Clinical Cancer Research

A Single-Arm, Multicenter, Phase II Study of Camrelizumab in Relapsed or Refractory Classical Hodgkin Lymphoma

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Abstract

Purpose: For classical Hodgkin lymphoma (cHL), programmed death-l (PD-1) is a well-recognized attractive target. This multicenter, single-arm, phase II study evaluated the efficacy and safety of camrelizumab, a humanized high-affinity IgG4 mAb against PD-1, in Chinese patients with relapsed or refractory cHL.

Patients and Methods: Patients who had failed to achieve a remission or experienced progression after autologous stem cell transplantation or had received at least two lines of systemic chemotherapies were given camrelizumab 200 mg every 2 weeks. The primary endpoint was objective response rate per independent review committee (IRC) assessment. This study is registered with ClinicalTrials.gov (NCT03155425).

Results: Between June 9, 2017 and September 18, 2017, 75 patients were enrolled and treated. At a median follow-up of 12.9 months, 57 of 75 (76.0%; 95% CI, 64.7–85.1) patients achieved an IRC-assessed objective response, including 21 (28.0%) and 36 (48.0%) patients who had complete and partial remission, respectively. Median duration of response was not reached (range, 0.0^{+}–12.8^{+} months). Treatment-related adverse events (AE) occurred in all patients. The most common ones included cutaneous reactive capillary endothelial proliferation (97.3%, 73/75) and pyrexia (42.7%, 32/75). Grade 3 or 4 treatment-related AEs occurred in 20 patients (26.7%); the most common AE was decreased white blood cell count (4.0%, 3/75). There were no grade 5 treatment-related AEs.

Conclusions: Camrelizumab demonstrated a high response rate, durable response and controllable safety in Chinese patients with relapsed or refractory cHL, becoming a new safe and effective treatment option in this setting.

Introduction

Hodgkin lymphoma is a highly curable condition. Nevertheless, 5%–10% of patients cannot accomplish a remission and 10%–30% of patients will relapse following the initial chemotherapy with or without radiotherapy (1). High-dose chemotherapy followed by autologous stem cell transplantation (ASCT) is the standard first-line therapy for the relapsed or refractory setting; however, effective treatments after ASCT failure are limited (2).

Classical HL (cHL) comprises approximately 95% of Hodgkin lymphoma and is characterized by the presence of malignant Hodgkin Reed–Sternberg (HRS) cells within mixed infiltrate of extensive inflammatory and immune cells (3). Chromosome 9p24.1 alteration (including amplification) enables HRS cells to evade immune surveillance in cHL by increasing the expression of ligands of programmed death-l (PD-1) and enhancing their induction via JAK2 signaling (4–6). This

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Translational Relevance

There are limited effective therapies for patients with relapsed or refractory classical Hodgkin lymphoma (cHL). In this study, we reported that camrelizumab (an anti–PD-1 antibody) achieved a high response rate of 76.0% in patients with cHL after autologous stem cell transplantation or at least two lines of systemic chemotherapies, with a long duration of response (median, not reached; range, 0.0^{+}–12.8^{+} months). Camrelizumab was safe and well tolerated. The most common treatment-related adverse event was cutaneous reactive capillary endothelial proliferation; however, all such events were grade 1 or 2 in severity, and most of them were self-limited and clinically controllable. These findings supported camrelizumab as a new safe and effective treatment option in this setting.

genetically determined dependence on the PD-1 pathway makes PD-1 an attractive target in the treatment of cHL. The remarkable activities of anti–PD-1 antibodies nivolumab and pembrolizumab have been proven in patients with cHL after ASCT and/or brentuximab vedotin (7, 8).

Camrelizumab (SHR-1210) is a humanized high-affinity IgG4 mAb against PD-1 and is well tolerated with promising antitumor activity (9–13). Because of low accessibility and affordability of ASCT and no other standard treatment options, many Chinese patients with relapsed/refractory cHL have received multiple lines of salvage chemotherapies with poor outcomes. In this context, the current phase II study evaluated the efficacy and safety of camrelizumab in Chinese patients with relapsed/refractory cHL.

