



Summary Report of Benefit-Risk Assessment

TRODELVY POWDER FOR SOLUTION FOR INFUSION 180 MG/VIAL

NEW DRUG APPLICATION

Active Ingredient(s)	Sacituzumab govitecan
Product Registrant	Everest Medicines (Singapore) Pte. Ltd.
Product Registration Number	SIN16425P
Application Route	Abridged evaluation
Date of Approval	31 January 2022

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A INTRODUCTION

Trodelvy is indicated for the treatment of adult patients with unresectable locally advanced or metastatic triple negative breast cancer (TNBC) who have received two or more prior systemic therapies, at least one of them for metastatic disease.

The active substance, sacituzumab govitecan, is an antibody-drug conjugate composed of the following three components:

1. the humanised monoclonal antibody, sacituzumab, which binds to the trophoblast cell-surface antigen-2 (Trop-2), a transmembrane calcium signal transducer that signals to cells for self-renewal, proliferation, invasion, and survival; and is overexpressed in many epithelial cancers, including TNBC;
2. the camptothecin-derived drug, SN-38, a topoisomerase I inhibitor and an active metabolite of irinotecan; and
3. a hydrolysable linker, known as CL2A, which links the humanised monoclonal antibody to SN-38.

Sacituzumab govitecan binds to Trop-2-expressing cancer cells and is internalised with the subsequent release of SN-38 via hydrolysis of the linker. SN-38 interacts with topoisomerase I and prevents re-ligation of topoisomerase I-induced single strand breaks. The resulting DNA damage leads to apoptosis and cell death.

Trodelvy is available as powder for solution for infusion containing 180 mg/vial of sacituzumab govitecan. Other ingredients in the vial are polysorbate 80, 2-(N-morpholino) ethane sulfonic acid (MES) hydrate and trehalose dihydrate.

B ASSESSMENT OF PRODUCT QUALITY

The drug substance, sacituzumab govitecan, and the drug product, Trodelvy Powder for Solution for Infusion, are manufactured at BSP Pharmaceuticals S.p.A., Latina Scalo, Italy.

Drug substance:

The drug substance, sacituzumab govitecan, is an antibody-drug conjugate composed of the Trop-2 directed monoclonal antibody that is covalently linked to the cytotoxic agent SN-38 via a hydrolysable linker (CL2A).

Adequate controls have been presented for the cell banks, raw materials, reagents, used in the production of the sacituzumab antibody and the CL2A-SN38 intermediates. The in-process control tests and acceptance criteria applied during the manufacturing of the drug substance are considered appropriate. The drug substance manufacturer is compliant with Good Manufacturing Practice (GMP). Process validation was conducted on six consecutive production-scale batches.

The characterisation of the drug substance and its impurities are in accordance with ICH guidelines. Potential and actual impurities are adequately controlled.

The drug substance specifications are established in accordance with ICH Q6B and the impurity limits are considered adequately qualified. The analytical methods used are adequately described and non-compendial methods are validated in accordance with ICH

guidelines. Information on the reference standards used for identity, assay and impurities testing was presented.

The stability data presented were adequate to support the approved storage condition and shelf-life. The primary packaging is a [REDACTED]. The drug substance is approved for storage at [REDACTED] with a shelf-life of [REDACTED].

Drug product:

The manufacturing process utilises aseptic processing.

All manufacturing sites involved are compliant with GMP. Proper development and validation studies were conducted. It has been demonstrated that the manufacturing process is reproducible and consistent. Adequate in-process controls are in place.

The specifications are established in accordance with ICH Q6B and impurity limits are considered adequately qualified. The analytical methods used are adequately described and non-compendial methods were validated in accordance with ICH guidelines. Information on the reference standards used for identity, assay and impurities testing is presented.

The stability data submitted were adequate to support the approved shelf-life of 36 months when stored at 2 to 8°C, protected from light. After reconstitution and dilution, the claimed in-use period of 4 hours at 2 to 8°C, and administration time of 4 hours for diluted solution after refrigeration (including infusion time), is supported with appropriate data. The container closure system is a 50 ml clear Type 1 glass vial, with butyl elastomeric rubber stopper and aluminium flip-off overseal.

C ASSESSMENT OF CLINICAL EFFICACY

The clinical efficacy of sacituzumab govitecan for the treatment of adult patients with unresectable locally advanced or metastatic TNBC who have received two or more prior systemic therapies was supported by one pivotal Phase 3 study, Study IMMU-132-05 (ASCENT), and one supportive Phase 1/2 study, Study IMMU-132-01.

Study IMMU-132-05 (ASCENT)

Study IMMU-132-05 (ASCENT) was a Phase 3, randomised, open-label, multicentre study of the efficacy and safety of sacituzumab govitecan compared to treatment of physician's choice (TPC) in 529 adult patients with unresectable locally advanced or metastatic TNBC who were either refractory or had relapsed after at least two prior standard-of-care chemotherapy regimens.

Patients were randomised 1:1 to receive either sacituzumab govitecan 10 mg/kg administered intravenously on Days 1 and 8 of a 21-day treatment cycle or TPC (eribulin, capecitabine, gemcitabine or vinorelbine) at standard doses until progression requiring discontinuation of further treatment, unacceptable toxicity, study withdrawal, or death, whichever came first. Considering that there is currently no preferred or standard regimen used in patients with refractory or relapsed metastatic TNBC, the choice of the active comparator (eribulin,

capecitabine, gemcitabine or vinorelbine) is acceptable, as these agents are included as recommended regimens for the treatment of metastatic TNBC in clinical practice guidelines.

The primary endpoint was progression-free survival (PFS) as assessed by a blinded independent review committee (IRC) using the Response Evaluation Criteria in Solid Tumours (RECIST) v1.1 in patients without brain metastases at baseline (i.e., BM-neg population). The secondary endpoints included PFS by IRC assessment in the intent-to-treat (ITT) population (i.e., all randomised patients, with or without brain metastases), overall survival (OS) in both the BM-neg population and ITT population, objective response rate (ORR), and duration of response (DOR). The ITT population was the analysis set for the evaluation of efficacy in the requested broad patient population regardless of brain metastases status. Appropriate control for the Type I error was applied using hierarchical testing of the primary endpoint, PFS, and the key secondary endpoint, OS, in the various analyses' populations.

A total of 529 patients were randomised in the study and were included in the ITT population: 267 patients in the sacituzumab govitecan group and 262 patients in the TPC group. Of these, 468 patients had no brain metastases at baseline and were included in the BM-neg population: 235 patients in the sacituzumab govitecan group and 233 in the TPC group.

