L. Within (14 ± 2) days of treatment with hetrombopag, 66.7% (40/60) of patients achieved treatment response, of whom 56.7% (34/60) had platelet counts $\geq 100 \times 109$/L and 53.3% (32/60) had platelet counts $\geq 50 \times 109$/L increase from baseline. In addition, no treatment-related adverse events occurred during the treatment period. *Conclusion*. This retrospective study provides preliminary evidence that hetrombopag increases platelets in CTIT patients receiving antitumor therapy for advanced solid tumors.

1. Introduction

Cancer therapy-induced thrombocytopenia (CTIT) refers to decreased platelet production and/or increased destruction resulting from antineoplastic therapy and manifests clinically as platelet counts less than 100×109/L [1] in peripheral blood. With the development of modern medicine, antitumor treatments such as chemotherapy, radiotherapy, targeted drugs, and immune checkpoint inhibitors [2–4] are gradually used in clinical practice. However, both traditional treatments and new treatments can usually lead to thrombocytopenia. It can even cause serious complications such as intracranial hemorrhage [5] and internal organ bleeding, which can be life-threatening when platelet counts $<20 \times 109$/L. However, at present, the thrombopoietin receptor agonist (TPO-RA) drugs marketed in China, such as recombinant human thrombopoietin injection, eltrombopag, avatrombopag, and romiplostim, have not been obtained for the indications of CTIT. Therefore, this is a clinical need to be taken seriously.

In this context, we have discovered a selective non-peptide small-molecule TPO-RA, hetrombopag [6]. Hetrombopag regulates the proliferation and differentiation of human TPOR-expressing cells (32D-MPL and human hematopoietic stem cells) by specifically stimulating STAT, PI3K, ERK, and other signaling pathways. Hetrombopag also upregulated proteins associated with the G1 phase of cells, such as cyclin D1 and CDK4/6, to normalize the cell cycle [7]. Compared with other TPO-RAs, hetrombopag is further upgraded in structure (Figure 1), replacing xylene with a benzo-saturated carbon ring to enhance lipophilicity and improve efficacy. Furan replaces one of the benzene rings in the biphenyl structure, breaking the biphenyl structure and reducing hepatotoxicity. Substitution of benzoic acid with heterocyclic carboxylic acid resulted in conformational changes, enhanced acidity, and substantially

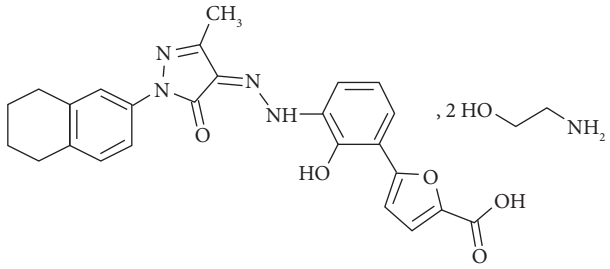

Figure 1: Molecular structure of hetrombopag.

enhanced activity. And other TPO-RAs, such as eltrombopag [8], have further renal impairment in patients with mild-moderate-severe renal impairment, and less than 10% of hetrombopag is excreted in the urine, with little effect on renal function. Compared with protein peptide macromolecule recombinant human thrombopoietin (rhTPO)-related drugs, as an oral preparation, hetrombopag can be taken outside the hospital for a long time, avoiding increasing the length of hospital stay and cost, continuous injection, poor patient compliance, and increasing bed turnover pressure. Traditional rhTPO [9] preparations can induce the hidden dangers of producing thrombopoietin (TPO) antibodies and the risk of thrombus caused by platelet activation, which also makes it difficult for clinicians and patients to be at ease.