Patients and Methods

Patients

Eligible patients were histologically confirmed, relapsed, or refractory cHL who met one of the following criteria: (i) had failed to achieve a remission or experienced progression after ASCT; or (ii) had received at least two lines of systemic chemotherapies and were ineligible for ASCT. Relapsed cHL was defined as the occurrence of confirmed disease progression following the most recent prior therapy, while refractory cHL was defined as failure to achieve remission to the most recent prior therapy. Additional inclusion criteria included age $\geq$ 18 years, at least one measurable lesion according to 2014 Lugano Criteria for Malignant Lymphomas, Eastern Cooperative Oncology Group (ECOG) performance status of 0 or 1, life expectancy $\geq$ 12 weeks, and adequate laboratory parameters during the screening period (14 days before enrollment). Key exclusion criteria included nodular lymphocyte predominant HL or gray zone lymphoma; known central nervous system lymphoma; active, known, or suspected autoimmune disease; immunosuppressive therapy within 14 days prior to the first study dose; previous receipt of antitumor vaccines or other antitumor therapy with immune stimulation within 3 months before the first study dose; prior exposure to any drugs targeting T-cell costimulation or checkpoint pathways; prior chemotherapy, radiotherapy, or immunotherapy within 4 weeks before the first study dose; history of allogeneic hematopoietic stem cell transplantation; ASCT within 90 days before the first study dose; known and highly suspicion of interstitial pneumonia; active pulmonary tuberculosis; severe acute or chronic infection; known HIV; and untreated active hepatitis B or C infection. The full criteria are available in Supplementary Materials.

Trial design and treatment

This was an ongoing multicenter, single-arm, phase II clinical trial of camrelizumab in relapsed or refractory cHL. Patients were intravenously given camrelizumab 200 mg every 2 weeks until disease progression, intolerable toxicity, withdrawal of consent, or investigator decision per protocol. Continuation of treatment beyond the first radiographic progression was permitted if the patient had no investigator-assessed clinical deterioration and tolerated study treatment as agreed by the investigator and sponsor. Treatment interruptions were allowed to manage treatment-related adverse events (AEs) until these events resolved to grade 0 or 1.

The study protocol and all amendments were approved by the Ethics Committee of each study site and conducted in accordance with the Good Clinical Practice and Declaration of Helsinki. All patients provided written informed consent before enrollment.

Endpoints and assessments

The primary endpoint was objective response rate (ORR) per independent review committee (IRC) assessment. The secondary endpoints included investigator-assessed ORR, time to response (TTR), duration of response (DoR) and progression-free survival (PFS) by IRC and investigator assessment, overall survival (OS), safety, and pharmacokinetics parameters (the last one not addressed in this article).

Response was assessed with CT or MRI and ^{18}F-fluorodeoxyglucose avid by positron emission tomography (FDG-PET) per 2014 Lugano Criteria for Malignant Lymphomas (14). CT/MRI examination was conducted at baseline, at weeks 9, 17, 25, 37, 49, 65, 81, and 97, and then every 26 weeks thereafter until progression, commencement of a new therapy, or death. FDG-PET scanning was conducted at baseline, at weeks 17 and 25, and within 4 weeks after CT scan to confirm complete remission (CR). For patients who did not have two consecutive negative scans before week 49, a FDG-PET scanning was required at week 49.

Safety was assessed by laboratory test, monitoring clinical symptoms and vital signs, and recording AEs. AEs were coded using the Medical Dictionary for Regulatory Activities (MedDRA; version 20.0) and graded according to the National Cancer Institute Common Terminology Criteria for Adverse Events (NCI CTCAE; version 4.03).

Statistical analysis

The sample size of 50 patients provided roughly 93% power to detect that the lower limit of 95% confidence interval (CI) of ORR was 40% or more, assuming that expected ORR would be 65% for camrelizumab in relapsed or refractory cHL. Considering a drop-out rate of 20%, we planned to recruit 60 patients.