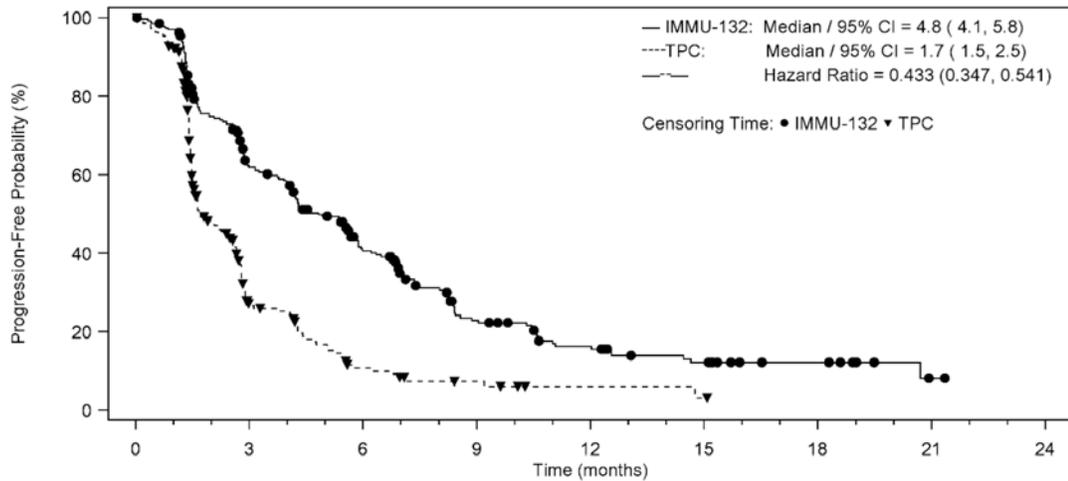
In the ITT population of the TPC group, 139 patients (53.1%) were randomised to receive eribulin, 52 patients (19.8%) to receive vinorelbine, 38 patients (14.5%) to receive gemcitabine, and 33 patients (12.6%) to receive capecitabine.

The patient demographics and baseline disease characteristics were generally well-balanced between the treatment arms. The majority of patients in the ITT population were female (99.6%), aged <65 years (80.9%), and White (79.0%); 4.2% of patients were Asian. A total of 11.5% of patients had previously treated and stable brain metastases at baseline, 8.1% of patients were BRCA 1/BRCA 2 mutation status positive, and 70.3% of patients had TNBC at diagnosis. The median number of prior systemic regimens was 4 (range 2 to 17); the majority of patients (69.0%) had received 2 to 3 prior chemotherapies and 31.0% had received >3 prior chemotherapies. The most frequent prior systemic therapies were cyclophosphamide (82.6%), paclitaxel (78.3%), carboplatin (64.8%), and capecitabine (66.9%); 28.9% of patients had received prior PD-1/PD-L1 therapy.

The primary analysis of PFS by IRC in the BM-neg population demonstrated a statistically significantly longer median PFS in the sacituzumab govitecan group (5.6 months; 95% CI: 4.3, 6.3) compared to the TPC group (1.7 months; 95% CI: 1.5, 2.6), with a hazard ratio (HR) of 0.409 (95% CI: 0.323, 0.519; $p < 0.0001$). The median PFS by investigator assessment was 5.5 months (95% CI: 4.5, 6.3) in the sacituzumab govitecan group and 1.7 months (95% C: 1.5, 2.5) in the TPC group, with a HR of 0.347 (95% CI: 0.277, 0.435). The PFS results were consistent in various sensitivity analyses based on different definitions of progression events and censoring rules, demonstrating robustness of the data.

A statistically significant prolongation of PFS was also demonstrated with sacituzumab govitecan compared to TPC in the ITT population. The median duration of PFS by IRC was 4.8 months (95% CI: 4.1, 5.8) in the sacituzumab govitecan arm compared to 1.7 months (95% CI: 1.5, 2.5) in the TPC arm, with a HR of 0.433 (95% CI: 0.347, 0.541; $p < 0.0001$). Consistent results were demonstrated for PFS by investigator assessment, with a median PFS of 5.4 months (95% CI: 4.4, 5.6) in the sacituzumab govitecan group compared to 1.8 months (95% CI: 1.5, 2.5) in the TPC group and a HR of 0.384 (95% CI: 0.311, 0.475).

Kaplan-Meier plot of PFS by IRC assessment (ITT population)