In the past, CTIT was mainly treated by TPO and IL-11. Although it had a good platelet boost effect, these drugs only worked in a short term and still had a sharp decrease in platelets after withdrawal, and the administration method was subcutaneous injection, which affected the treatment compliance of patients [9]. At present, hetrombopag has demonstrated favorable efficacy and safety in phase III studies for ITP [10] and phase II studies for SAA [11]; however, the use of hetrombopag in the treatment of CTIT is rarely reported in solid tumors. This study retrospectively analyzed the effectiveness and safety of hetrombopag in the treatment of CTIT, filling the research gaps in this field and providing data for clinical application.

2. Methods

2.1. Study Subjects. From July 2021 to October 2022, a total of 60 CTIT patients with advanced solid tumors who received hetrombopag at the Affiliated Hospital of Xuzhou Medical University were retrospectively analyzed. This research plan has been reviewed and approved by the Ethics Committee of Xuzhou Medical University Affiliated Hospital (XYFY2023-KL027).

The inclusion criteria were as follows: (1) the diagnosis of advanced solid tumors was confirmed pathologically or by imaging; (2) aged ≥18 years; (3) patients with thrombocytopenia caused by antitumor therapy (including chemotherapy, radiotherapy, targeted therapy, and immunotherapy), ≥ grade 2 thrombocytopenia (platelet count 50×109/L~75×109/L, 25×109/L~50×109/L, and $<25\times109$/L); (4) complete platelet counts were recorded after treatment with hetrombopag; and (5) Eastern Cooperative Oncology Group Performance Status (ECOG PS) score of 0-1.

The exclusion criteria were as follows: (1) patients with other hematopoietic diseases except thrombocytopenia caused by antitumor treatment drugs, including but not limited to leukemia, primary immune thrombocytopenia, myeloproliferative disorders, multiple myeloma, and myelodysplastic syndrome; medically known thrombocytopenia caused by antitumor treatment, including but not limited to chronic liver disease, hypersplenism, infection, and bleeding; (2) received platelet transfusion during hetrombopag treatment; and (3) incomplete clinical data.

2.2. Hetrombopag Dosing Method. Patients were instructed to orally take hetrombopag (2.5 mg 14 tablets/box) according to their individual needs. Taking into account that the time to peak response to TPO-RA treatment was approximately 12 to 14 days, all patients took hetrombopag orally for at least 14 consecutive days or reached discontinuation indication (platelet count $\geq100\times109$/L or increase from predose $\geq50\times109$/L). Platelet counts were monitored regularly during treatment and discontinued once the platelet count recovered.

Patients are advised to take hetrombopag on an empty stomach and wait at least 2 hours before consuming any food. The following products should be taken at least 2 hours after taking the medication, including dairy products (such as milk, yogurt, cheese, and ice cream) or mineral supplements containing polyvalent cations (such as aluminum, calcium, magnesium, iron, zinc, and selenium).

2.3. Data Collection. Patients' demographic and clinical medical records were collected using electronic medical records, including sex, age, date of birth, admission time, tumor history, ECOG PS score, Karnofsky (KPS) score, specific antitumor treatment regimen, CTIT therapy before hetrombopag application, platelet (PLT) count before hetrombopag application, PLT test date before and after hetrombopag application, time to hetrombopag initiation, hetrombopag treatment dose, presence or absence of hetrombopag dose adjustment, and any adverse events experienced during oral hetrombopag administration.

2.4. Assessment. Primary outcome: (1) platelet increasing effectiveness rate of hetrombopag: percentage of patients with platelet count $\geq100\times109$/L or platelet count increase from baseline $\geq50\times109$/L within (7 ± 2) days and (14 ± 2) days of hetrombopag treatment.

Secondary outcomes: (1) the proportion of patients whose platelet count recovered to $\geq75\times109$/L after (7 ± 2) and (14 ± 2) days of hetrombopag treatment; (2) the proportion of patients whose platelet count recovered to $\geq75\times109$/L after 14 days, stratified by patients with different characteristics; (3) the percentage of patients whose platelet count $\geq100\times109$/L or increased from baseline platelet count $\geq50\times109$/L after 14 days in patients with different characteristics; and (4) the mean increase in platelet count.