Eligible patients who received at least one dose of camrelizumab were included in the efficacy and safety analyses. The proportion of patients achieving objective response [CR and partial remission (PR)] was calculated on the basis of the best overall response during the study. Ninety-five percent CIs were calculated using Clopper–Pearson method. Kaplan–Meier method was used to estimate median DoR, PFS, and OS, and their 95% CIs were estimated by Brookmeyer–Crowley method. All these analyses were conducted using SAS (version 9.4).

Results

Patients and treatment exposure

Between June 9, 2017 and September 18, 2017, 75 patients were recruited from and treated at 14 study sites in China. All the 75 patients started study treatment after enrollment and thus were included in the efficacy and safety analysis. Baseline characteristics are listed in Table 1. The median age was 34 years (range, 20–77). The main pathologic types were nodular sclerosis (65.3%, 49/75) and mixed cellularity (29.3%, 22/75). There were 86.7% (65/75) of patients at Ann Arbor stage III or IV. The median line of prior systemic chemotherapy was 3 (range, 1–10). Six patients (8.0%) had been treated with brentuximab vedotin, 9 (12.0%) had a history of ASCT, and 36 (48.0%) had received radiotherapy.

At the time of data cut-off date (September 18, 2018), 32 patients (42.7%) discontinued camrelizumab treatment mainly due to disease progression ($n = 23$), and 43 (57.3%) were still on treatment (Fig. 1). The median duration of follow-up was 12.9 months (range, 7.2–14.9). Patients received a median exposure duration of 12.5 months (range, 0.5–14.9).

Table 1. Baseline characteristics

Characteristics	Patients ($n = 75$)
Age	
Median, y (range)	34 (20–77)
≤45 y	60 (80.0)
>45 y	15 (20.0)
Gender	
Male	44 (58.7)
Female	31 (41.3)
ECOG performance status	
0	37 (49.3)
1	38 (50.7)
Pathological type	
Nodular sclerosis	49 (65.3)
Mixed cellularity	22 (29.3)
Lymphocyte-rich	3 (4.0)
Lymphocyte depletion	0
Missing	1 (1.3)
Median time from pathological diagnosis to enrollment, mo (range)	35.4 (1.1–212.4)*
Ann Arbor stage	
IA/IB	0
IIA	6 (8.0)
IIB	4 (5.3)
IIIA	9 (12.0)
IIIB	7 (9.3)
IVA	23 (30.7)
IVB	26 (34.7)
Previous therapies	
Brentuximab vedotin	6 (8.0)
Autologous stem cell transplantation	9 (12.0)
Radiotherapy	36 (48.0)
Lines of chemotherapy	
1	1 (1.3)
2	24 (32.0)
3	20 (26.7)
4	12 (16.0)
≥5	18 (24.0)
Median (range)	3 (1–10)
Time from completion of the most recent regimen	
<3 mo	35 (46.7)
3–6 mo	14 (18.7)
>6 mo	24 (32.0)
Missing	2 (2.7)

NOTE: Data are n (%) unless otherwise specified. ECOG, Eastern Cooperative Oncology Group.

*The exact date of pathologic diagnosis was unknown in two patients.

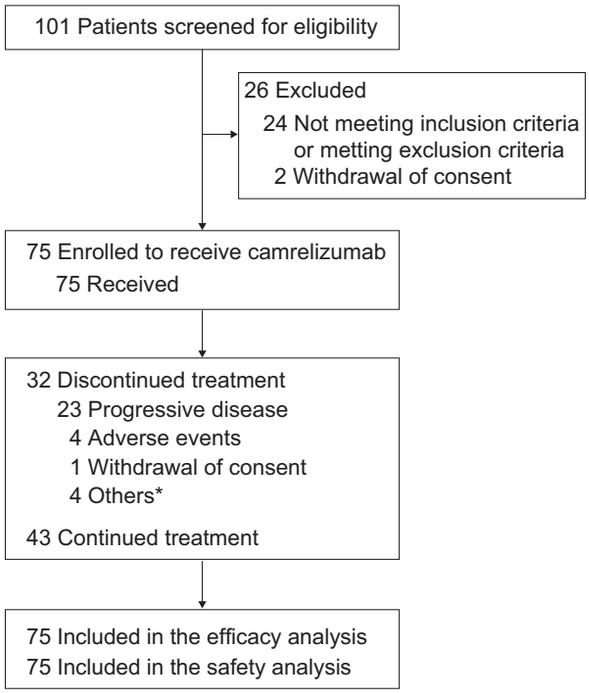

Figure 1.