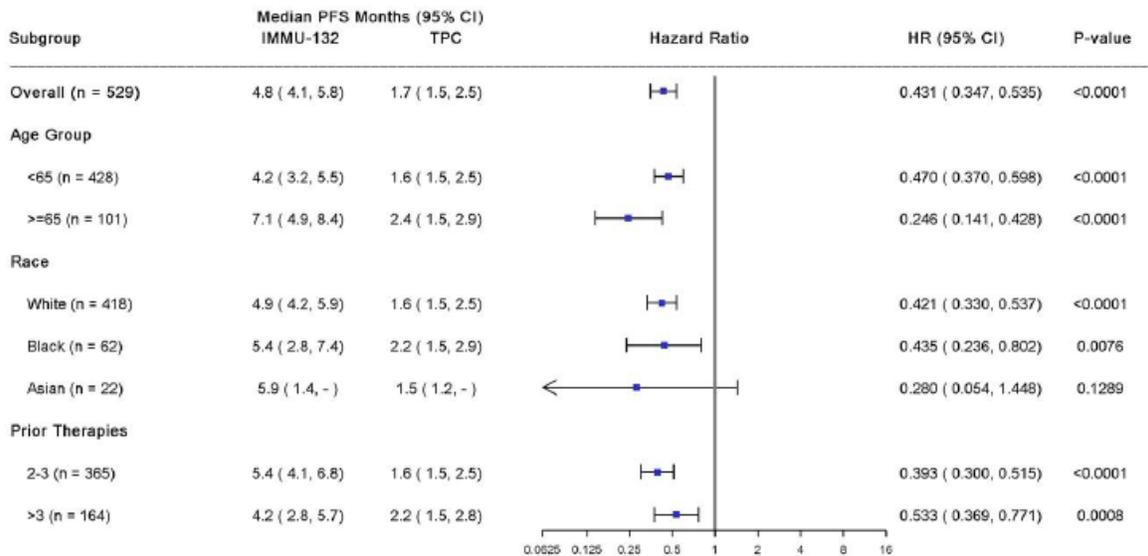


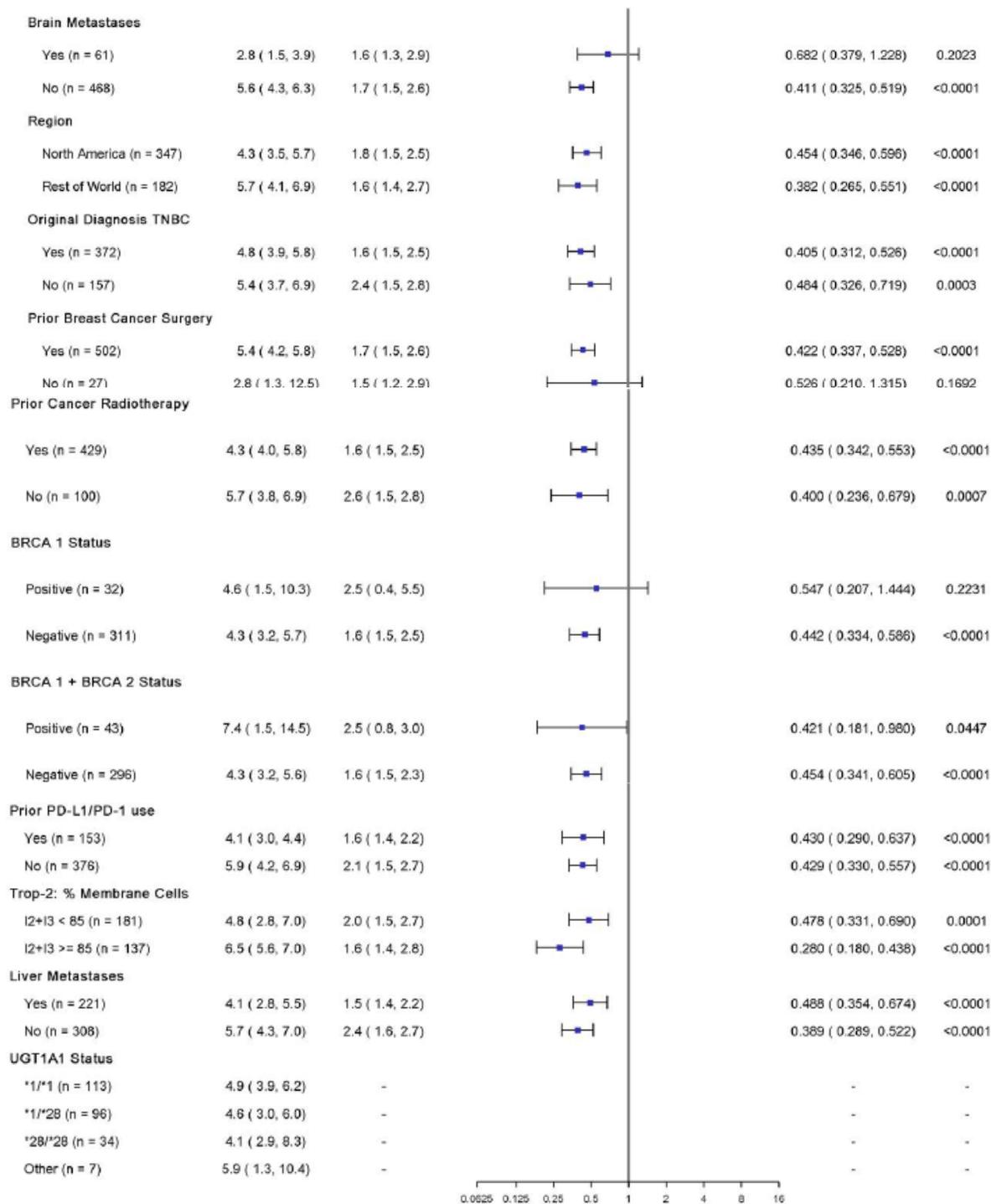
No. of Patients Still at Risk

Time (months)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
IMMU-132	267	251	184	145	135	110	82	64	55	38	34	25	23	17	16	14	9	8	8	5	3	1	0
TPC	262	199	87	41	37	23	13	9	7	6	4	2	2	2	2	1	0	0	0	0	0	0	0

Exploratory subgroup analyses of PFS by IRC in the ITT population showed generally consistent treatment effect with HRs below 1 in all the subgroups analysed.

Forest plot of PFS by IRC assessment in subgroups (ITT population)

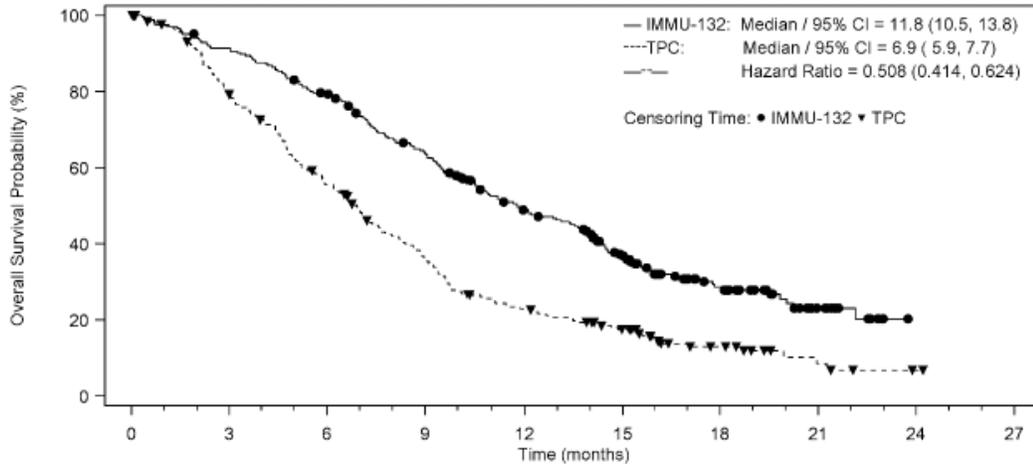




Note: Hazard ratio and p-value are from an unstratified Cox regression analysis

The median OS in the BM-neg population was statistically significantly longer with sacituzumab govitecan (12.1 months; 95% CI: 10.7, 14.0) compared to TPC (6.7 months; 95% CI: 5.8, 7.7), with a HR of 0.476 (95% CI: 0.383, 0.592; $p < 0.0001$). In the ITT population, the median OS was 11.8 months (95% CI: 10.5, 13.8) in the sacituzumab govitecan group and 6.9 months (95% CI: 5.9, 7.7) in the TPC group, and the HR was 0.508 (95% CI: 0.414, 0.624; $p < 0.0001$).