Safety assessments: the incidence of adverse reactions to hetrombopag treatment was assessed according to the National Institutes of Health Common Terminology Criteria for Adverse Events (CTCAE) [12] version 5.0.

2.5. Statistical Methods. Statistical software SPSS 22.0 was used to analyze and process the data. Enumeration data were presented as numbers and percentages, and a retrospective was self-matched before and after the design was performed. The proportion of patients with platelet count recovered to $\geq 75 \times 109$/L in 14 days and the effective rate of platelet elevation in patients with different characteristics were compared using the χ^2 test or Fisher exact test. $P < 0.05$ was considered statistically significant.

3. Results

3.1. General Information. In this study, a total of 73 patients were initially identified. However, 3 patients with PLT abnormalities were removed after screening, with invalid information, and 10 patients had grade 1 thrombocytopenia. Sixty CTIT patients who met the case selection criteria were finally included (Table 1).

3.2. Platelet Increasing Effectiveness Rate of Hetrombopag. Within (7 ± 2) days of treatment with hetrombopag, the proportion of patients achieving treatment response was 26.7% (16/60), with 20.0% (12/60) of patients having a platelet count $\geq 100 \times 109$/L and 25.0% (15/60) having a platelet count increase from baseline $\geq 50 \times 109$/L. Within (14 ± 2) days of treatment with hetrombopag, 66.7% (40/60) of patients were calculated to be responders, 56.7% (34/60) had a platelet count $\geq 100 \times 109$/L, and 53.3% (32/60) had an increase from baseline in platelet count (Figure 2).

Within (7 ± 2) days and (14 ± 2) days of hetrombopag treatment, the proportion of patients' PLT returned to $\geq 75 \times 109$/L, the mean increase in platelet count.

(1) Within (7 ± 2) days of hetrombopag treatment, PLT recovered to $\geq 75 \times 109$/L in 63.3% (38/60) of patients; after (14 ± 2) days of treatment, PLT recovered to $\geq 75 \times 109$/L in 81.7% (49/60) of patients (Figure 3). Especially, after (14 ± 2) days of treatment, PLT recovered to $\geq 75 \times 109$/L in 66.7% (4/6) of patients with grade 4 thrombocytopenia (PLT count $< 25 \times 109$/L).

(2) During hetrombopag treatment, there was no statistically significant difference in the effective rate of platelet elevation among patients of different ages, sexes, baseline thrombocytopenia severity, and hetrombopag dose groups ($P > 0.05$) (Table 2).

(3) During treatment with hetrombopag, there was no statistically significant difference in PLT recovery to $> 75 \times 109$/L between patients of different ages, sexes, and hetrombopag dose groups ($P > 0.05$); a higher proportion of patients with baseline grade 2 thrombocytopenia had PLT recovery to $> 75 \times 109$/L ($P < 0.05$) (Table 3).

(4) Within (7 ± 2) days of treatment with hetrombopag, the mean increase in platelet count is $40.10 \pm 69.95 \times 109$/L. Within (14 ± 2) days of treatment with hetrombopag, the mean increase in platelet count is $70.37 \pm 69.54 \times 109$/L.

3.3. Safety Profile. No treatment-related adverse reactions (including hepatic impairment or thrombotic events) were noted during treatment with hetrombopag.