Trial profile. *Two patients discontinued treatment due to pregnancy, one decided to withdraw from the trial, and one refused treatment due to family reasons.

Efficacy

All patients, with exception of two patients, experienced a reduction from baseline in tumor size (Fig. 2A; Supplementary Fig. S1A). According to the assessment by IRC, 57 patients achieved an objective response (21 CR and 36 PR; Table 2). The ORR as per IRC was 76.0% (95% CI, 64.7–85.1). By investigator review, 59 patients had an objective response (28 CR and 31 PR; Table 2). The ORR as per investigator was 78.7% (95% CI, 67.7–87.3). Consistency rate between the IRC and investigator assessment was 81.3% for objective response.

Among the responders, the median time to IRC-assessed response was 2.0 months (range, 1.7–5.7). Similar median TTR was reported by investigator (2.0 months; range, 0.8–4.2). Forty-four out of the 57 IRC-assessed responses (77.2%) were still ongoing, and the Kaplan–Meier estimated median DoR was not reached (range, 0.0^{+}–12.8^{+} months; Fig. 2B). There were 77.2% of IRC-assessed responders with a DoR over 6 months. As of the cut-off date, 38 of 59 investigator-assessed responses (64.4%) were still ongoing, and the Kaplan–Meier estimated median DoR was not reached (range, 1.6–11.0^{+} months; Supplementary Fig. S1B). There were 72.9% of investigator-assessed responders with a DoR over 6 months. The estimated 6-month DoR rate was 85.6% (95% CI, 73.3–92.5) as per IRC and 74.6% (95% CI, 61.4–83.8) as per investigator, respectively.

According to the assessment by IRC, the median PFS was not reached (95% CI, 11.2 months–not reached; Fig. 2C). According

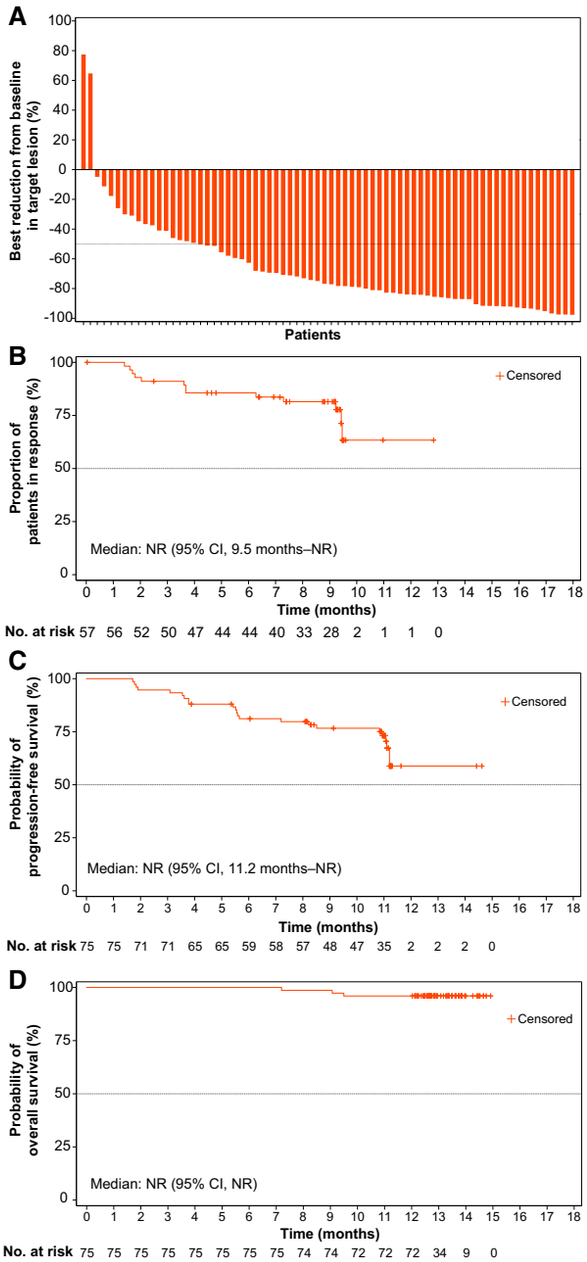

Figure 2.