Kaplan-Meier plot of OS (ITT population)



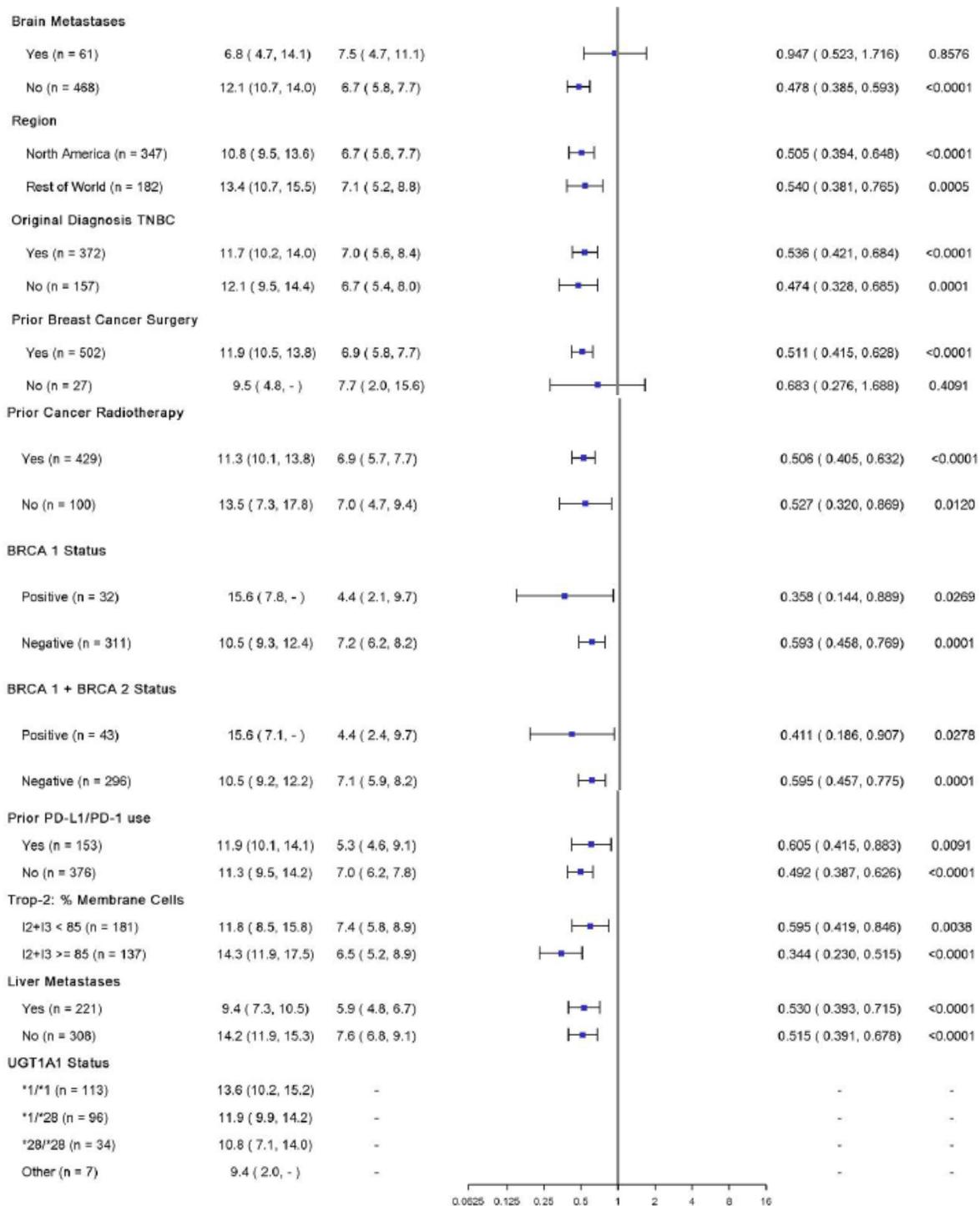
No. of Patients Still at Risk

Time (months)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
IMMU-132	267	260	250	242	232	219	208	189	174	164	145	127	116	109	98	76	56	46	39	31	21	13	8	1	0	0
TPC	262	239	222	192	174	150	132	113	97	84	64	58	52	46	42	34	24	17	14	9	6	5	3	2	1	0

Exploratory subgroup analyses of OS in the ITT population showed generally consistent treatment effect with HRs below 1 in all subgroups analysed.

Forest plot of OS (ITT population)

Subgroup	Median OS Months (95% CI)		Hazard Ratio	HR (95% CI)	P-value
	IMMU-132	TPC			
Overall (n = 529)	11.8 (10.5, 13.8)	6.9 (5.9, 7.7)		0.518 (0.423, 0.634)	<0.0001
Age Group					
<65 (n = 428)	10.7 (9.4, 13.0)	6.7 (5.4, 7.5)		0.532 (0.426, 0.665)	<0.0001
>=65 (n = 101)	14.4 (12.2, -)	8.9 (6.2, 10.2)		0.433 (0.262, 0.715)	0.0011
Race					
White (n = 418)	11.3 (9.6, 13.4)	6.8 (5.6, 7.6)		0.505 (0.403, 0.634)	<0.0001
Black (n = 62)	13.8 (9.4, 18.0)	8.5 (4.8, 12.4)		0.638 (0.342, 1.192)	0.1588
Asian (n = 22)	17.8 (4.2, -)	9.1 (2.5, 17.1)		0.311 (0.100, 0.965)	0.0431
Prior Therapies					
2-3 (n = 365)	12.1 (10.5, 14.4)	6.8 (5.6, 7.5)		0.442 (0.346, 0.566)	<0.0001
>3 (n = 164)	10.5 (7.1, 13.8)	7.6 (5.2, 9.2)		0.716 (0.501, 1.022)	0.0658



Note: Hazard ratio and p-value are from an unstratified Cox regression analysis

The treatment benefit in terms of PFS and OS appeared to be smaller in patients with brain metastases at baseline. The median PFS in patients with brain metastases was 2.8 months in the sacituzumab govitecan group and 1.6 months in the TPC group (HR 0.682; 95% CI: 0.379, 1.228), and the median OS was 6.8 months in the sacituzumab govitecan group and 7.5 months in the TPC group (HR 0.947; 95% CI: 0.523, 1.716). It should be noted that the number of patients in the subgroup with brain metastases was small (n=61), hence the results should

be interpreted with caution. The subgroup analyses results in patients with brain metastases at baseline have been described in the package insert.

In terms of overall response rates, in the ITT population the ORR by IRC assessment was 31.1% for sacituzumab govitecan and 4.2% for TPC (p<0.0001). The ORR by investigator assessment was 31.1% for sacituzumab govitecan and 6.1% for TPC (p<0.0001). The median DOR by IRC was 6.3 months (95% CI: 5.5, 9.0) in the sacituzumab govitecan group and 3.6 months (95% CI: 2.8, not estimable) in the TPC group. The median DOR by investigator assessment was 6.9 months (95% CI: 5.5, 8.0) in the sacituzumab govitecan group and 2.9 months (95% CI: 2.8, 4.2) in the TPC group.