4. Discussion

With the rapid development of medical oncology, various single-agent and combination regimens have been gradually included in different cancer guidelines. However, traditional and emerging treatments usually have a commonality, that is, thrombocytopenia [13] caused by cancer therapy. Approximately 12.8% of patients with solid tumors [14] had the potential for CTIT. Studies have shown that the occurrence of CTIT often leads to an increased risk of bleeding [15], forced reduction in the dose intensity of antineoplastic therapeutics, delay in treatment, and even treatment discontinuation, which seriously affects the antineoplastic efficacy and patient life cycle [16]. Therefore, active intervention is required, and the main clinical interventions include platelet transfusion and administration of thrombogenic growth factor 2 categories, of which thrombogenic growth factor includes recombinant human interleukin-11 (rhIL-11) [17], rhTPO and TPO-RA. However, among traditional therapeutic agents, rhIL-11 drugs increase the incidence of cardiovascular events [18] as well as the possibility of systemic allergic reactions [19]. Patients with subcutaneous injections have poor compliance and should be used with caution in patients with renal insufficiency due to their main renal excretion. rhTPO drugs, which tend to cross-react with endogenous TPO to produce antidrug antibodies, causing persistent thrombocytopenia in patients, combined with long-term subcutaneous injection leading to a lack of compliance in patients.

The National Comprehensive Cancer Network (NCCN) guidelines recommend CTIT patients to enter the TPO-RA clinical studies [20]. The Chinese expert diagnosis and treatment consensus also emphasizes the necessity of using TPO-RA for CTIT treatment. In order to obtain clinical confirmation, Jiangsu Hengrui Pharmaceuticals Co., Ltd returned 82 survey questionnaires, which came from 10 cities in Jiangsu Province (20 Lianyungang, 18 Nantong, 17 Suzhou, 11 Nanjing, and the number of questionnaires in 4 cities accounted for 80% of the overall survey number), 46 hospitals, and 7 different departments (60% from medical oncology, followed by radiotherapy, breast surgery, hematology, gastrointestinal surgery, and gynecology). The results showed that for CTIT patients who did not respond well to IL-11 and rhTPO, 70% of clinicians would choose downgrading chemotherapy, 60% chose delayed chemotherapy time, 50% chose TPO-RA, and 44% replaced chemotherapy regimens. In order to meet this selection demand, it is particularly important to find new TPO-RA preparations.

Table 1: Analysis of characteristics of 60 patients with thrombocytopenia caused by antitumor therapy for malignant tumor (n, %).

General characteristics	Total ($n = 60$)
Age/years (n, %)	
>60 years	36 (60.0%)
≤60 years	24 (40.0%)
Gender (n, %)	
Male	34 (56.7%)
Female	26 (43.3%)
Primary tumor (n, %)	
Gastric cancer	9 (15.0%)
Gynecologic neoplasms (ovary/cervix)	9 (15.0%)
Pancreatic cancer	8 (13.3%)
Liver cancer	7 (11.7%)
Lung cancer	7 (11.7%)
Colorectal cancer	6 (10.0%)
Esophageal cancer	4 (6.7%)
Breast cancer	4 (6.7%)
Others	6 (10.0%)
ECOG score (n, %)	
0 point	49 (81.7%)
1 point	11 (18.3%)
Antitumor treatment regimen (n, %)	
Chemotherapy only	13 (21.7%)
Targeted/targeted + chemotherapy only	12 (20.0%)
Immune/immune + chemotherapy only	17 (28.3%)
Targeting + immunization/targeting + immunization + chemotherapy	18 (30.0%)
Platelet count distribution prior to hetrombopag use (n, %)	
50×10^9/L–75×10^9/L (grade 2)	37 (61.7%)
25×10^9/L–50×10^9/L (grade 3)	17 (28.3%)
$<25 \times 10^9$/L (grade 4)	6 (10.0%)
Prior platelet increasing therapy (n, %)	
rhTPO	36 (60.0%)
TPO-RA (avatrapopag, eltrombopag)	4 (6.7%)
None	20 (33.3%)
Hetrombopag therapeutic dose (n, %)	
2.5 mg	11 (18.3%)
5 mg	49 (81.7%)
KPS score (n, %)	
90 point	60 (100.0%)

ECOG, Eastern Cooperative Oncology Group; rhTPO, recombinant human thrombopoietin; TPO-RA; thrombopoietin receptor agonist; KPS; Karnofsky.