Efficacy outcome. **A,** Best percentage changes from baseline in size of target lesions per IRC. **B,** Kaplan–Meier plot of duration of response per IRC. **C,** Kaplan–Meier plot of progression-free survival per IRC. **D,** Kaplan–Meier plot of overall survival. IRC, independent review committee; NR, not reached; CI, confidence interval.

to the assessment by investigator, the median PFS was 11.3 months (95% CI, 11.0–not reached; Supplementary Fig. S1C). The 6-month PFS rate was 81.1% (95% CI, 70.2–88.4) by IRC and 73.3% (95% CI, 61.8–81.9) by investigator, and the 9-month PFS rate was 76.6% (95% CI, 65.1–84.8) by IRC and 65.2% (95% CI, 53.3–74.8) by investigator (Fig. 2C; Supplementary Fig. S1C). The median OS was not reached (Fig. 2D).

Table 2. Tumor responses as assessed by the IRC and investigator

Variable	IRC assessment	INV assessment
Objective response rate, % (95% CI)	76.0 (64.7–85.1)	78.7 (67.7–87.3)
Best overall response, n (%)		
Complete remission	21 (28.0)	28 (37.3)
Partial remission	36 (48.0)	31 (41.3)
Stable disease	14 (18.7)	14 (18.7)
Progressive disease	4 (5.3)	2 (2.7)

Abbreviations: IRC, independent review committee; INV, investigator.

An ad hoc analysis was conducted using a cut-off date of January 18, 2019. The median duration of follow-up was 16.9 months. The median DoR per IRC and investigator were still not reached (range, 0.0^{+}–16.8^{+} months per IRC; 1.6–13.4^{+} months per investigator). The DoR rates at 9 and 12 months were 81.6% (95% CI, 68.4–89.7) and 74.6% (95% CI, 60.1–84.5) as per IRC and 67.6% (95% CI, 54.0–78.0) and 65.6% (95% CI, 51.9–76.3) as per investigator, respectively. The median PFS per IRC and investigator were still not reached. The 12-month PFS rate was 66.5% (95% CI, 53.7–76.4) by IRC and 57.7% (95% CI, 45.5–68.2) by investigator. Only three patients (4.0%) died, and others had a survival longer than 16 months.

Safety

At data cutoff, all patients experienced at least one all-causality AE (Table 3). Grade 3 or 4 events occurred in 32.0% of patients (24/75), while no grade 5 events occurred.

At least one treatment-related AE was reported in each patient, with the most common one being cutaneous reactive capillary endothelial proliferation (RCEP; 97.3%, 73/75; mainly distributed on the face, neck, trunk, and extremities) and pyrexia (42.7%, 32/75; Table 3). Despite the cutaneous RCEP had a high incidence, it was all grade 1 (59/73, 80.8%) or grade 2 (14/73, 19.2%) in severity. The most common morphologic feature of cutaneous RCEP was "red-nevus-like," followed by "mulberry-like." A minority of "red-nevus-like" lesions changed to "pearl-like" lesions. Typical images of cutaneous RCEP are shown in Fig. 3. Nine patients underwent pathologic examination, and the results indicated benign proliferation of endothelial cells in the lesion tissue. Thirteen patients received colonoscopy and/or gastroscopy, and no visceral vascular proliferation was found. Apart from the skin, RCEP also appeared on oral mucosa (9/75, 12.0%; grade 1), palpebral conjunctiva (4/75, 5.3%; grade 1), and nasal mucosa (3/75, 4.0%; grade 1 in 2 patients and grade 2 in one patient). In most patients (50/73, 68.5%), initial RCEP occurred during the second or third treatment cycles. The median time to onset of RCEP was 27 days (range, 1–77), and the median time to maximal RCEP toxicity was 30 days (range, 4–262). Complete regression of all RCEP lesions was only observed in 19 of the 73 patients (26.0%), as 43 patients were still on treatment. However, 38 patients (52.1%) experienced at least once RCEP regression during study period, and the median time from onset to regression was 219 days (range, 37–330). Most of the RCEP lesions could spontaneously regress. Only the RCEP lesions that occurred on the body area prone to friction were treated with local therapy, such as laser, cryotherapy, or surgical resection.