Summary of efficacy results in the ASCENT study (ITT population)

	Sacituzumab govitecan (N=267)	TPC (N=262)
PFS^a by IRC assessment		
Patients with events (%)	190 (71.2)	171 (65.3)
Death	19 (7.1)	29 (11.1)
Radiographic disease progression	171 (64.0)	142 (54.2)
Median (95% CI), months ^b	4.8 (4.1, 5.8)	1.7 (1.5, 2.5)
Hazard ratio (95% CI); p-value ^c	0.433 (0.347, 0.541); <0.0001	
PFS^a by investigator assessment		
Patients with events (%)	218 (81.6%)	193 (73.7%)
Median (95% CI), months ^b	5.4 (4.4, 5.6)	1.8 (1.5, 2.5)
Hazard ratio (95% CI); p-value ^c	0.384 (0.311, 0.475); <0.0001	
OS^d		
Patients with events (%)	179 (67.0)	206 (78.6)
Median (95% CI), months ^b	11.8 (10.5, 13.8)	6.9 (5.9, 7.7)
Hazard ratio (95% CI); p-value ^c	0.508 (0.414, 0.624); <0.0001	
ORR^e by IRC assessment		
Patients with measurable disease at baseline	261	257
ORR (%; 95% CI)	31.1 (25.6, 37.0)	4.2 (2.1, 7.4)
Odds Ratio (95% CI); p-value ^f	10.994 (5.659, 21.358); <0.0001	
DOR by IRC assessment		
Patients with CR or PR	83	11
Median (95% CI), months ^b	6.3 (5.5, 9.0)	3.6 (2.8, -)
Hazard ratio (95% CI); p-value ^c	0.390 (0.142, 1.066); 0.0569	

^a PFS is defined as the time from the date of randomisation to the date of the first radiological disease progression or death due to any cause, whichever comes first.

^b Median is from Kaplan-Meier estimate. CI for median is computed using the Brookmeyer-Crowley method.

^c Stratified log-rank test and stratified Cox regression adjusted for stratification factors: number of prior chemotherapies, presence of known brain metastases at study entry, and region.

^d OS is defined as the time from date of randomisation to the date of death from any cause. Patients without documentation of death are censored on the date they were last known to be alive.

^e ORR is defined as the best confirmed overall response of complete response (CR) or partial response (PR) assessed according to RECIST 1.1. Response of CR or PR are confirmed no less than 4 weeks later.

^f p-value is based on Cochran-Mantel-Haenszel test.

Study IMMU-132-01

Supportive evidence of efficacy was provided from a Phase 1/2, open-label, single-arm, basket study (Study IMMU-132-01), which evaluated the efficacy, safety, and pharmacokinetics of sacituzumab govitecan in adult subjects with metastatic epithelial cancer who had either relapsed or were refractory after at least one standard therapeutic regimen for their tumour type.

Subjects were enrolled in the Phase 2 part of the clinical study in a sequential manner to the 8 mg/kg dose and subsequently to the 10 mg/kg dose. No important differences in safety were seen between the two dose levels. However, the 10 mg/kg dose compared with the 8 mg/kg

dose was associated with a higher ORR (22% and 10%, respectively). Based on these data, subsequently enrolled subjects received 10 mg/kg sacituzumab govitecan.

A total of 144 patients with TNBC were enrolled in the study and received at least one dose of sacituzumab govitecan. Of these 144 patients, 108 were in the mTNBC Target Population (i.e., had received at least 2 prior therapies for metastatic disease and were treated with sacituzumab govitecan at a starting dose of 10 mg/kg administered intravenously on Days 1 and 8 of a 21-day cycle).

The primary efficacy endpoint was ORR as assessed by the investigator using RECIST v1.1, and DOR, PFS and OS were secondary efficacy endpoints.

The patients in the mTNBC Target Population were predominantly ≤ 65 years old (87.0%) and female (99.1%). The majority of the patients were White (75.9%) and 2.8% were Asian. Patients were heavily pre-treated with a median of 3 prior anticancer regimens (range 2 to 10); 60.2% of patients had >2 prior regimens. The most common prior chemotherapies were carboplatin (55.6%), gemcitabine (54.6%), capecitabine (50.9%), eribulin (45.4%), and paclitaxel (43.5%).

In the mTNBC Target Population, the ORR by investigator assessment was 33.3% (95% CI: 24.6, 43.1) with best overall response of complete response (CR) in 2.8% and partial response (PR) in 30.6% of patients. The ORR by IRC assessment was 34.3% (95% CI: 25.4, 44.0), with a CR rate of 6.5% and PR rate of 27.8%. The median DOR by investigator assessment was 7.7 months (95% CI: 4.9, 10.8), the median PFS was 5.6 months (95% CI: 4.8, 6.6), and the median OS was 13.0 months (95% CI: 11.2, 14.0).

Overall, the pivotal Phase 3 ASCENT study met its primary efficacy endpoint and the results adequately supported the efficacy of sacituzumab govitecan for the treatment of adult patients with unresectable locally advanced or metastatic TNBC who have received two or more prior systemic therapies. The results of the supportive study IMMU-132-01 were overall consistent with that of the pivotal ASCENT study and provided additional supportive evidence of efficacy.

D ASSESSMENT OF CLINICAL SAFETY

The safety evaluation was based primarily on safety data from a total of 482 patients (258 patients in the sacituzumab govitecan arm and 224 patients in the TPC arm) enrolled in Study IMMU-132-05 (ASCENT). Safety data for the metastatic TNBC cohort in the supportive Phase 1/2 study IMMU-132-01 were also reviewed to provide additional safety evidence. In addition, safety data were evaluated for two pooled datasets: the Overall Target TNBC pool comprising 366 metastatic TNBC patients who received a starting dose of 10 mg/kg sacituzumab govitecan in Studies IMMU-132-01 and IMMU-132-05; and the All Treated pool comprising 660 patients who received a starting dose of 10 mg/kg sacituzumab govitecan regardless of tumour type in Studies IMMU-132-01 and IMMU-132-05.

The median duration of treatment in Study IMMU-132-05 was 4.4 months (range 0 to 23 months) in the sacituzumab govitecan group and 1.3 months (range 0 to 15 months) in the TPC group. The median treatment duration for sacituzumab govitecan was similar in Studies IMMU-132-01 and IMMU-132-05 (5.1 months and 4.4 months, respectively) and in the Overall Target TNBC (4.1 months) and All Treated pool (4.9 months). The overall safety population

and duration of exposure were considered adequate to reasonably assess the safety of sacituzumab govitecan for the intended population.