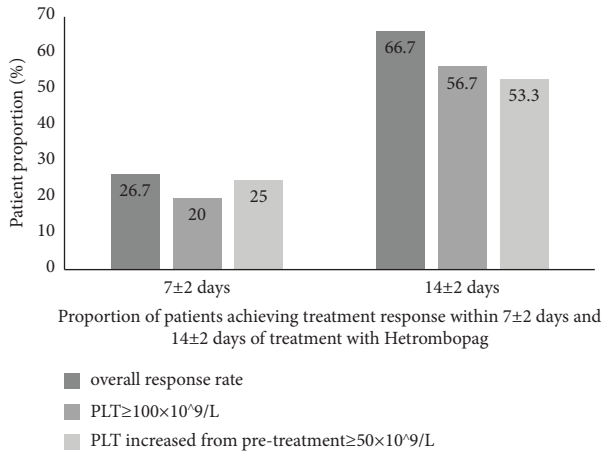

Figure 2: Platelet increasing the efficacy of hetrombopag for (7 ± 2) days and (14 ± 2) days.

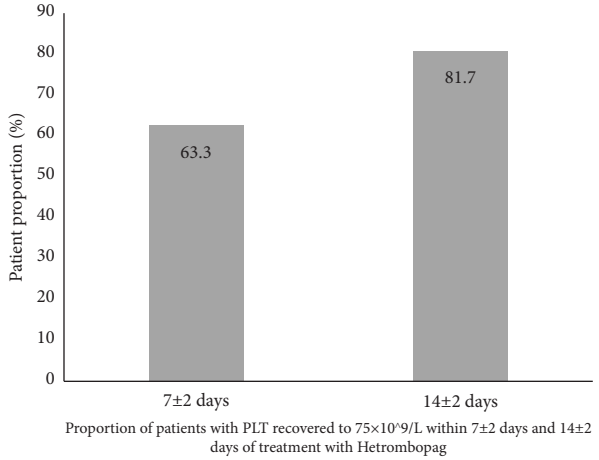

Figure 3: Proportion of patients with PLT recovery to $\geq 75 \times 109$/L within (7 ± 2) days and (14 ± 2) days of hetrombopag treatment.

Table 2: 14-day platelet increasing response rate in patients with different characteristics (n, %).

Variable	Number of patients (n)	Treatment response was achieved by (14 ± 2) days of hetrombopag treatment		χ^2	P value
		Yes n (%)	No n (%)		
Age					
>60 years	36	22 (61.1%)	14 (38.9%)	1.250	0.264
≤60 years	24	18 (75.0%)	6 (25.0%)		
Gender					
Male	34	20 (58.8%)	14 (41.2%)	2.172	0.141
Female	26	20 (76.9%)	6 (23.1%)		
Baseline platelet count					
50×10^9/L~75×10^9/L (grade 2 thrombocytopenia)	37	27 (73.0%)	10 (27.0%)	2.103	0.349
25×10^9/L~50×10^9/L (grade 3 thrombocytopenia)	17	9 (52.9%)	8 (47.1%)		
$<25\times10^9$/L (grade 4 thrombocytopenia)	6	4 (66.7%)	2 (33.3%)		
Antitumor treatment regimen					
Chemotherapy only	13	9 (69.2%)	4 (30.8%)	3.906	0.272
Targeted/targeted + chemotherapy only	12	10 (83.3%)	2 (16.7%)		
Immune/immune + chemotherapy only	17	12 (70.6%)	5 (29.4%)		
Targeting + immunization/targeting + immunization + chemotherapy	18	9 (50.0%)	9 (50.0%)		
Prior platelet increasing therapy					
rhTPO	36	24 (66.7%)	12 (33.3%)	0.150	0.928
TPO-RA (avatrapopag, eltrombopag)	4	3 (75.0%)	1 (25.0%)		
None	20	13 (65.0%)	7 (35.0%)		
Hetrombopag therapeutic dose					
2.5 mg	11	8 (72.7%)	3 (27.3%)	0.223	0.637
5 mg	49	32 (65.3%)	17 (34.7%)		

rhTPO, recombinant human thrombopoietin; TPO-RA; thrombopoietin receptor agonist.