Twenty patients (26.7%) experienced grade 3 or 4 treatment-related AEs. The most common ones included decreased white blood cell count (4.0%, 3/75), as well as decreased neutrophil count, increased gamma-glutamyltransferase, and weight gain (each 2.7%, 2/75; Table 3).

Table 3. Adverse events

Events, *n* (%)	All-cause		Treatment-related	
	Any grade	Grade 3–4	Any grade	Grade 3–4
Cutaneous RCEP	73 (97.3)	0	73 (97.3)	0
Pyrexia	32 (42.7)	0	32 (42.7)	0
Upper respiratory tract infection	32 (42.7)	1 (1.3)	18 (24.0)	0
White blood cell decreased	20 (26.7)	3 (4.0)	20 (26.7)	3 (4.0)
Hypothyroidism	20 (26.7)	0	20 (26.7)	0
Alanine aminotransferase increased	19 (25.3)	0	19 (25.3)	0
Weight gain	18 (24.0)	2 (2.7)	12 (16.0)	2 (2.7)
Neutrophil count decreased	18 (24.0)	2 (2.7)	18 (24.0)	2 (2.7)
Anemia	15 (20.0)	0	14 (18.7)	0
Aspartate aminotransferase increased	12 (16.0)	0	12 (16.0)	0
Cough	12 (16.0)	0	11 (14.7)	0
Infusion-related reaction	11 (14.7)	0	11 (14.7)	0
Platelet count decreased	10 (13.3)	1 (1.3)	10 (13.3)	1 (1.3)
Nasopharyngitis	10 (13.3)	0	8 (10.7)	0
Pruritus	9 (12.0)	0	8 (10.7)	0
Gamma-glutamyltransferase increased	9 (12.0)	3 (4.0)	8 (10.7)	2 (2.7)
Blood thyroid-stimulating hormone increased	9 (12.0)	0	8 (10.7)	0
Oral capillary proliferation	9 (12.0)	0	9 (12.0)	0
Blood bilirubin increased	8 (10.7)	0	8 (10.7)	0
Urinary tract infection	8 (10.7)	1 (1.3)	4 (5.3)	0
Hypokalemia	8 (10.7)	1 (1.3)	3 (4.0)	1 (1.3)

NOTE: AEs of any grade occurring in ≥10% of patients are shown. RCEP, reactive capillary endothelial proliferation. Treatment-related AEs were defined as AEs for which causality to treatment could not be certainly ruled out (i.e., those definitely related, possibly related, unassessable, and possibly not related to treatment).

Serious AEs (SAEs) of all-causality were reported in 10 patients (13.3%), and those related to treatment occurred in nine patients (12.0%). Pneumonitis occurred in three patients (4.0%), two of whom had pulmonary infiltration before study treatment. Pneumonitis in all of the three patients improved after treatment interruption and high-dose corticosteroid therapy. Other SAEs included nephrotic syndrome, cutaneous RCEP, and nasal mucosa capillary proliferation, increased blood creatine phosphokinase, cervical infection, and nasal inflammatory polyp (each 1.3%, 1/75). All these SAEs improved or resolved by symptomatic treatment or surgery.

Twenty-two patients (29.3%) experienced treatment-related AEs resulting in treatment interruption. Four patients (5.3%) experienced treatment-related AEs leading to permanent treatment discontinuation, including two patients with grade 3 pneumonitis, one with grade 3 hypersensitivity immune response, and one with grade 3 renal injury. All these AEs resolved.