Overview of safety profile

	Study IMMU-132-05		Overall Target TNBC Pool (N=366)	All Treated Pool (N=660)
	Sacituzumab govitecan (N=258)	TPC (N=224)		
Any AEs	257 (99.6%)	219 (97.8%)	365 (99.7%)	659 (99.8%)
Any treatment-related AEs	252 (97.7%)	192 (85.7%)	357 (97.5%)	645 (97.7%)
Any Grade ≥3 AEs	186 (72.1%)	145 (64.7%)	264 (72.1%)	493 (74.7%)
Serious AEs	69 (26.7%)	63 (28.1%)	102 (27.9%)	229 (34.7%)
Death within 30 days of last dose	1 (0.4%)	2 (0.9%)	2 (0.5%)	10 (1.5%)
Treatment-related death within 30 days of last dose	0 (0.0%)	1 (0.4%)	0 (0.0%)	1 (0.2%)
AEs leading to study drug discontinuation	12 (4.7%)	12 (5.4%)	16 (4.4%)	46 (7.0%)
AEs leading to study drug dose reduction	56 (21.7%)	59 (26.3%)	56 (15.3%)	56 (8.5%)
AEs leading to study drug interruption	162 (62.8%)	87(38.8%)	211 (57.7%)	361 (54.7%)

The safety profile of sacituzumab govitecan is mainly characterised by high incidences of gastrointestinal AEs (diarrhoea, nausea, constipation, vomiting), myelosuppressive AEs (neutropenia and anaemia) as well as fatigue, alopecia, and decreased appetite. These are known and expected side effects of cytotoxic drugs such as irinotecan.

The proportion of patients with at least one adverse event (AE) was similar in the sacituzumab govitecan and TPC groups (99.6% vs 97.8%) in Study IMMU-132-05. The most frequent AEs in the sacituzumab govitecan group compared with the TPC group included diarrhoea (65.1% vs 17.0%), neutropenia (64.0% vs 43.8%), nausea (62.4% vs 30.4%), fatigue (51.6% vs 39.7%), alopecia (46.9% vs 16.1%), anaemia (39.5% vs 27.7%), constipation (37.2% vs 23.2%), vomiting (33.3% vs 16.1%), decreased appetite (27.5% vs 20.5%), cough (23.6% vs 17.9%), and abdominal pain (21.3% vs 8.0%). These AEs were also the most common AEs in Study IMMU-132-01 and in the Overall Target TNBC and All Treated pools.

Treatment-related AEs were reported in a higher percentage of the sacituzumab govitecan group compared with the TPC group (97.7% vs 85.7%) in Study IMMU-132-05. The most frequent treatment-related AEs in the sacituzumab govitecan group compared with the TPC group were neutropenia (63.2% vs 42.9%), diarrhoea (59.3% vs 12.1%), nausea (57.0% vs 26.3%), alopecia (46.1% vs 15.6%), fatigue (44.6% vs 30.4%), anaemia (34.5% vs 24.1%).

Treatment-related serious adverse events (SAEs) were reported in a higher percentage of the sacituzumab govitecan group compared with the TPC group (15.1% vs 8.5%) in Study IMMU-132-05. The most frequent treatment-related SAE in the sacituzumab govitecan and TPC groups was febrile neutropenia (5.0% vs 1.8%). The incidences of AEs leading to treatment discontinuation (4.7% vs 5.4%) and dose reduction (21.7% vs 26.3%) were comparable between the sacituzumab govitecan and TPC groups. AEs leading to treatment interruption occurred at a higher incidence in the sacituzumab govitecan group compared to the TPC group (62.8% vs 38.8%), with neutropenia being the most frequent AE leading to treatment interruption (46.1% vs 21.0%), followed by diarrhoea (5.4% vs 0.4%), leukopenia (5.0% vs 1.8%), and anaemia (4.3 vs 2.7%).

Two metastatic TNBC patients who received sacituzumab govitecan had a fatal AE within 30 days of the last dose of study treatment. Both events (respiratory failure and metastases to the central nervous system) were considered by the investigator to be unlikely related to sacituzumab govitecan.

AEs of special interest for sacituzumab govitecan include myelosuppressive AEs (neutropenia, febrile neutropenia, anaemia and infection), gastrointestinal AEs (diarrhoea, nausea and vomiting), hypersensitivity, and fatigue. These are mostly known and expected toxicities associated with cytotoxic chemotherapeutic agents such as irinotecan. The safety risks have been adequately described in the package insert, including recommendations for dose modifications for haematologic and non-haematologic toxicities. Given the high incidences of nausea and vomiting, the package insert also recommends premedication with antiemetics to reduce this risk.

Certain AEs such as neutropenia, febrile neutropenia, anaemia, and diarrhoea appeared to occur more frequently in patients who were homozygous for the *28 allele of uridine diphosphate-glucuronosyl transferase 1A1 (UGT1A1) compared with those who were heterozygous (i.e., *1/*28) or those who did not have this allele (i.e., *1/*1). Safety warnings on the increased risk of adverse reactions in patients with reduced UGT1A1 activity have been included in the package insert.

AEs reported with higher incidence in patients homozygous for the UGT1A1*28 allele in Study IMMU-132-05

AE	*1/*1 (N=113)	*1/*28 (N=96)	*28/*28 (N=34)	Other (N=7)
Neutropenia	77 (68.1%)	55 (57.3%)	24 (70.6%)	4 (57.1%)
Diarrhoea	70 (61.9%)	60 (62.5%)	26 (76.5%)	6 (85.7%)
Anaemia	42 (37.2%)	34 (35.4%)	18 (52.9%)	4 (57.1%)
Decreased appetite	34 (30.1%)	20 (20.8%)	14 (41.2%)	2 (28.6%)
Cough	23 (20.4%)	22 (22.9%)	11 (32.4%)	2 (28.6%)
Oedema peripheral	8 (7.1%)	8 (8.3%)	7 (20.6%)	1 (14.3%)
Febrile neutropenia	3 (2.7%)	5 (5.2%)	6 (17.6%)	1 (14.3%)

Overall, sacituzumab govitecan at 10 mg/kg given on Days 1 and 8 of a 21-day treatment cycle was well tolerated in patients with locally advanced or metastatic TNBC and the AEs were manageable through dosing interruptions, dose reductions, and/or standard supportive care.