Table 3: Proportion of patients recovered to ≥75×109/L in 14 days by characteristics (n, %).

Variable	Number of patients (n)	PLT recovered to ≥75×109/L on (14 ± 2) days of hetrombopag treatment		χ^2	P value
		Yes n (%)	No n (%)		
Age					
>60 years	36	29 (80.6%)	7 (19.4%)	0.074	0.785
≤60 years	24	20 (83.3%)	4 (16.7%)		
Gender					
Male	34	26 (76.5%)	8 (23.5%)	1.415	0.234
Female	26	23 (88.5%)	3 (11.5%)		
Baseline platelet count					
50×10^9/L~75×10^9/L (grade 2 thrombocytopenia)	37	35 (94.6%)	2 (5.4%)	14.886	0.001
25×10^9/L~50×10^9/L (grade 3 thrombocytopenia)	17	12 (70.6%)	5 (29.4%)		
$<25\times10^9$/L (grade 4 thrombocytopenia)	6	2 (33.3%)	4 (66.7%)		
Antitumor treatment regimen					
Chemotherapy only	13	13 (100.0%)	0 (0.0%)	4.516	0.211
Targeted/targeted + chemotherapy only	12	10 (83.3%)	2 (16.7%)		
Immune/immune + chemotherapy only	17	12 (70.6%)	5 (29.4%)		
Targeting + immunization/targeting + immunization + chemotherapy	18	14 (77.8%)	4 (22.2%)		
Prior platelet increasing therapy					
rhTPO	36	28 (77.8%)	8 (22.2%)	1.410	0.494
TPO-RA (avatrapopag, eltrombopag)	4	3 (75.0%)	1 (25.0%)		
None	20	18 (90.0%)	2 (10.0%)		
Hetrombopag therapeutic dose					
2.5 mg	11	10 (90.9%)	1 (9.1%)	0.786	0.381
5 mg	49	39 (79.6%)	10 (20.4%)		

rhTPO, recombinant human thrombopoietin; TPO-RA; thrombopoietin receptor agonist.

Hetrombopag, the new generation of TPO-RA, is a small-molecule [21], oral, nonpeptide thrombopoietin receptor agonist and is currently the only brand-new originator TPO-RA approved for immunologic thrombocytopenic purpura (ITP) and aplastic anemia (SAA) in China. Compared with eltrombopag, hetrombopag has a stronger signaling pathway activation effect, an earlier onset of action, and a longer duration of action and naturally leads to better clinical efficacy at the same dose. Studies have shown that in the treatment of ITP in the same disease, the initial dose of hetrombopag 2.5 mg brings an efficacy of greater than or equal to eltrombopag 25 mg [22] and avatrombopag 20 mg [23], and the lower dose of hetrombopag can bring the same or even better efficacy and also better control the adverse drug reactions. In terms of metabolic pathways, 89.05% of hetrombopag was excreted in feces and 8.62% in urine, compared with 59% of eltrombopag excreted in feces and 31% in urine, showing a great advantage for patients with renal function. A phase 3 registration study [10] in ITP also demonstrated that patients treated with longer 24-week [10] periods of hetrombopag had a significantly lower incidence of liver and kidney function-related adverse reactions than patients treated with shorter 14-week periods of eltrombopag.