Discussion

In current phase II study, camrelizumab achieved an IRC-assessed ORR of 76.0% in Chinese patients with relapsed or refractory cHL. The ORR per investigator was 78.7%, showing a substantial concordance (81.3%) with the IRC-assessed objective response. At the time of analysis, the median DoR was not reached, with 44 of the 57 IRC-assessed responses (77.2%) being still ongoing. Camrelizumab was safe and well-tolerated in patients with relapsed or refractory cHL, with only four patients discontinuing treatment due to an AE. The most common treatment-related AE was cutaneous RCEP; however, all such events were grade 1 or 2 in severity, and most of them were self-limited and clinically controllable.

Before this study, it had been proven that nivolumab and pembrolizumab are two anti–PD-1 checkpoint inhibitors effective in patients with relapsed or refractory cHL who received prior ASCT and/or brentuximab vedotin (7, 8). After a long follow-up, the ORR was 69% with nivolumab and 71.9% with pembrolizumab (15, 16). The 12-month DoR rate was 58.5% and 12-month PFS rate was 53.5% in patients treated

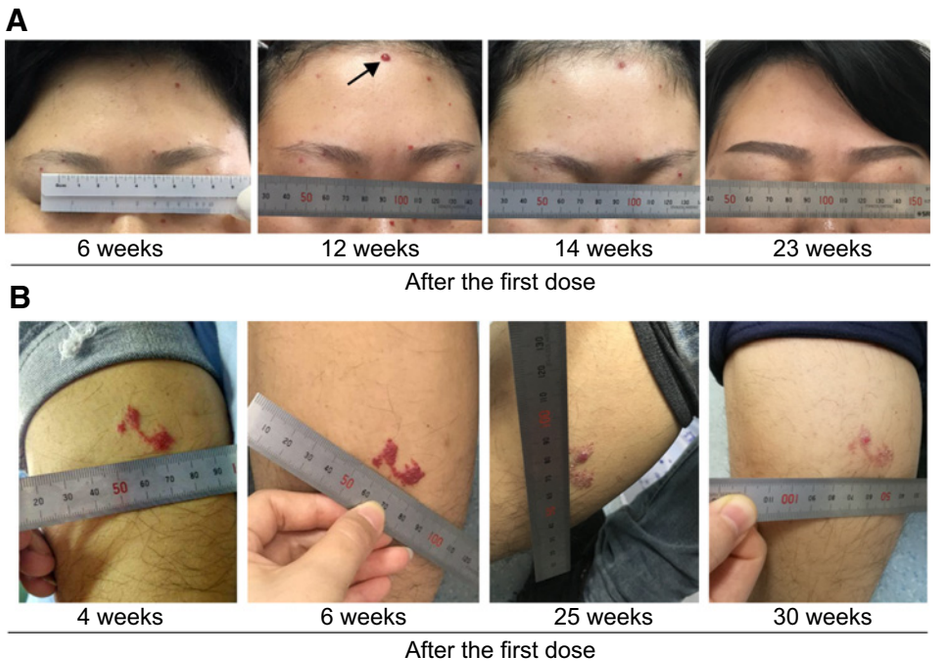

Figure 3.
Clinical images of cutaneous reactive capillary endothelial proliferation in two patients. **A,** In the patient, red-nevus–like lesions appeared after 6 weeks of camrelizumab treatment. One lesion changed to pearl-like lesion at the 12-week time points, as indicated by arrow. Nearly all lesions disappeared at the 23-week time points. **B,** In the patients, mulberry-like lesion appeared after 4 weeks of camrelizumab treatment and then obviously regressed during treatment.