E ASSESSMENT OF BENEFIT-RISK PROFILE

Metastatic TNBC is a life-threatening and incurable disease, and the goals of treatment are palliative in nature with the aim of prolonging survival and reducing cancer-related symptoms. Metastatic TNBC has a poor prognosis with an estimated median overall survival of approximately 13 months. Treatment options for patients who have received two or more prior regimens in the metastatic setting are limited. Hence, there is an unmet medical need for more effective therapies for the treatment of patients with advanced TNBC in this setting.

The clinical benefit of sacituzumab govitecan in the treatment of unresectable locally advanced or metastatic TNBC patients who have received two or more prior systemic therapies has been demonstrated based on statistically significant and clinically meaningful prolongation of PFS by IRC (median PFS 4.8 vs 1.7 months; HR 0.433; 95% CI: 0.347, 0.541; p<0.0001) and OS (median OS 11.8 vs 6.9 months; HR 0.508; 95% CI: 0.414, 0.624; p<0.0001) with sacituzumab govitecan compared to the control arm comprising chemotherapy regimens of the physician's choice (i.e., eribulin, capecitabine, gemcitabine or vinorelbine).

The ORR by IRC was also shown to be higher for sacituzumab govitecan than with chemotherapy (31.1% vs 4.2%; $p < 0.0001$). The median DOR was numerically longer with sacituzumab govitecan compared to chemotherapy control (6.3 vs 3.6 months).

The safety profile of sacituzumab govitecan is mainly characterised by high incidences of gastrointestinal AEs (diarrhoea, nausea, constipation, vomiting), myelosuppressive AEs (neutropenia and anaemia) as well as fatigue, alopecia, and decreased appetite, which are mostly known and expected AEs of cytotoxic drugs such as irinotecan. The most frequent treatment-related AEs in the sacituzumab govitecan group compared with the TPC group were neutropenia (63.2% vs 42.9%), diarrhoea (59.3% vs 12.1%), nausea (57.0% vs 26.3%), alopecia (46.1% vs 15.6%), fatigue (44.6% vs 30.4%), and anaemia (34.5% vs 24.1%).

Reduced UGT1A1 activity in patients who were homozygous for the UGT1A1*28 allele (i.e., *28/*28) has been associated with the increased incidences of certain AEs, such as neutropenia, febrile neutropenia, anaemia, and diarrhoea. Safety warnings on the increased risk of adverse reactions in these patients have been adequately described in the package insert.

The safety profile of sacituzumab govitecan is considered acceptable in the context of the serious and life-threatening nature of metastatic TNBC that has progressed after two or more therapies. The safety risks have been adequately described in the package insert, including recommendations for dose modifications for haematologic and non-haematologic toxicities.

Overall, sacituzumab govitecan has demonstrated a clinically meaningful and statistically significant improvement in PFS and OS compared with single-agent chemotherapy and the safety profile is acceptable for the disease condition. Hence, the benefit-risk profile of sacituzumab govitecan for the treatment of adult patients with unresectable locally advanced or metastatic TNBC who have received two or more prior systemic therapies is considered favourable.

F CONCLUSION

Based on the review of quality, safety and efficacy data, the benefits have been demonstrated to outweigh the risks of Trodelvy for the treatment of adult patients with unresectable locally advanced or metastatic TNBC who have received two or more prior systemic therapies, at least one of them for metastatic disease, and approval of the product registration was granted on 31 January 2022.

APPROVED PACKAGE INSERT AT REGISTRATION

2. INDICATIONS AND USAGE

TRODELVY is indicated for the treatment of adult patients with unresectable locally advanced or metastatic triple negative breast cancer (mTNBC) who have received two or more prior systemic therapies, at least one of them for metastatic disease.

3. DOSAGE AND ADMINISTRATION

3.1. Important Use Information

Do NOT substitute TRODELVY for or use with other drugs containing irinotecan or its active metabolite SN-38.

3.2. Recommended Dose and Schedule

The recommended dose of TRODELVY is 10 mg/kg administered as an intravenous infusion once weekly on Days 1 and 8 of 21-day treatment cycles. Continue treatment until disease progression or unacceptable toxicity. Do not administer TRODELVY at doses greater than 10 mg/kg.

Administer TRODELVY as an intravenous infusion only. Do not administer as an intravenous push or bolus.

First infusion: Administer infusion over 3 hours. Observe patients during the infusion and for at least 30 minutes following the initial dose, for signs or symptoms of infusion-related reactions [see *Warning and Precautions (5.3)*].

Subsequent infusions: Administer infusion over 1 to 2 hours if prior infusions were tolerated. Observe patients during the infusion and for at least 30 minutes after infusion.

Premedication

Prior to each dose of TRODELVY, premedication for prevention of infusion reactions and prevention of chemotherapy-induced nausea and vomiting (CINV) is recommended.

- Premedicate with antipyretics, H1 and H2 blockers prior to infusion, and corticosteroids may be used for patients who had prior infusion reactions.
- Premedicate with a two or three drug combination regimen (e.g., dexamethasone with either a 5-HT₃ receptor antagonist or an NK₁ receptor antagonist, as well as other drugs as indicated).

3.3. Dose Modifications for Adverse Reactions

Infusion-related Reactions

Slow or interrupt the infusion rate of TRODELVY if the patient develops an infusion-related reaction. Permanently discontinue TRODELVY for life-threatening infusion-related reactions [see *Warnings and Precautions (5.3)*].

Dose Modifications for Adverse Reactions

Withhold or discontinue TRODELVY to manage adverse reactions as described in Table 1. Do not re-escalate the TRODELVY dose after a dose reduction for adverse reactions has been made.

Table 1: Dose Modifications for Adverse Reactions

Adverse Reaction	Occurrence	Dose Modification
Severe Neutropenia [see Warnings and Precautions (5.1)]		
Grade 4 neutropenia ≥ 7 days, OR Grade 3 febrile neutropenia (absolute neutrophil count $< 1000/\text{mm}^3$ and fever $\geq 38.5^\circ\text{C}$), OR At time of scheduled treatment, Grade 3-4 neutropenia which delays dosing by 2 or 3 weeks for recovery to \leq Grade 1	First	25% dose reduction and administer granulocyte-colony stimulating factor (G-CSF)
	Second	50% dose reduction
	Third	Discontinue treatment
At time of scheduled treatment, Grade 3-4 neutropenia which delays dosing beyond 3 weeks for recovery to \leq Grade 1	First	Discontinue treatment
Severe Non-Neutropenic Toxicity		
Grade 4 non-hematologic toxicity of any duration, OR Any Grade 3-4 nausea, vomiting or diarrhea due to treatment that is not controlled with antiemetics and anti-diarrheal agents [see Warnings and Precautions (5.2, 5.4)], OR Other Grade 3-4 non-hematologic toxicity persisting > 48 hours despite optimal medical management, OR At time of scheduled treatment, Grade 3-4 non neutropenic hematologic or non-hematologic toxicity, which delays dose by 2 or 3 weeks for recovery to \leq Grade 1	First	25% dose reduction
	Second	50% dose reduction
	Third	Discontinue treatment
In the event of Grade 3-4 non-neutropenic hematologic or non-hematologic toxicity, which does not recover to \leq Grade 1 within 3 weeks	First	Discontinue treatment