The results of this study further showed that overall, with the extension of treatment time, the higher the proportion of patients with PLT recovered to $\geq 100 \times 109/L$ or PLT increased by $\geq 50 \times 109/L$ compared with the pretreatment count, and the higher the proportion of patients with PLT recovered to $\geq 75 \times 109/L$ after taking hetrombopag (14 ± 2) days. Investigating which factors may contribute to the higher platelet recovery at 14 ± 2 days, we found that no variables were associated with the response rate to platelet elevations, whereas patients with baseline grade 2 thrombocytopenia were more likely to recover PLT ($50 \times 109/L$ to $75 \times 109/L$) to $\geq 75 \times 109/L$. From this result, we can boldly infer that when hetrombopag is applied to patients who develop CTIT, better efficacy will be obtained when the level of thrombocytopenia is maintained at grade 2. Relevant studies have also confirmed our results that mucocutaneous bleeding [24] can occur when platelets are $< 50 \times 109/L$, and therefore, most surgical procedures and invasive endoscopies cannot be used. For this reason, the Chinese Society of Clinical Oncology (CSCO) formulated the secondary prevention of CTIT in 2022, and if platelets were $< 50 \times 109/L$ in the previous chemotherapy cycle, they entered the secondary prevention treatment in the next chemotherapy cycle. If PLT ($50 \times 109/L \sim 75 \times 109/L$) is in the previous chemotherapy cycle, evaluate whether it contains bleeding risk factors. When entering the next chemotherapy cycle, the platelet count should be closely monitored. TPO-RA drugs can be used to shorten the duration of thrombocytopenia, reduce platelet transfusion, and ensure the successful completion of chemotherapy. In addition, in the phase 1 study of hetrombopag, we found that the plasma bioavailability of hetrombopag may be more affected by food [25] than eltrombopag. Eltrombopag is only affected by high-calcium, acid-suppressive agents, and high-calorie, high-fat, and low-calcium food does not affect its plasma exposure. A trial of 12 healthy Chinese volunteers showed that the rate of drug absorption in the first site was almost halved when hetrombopag was administered with a high-fat and high-calorie meal. In response to this, patients were instructed to take oral doses on an empty stomach and to take meals 2 hours after oral administration [26], and hetrombopag tended to achieve better efficacy. It has been pointed out in the literature that eltrombopag combined with recombinant human thrombopoietin can quickly bring platelets to normal levels and give full play to the synergistic effect because there is no competitive binding site [27, 28]. According to this feature, the combination effect of hetrombopag and rhTPO drugs was reflected in the study of Xie, and the combination of hetrombopag and rhTPO drugs had a stronger anti-apoptotic effect on 32D-MPL cells than either drug alone and could significantly enhance the stimulation of TPOR signal transduction. Therefore, it is expected to further treat and prevent the occurrence of CTIT events through multidrug combinations in the future.

In the context of the global pandemic of novel coronavirus infection [29, 30], there is often a shortage of blood products, including platelets. This also makes it difficult to transfuse platelets alone, and the NCCN guidelines recommend that TPO-RA drugs can be applied during the pandemic. Therefore, by expanding the use of platelet-stimulating growth factors, cancer patients can be effectively exposed to high-risk environments, and effective and timely treatment will be given to patients with myelosuppression and high-risk chemotherapy.

In this study, hetrombopag showed good clinical value, and no significant adverse reactions were observed. However, our study also has some limitations. First of all, our study was a single-center retrospective study, and the lack of a control group may lead to selection and recall bias. Second, it is not possible to determine whether the findings are applicable to generalization in other populations. In addition, the screened patients in this study received different antitumor regimens, and it may not be possible to determine the effect of hetrombopag in the treatment of CTIT after the application of specific regimens. Finally, due to the small sample size in this study, it may not fully reflect the real situation of the overall population; the exact value of hetrombopag remains to be further confirmed. Large sample size and multicenter, randomized controlled trials are still needed in the future to verify our conclusions.

5. Conclusion

In summary, the results of this study showed that hetrombopag was effective in the treatment of CTIT with a low incidence of adverse events, and hetrombopag can be recommended for the clinical treatment of CTIT.

Data Availability

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethical Approval

This study was approved by the Ethics Committee of the Affiliated Hospital of Xuzhou Medical University (XYFY2023-KL027).

Consent

All the patients enrolled were provided with the informed consent in accordance with the recommendations of the Declaration of Helsinki.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

Haonan Liu and Xiao Ma equally contributed to this work.

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