with pembrolizumab (16). Camrelizumab and sintilimab are two anti–PD-1 antibodies simultaneously studied in patients with relapsed or refractory cHL in China. This study enrolled patients with similar baseline characteristics as the sintilimab study (17). There were 66.7% of patients who had received at least three previous lines of systemic chemotherapy before camrelizumab. Compared with sintilimab (17), camrelizumab had comparable ORR (76.0% vs. 80.4%) and 6-month PFS rate (81.1% vs. 77.6%). We also performed an *ad hoc* analysis using a cut-off date of January 18, 2019 (median duration of follow-up, 16.9 months) to assess the long-term response and survival data with camrelizumab. The estimated 12-month DoR and PFS rate were 74.6% and 66.5%, respectively. A minority of patients in this study had received prior ASCT or brentuximab vedotin before enrollment, making it inappropriate to compare camrelizumab with nivolumab and pembrolizumab. However, our results supported the long-lasting response and survival free of progression with camrelizumab monotherapy in highly pretreated relapsed or refractory cHL patients in China. Nie and colleagues also proved the favorable antitumor activity of camrelizumab monotherapy in cHL in a phase II study (18). Furthermore, addition of low-dose decitabine (a hypomethylating agent) to camrelizumab remarkably improved CR rate from 32% to 71%, 12-month DoR rate from 60% to 89%, and 12-month PFS rate from 59% to 89%, which might be attributed to the enhanced T-cell rejuvenation by methylation inhibition. This combination provides a potential treatment regimen for patients with relapsed or refractory cHL.

Except cutaneous RCEP, the safety profile of camrelizumab was similar to other anti–PD-1 antibodies in cHL. No patient died due to an AE. Pyrexia and hypothyroidism were the common AEs related to immune checkpoint inhibitors. The incidences of the two types of events in this study (42.7% and 26.7%) were similar to those related to sintilimab (41% and 20%) (17), but higher than those related to pembrolizumab (10.5% and 12.4%) and nivolumab (14% and unknown) (7, 8). However, all these events were grade 1 or 2 in severity and could be well controlled.

Cutaneous RCEP was a specific type of AE following camrelizumab administration and reported as reactive capillary hemangioma in the previous phase I studies (10–12). However, it was a result of benign proliferation of capillary endothelial cells. The major morphologic features were "red-nevus- or cherry-like," "mulberry-like," and "patch-like," and the lesions regressed spontaneously during or after treatment (19–21). In this study, cutaneous RCEP occurred in 73 patients (97.3%), but the majority were grade 1 (59/73, 80.8%) and the rest were all grade 2 (14/73, 19.2%). The RCEP mainly occurred on the skin, seldom occurred in other sites such as oral mucosa, nasal mucosa, and palpebral conjunctiva, but no visceral vascular proliferation was found. The median time to onset of RCEP and median time to maximal RCEP toxicity were similar (27 and 30 days, respectively). With a median exposure duration of 12.5 months, the grade of RCEPs were always grade 1 or 2 during study, except for those had regressed. Thus, there was no cumulative RCEP toxicity. Most RCEP lesions were self-limited and required no intervention, and some were treated by local therapy (such as laser, cryotherapy, or surgical resection). Despite the high incidence, no patient discontinued treatment due to this type of event. It was been found that combination of camrelizumab with gemcitabine plus cisplatin could significantly reduce the incidence of RCEP in nasopharyngeal carcinoma (9), but similar phenomenon was not observed in camrelizumab plus decitabine in cHL (18). To find a combination strategy with improved efficacy and reduced toxicity is a challenge of camrelizumab treatment in cHL.

This study demonstrated the antitumor activity of camrelizumab with a long duration of follow-up; but was limited by its single-arm phase II design, as no standard treatment could be set as a control.

Overall, the anti–PD-1 mAb, camrelizumab showed high remission rate, durable response, long survival, and controllable safety in patients with relapsed or refractory cHL, providing a new safe and effective treatment option for Chinese patients with cHL.

Disclosure of Potential Conflicts of Interest

W. Wang is an employee of Jiangsu Hengrui Medicine Co., Ltd. C. Chen is an employee of Jiangsu Hengrui Medicine Co., Ltd. No potential conflicts of interest were disclosed by the other authors.

Authors' Contributions

Conception and design: J. Zhu, J. Feng, Y. Song, W. Wang
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