3.4. Preparation and Administration

Reconstitution

- TRODELVY is a cytotoxic drug.
- Follow applicable special handling and disposal procedures for cytotoxic drug.
- Calculate the required dose (mg) of TRODELVY based on the patient's body weight at the beginning of each treatment cycle (or more frequently if the patient's body weight changed by more than 10% since the previous administration) [see Dosage and Administration (3.2)].
- Allow the required number of vials to warm to room temperature.
- Using a sterile syringe, slowly inject 20 mL of 0.9% Sodium Chloride Injection, USP, into each 180 mg TRODELVY vial. The resulting concentration will be 10 mg/mL.

- Gently swirl vials and allow to dissolve for up to 15 minutes. Do not shake. Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit. The solution should be free of visible particulates, clear and yellow. Do not use the reconstituted solution if it is cloudy or discolored.
- Use immediately to prepare a diluted TRODELVY infusion solution.

Dilution

- Calculate the required volume of the reconstituted TRODELVY solution needed to obtain the appropriate dose according to patient's body weight. Withdraw this amount from the vial(s) using a syringe. Discard any unused portion remaining in the vial(s).
- Adjust the volume in the infusion bag as needed with 0.9% Sodium Chloride Injection, USP, to obtain a concentration of 1.1 mg/mL to 3.4 mg/mL (total volume should not exceed 500 mL). For patients whose body weight exceeds 170 kg, divide the total dosage of TRODELVY equally between two 500 mL infusion bags and infuse sequentially via slow infusion.
- Slowly inject the required volume of reconstituted TRODELVY solution into a polyvinyl chloride, polypropylene, or ethylene/polypropylene copolymer infusion bag to minimize foaming. Do not shake the contents.
- Only 0.9% Sodium Chloride Injection, USP, should be used since the stability of the reconstituted product has not been determined with other infusion-based solutions. Use the diluted solution in the infusion bag immediately. If not used immediately, the infusion bag containing TRODELVY solution can be stored refrigerated 2°C to 8°C for up to 4 hours. After refrigeration, administer diluted solution within 4 hours (including infusion time).

Do Not Freeze or Shake. Protect from Light.

Administration

- Administer TRODELVY as an intravenous infusion. Protect infusion bag from light.
- An infusion pump may be used.
- Do not mix TRODELVY, or administer as an infusion, with other medicinal products.
- Upon completion of the infusion, flush the intravenous line with 20 mL 0.9% Sodium Chloride Injection, USP.

4. CONTRAINDICATIONS

TRODELVY is contraindicated in patients who have experienced a severe hypersensitivity reaction to TRODELVY [see *Warnings and Precautions* (5.3)].

5. WARNINGS AND PRECAUTIONS

5.1. Neutropenia

TRODELVY can cause severe or life-threatening neutropenia that may result in death. Neutropenia occurred in 62% of patients treated with TRODELVY, leading to permanent discontinuation of TRODELVY in 0.5% of patients. Grade 3-4 neutropenia occurred in 47% of patients. Febrile neutropenia occurred in 6% of patients.

Withhold TRODELVY for absolute neutrophil count below 1500/mm³ on Day 1 of any cycle or neutrophil count below 1000/mm³ on Day 8 of any cycle. Withhold TRODELVY for neutropenic fever. Dose

modifications may be required due to neutropenia [see *Dosage and Administration (3.3)*].

5.2. Diarrhea

TRODELVY can cause severe diarrhea. Diarrhea occurred in 64% of all patients treated with TRODELVY. Grade 3 diarrhea occurred in 12% of all patients treated with TRODELVY. Neutropenic colitis occurred in 0.5% of patients.

Withhold TRODELVY for Grade 3-4 diarrhea at the time of scheduled treatment administration and resume when resolved to \leq Grade 1 [see *Dosage and Administration (3.3)*].

At the onset of diarrhea, evaluate for infectious causes and if negative, promptly initiate loperamide, 4 mg initially followed by 2 mg with every episode of diarrhea for a maximum of 16 mg daily. Discontinue loperamide 12 hours after diarrhea resolves. Additional supportive measures (e.g., fluid and electrolyte substitution) may also be employed as clinically indicated.

Patients who exhibit an excessive cholinergic response to treatment with TRODELVY (e.g., abdominal cramping, diarrhea, salivation, etc.) can receive appropriate premedication (e.g., atropine) for subsequent treatments.

5.3. Hypersensitivity and Infusion-Related Reactions

TRODELVY can cause severe and life-threatening hypersensitivity. Anaphylactic reactions have been observed in clinical trials with TRODELVY [see *Contraindications (4)*].

Hypersensitivity reactions within 24 hours of dosing occurred in 37% of patients treated with TRODELVY. Grade 3-4 hypersensitivity occurred in 1% of patients treated with TRODELVY. The incidence of hypersensitivity reactions leading to permanent discontinuation of TRODELVY was 0.4%.

Pre-infusion medication for patients receiving TRODELVY is recommended. Observe patients closely for hypersensitivity and infusion-related reactions during each TRODELVY infusion and for at least 30 minutes after completion of each infusion [see *Dosage and Administration (3.3)*]. Medication to treat such reactions, as well as emergency equipment, should be available for immediate use.

5.4. Nausea and Vomiting

TRODELVY is emetogenic. Nausea occurred in 67% of all patients treated with TRODELVY. Grade 3-4 nausea occurred in 5% of patients.

Vomiting occurred in 40% of all patients treated with TRODELVY. Grade 3-4 vomiting occurred in 3% of these patients.

Premedicate with a two or three drug combination regimen (e.g., dexamethasone with either a 5-HT₃ receptor antagonist or an NK₁ receptor antagonist as well as other drugs as indicated) for prevention of chemotherapy-induced nausea and vomiting (CINV).

Withhold TRODELVY doses for Grade 3 nausea or Grade 3-4 vomiting at the time of scheduled treatment administration and resume with additional supportive measures when resolved to \leq Grade 1 [see *Dosage and Administration (3.3)*].

Additional antiemetics and other supportive measures may also be employed as clinically indicated. All patients should be given take-home medications with clear instructions for prevention and treatment of nausea and vomiting.

5.5. Increased Risk of Adverse Reactions in Patients with Reduced UGT1A1 Activity

SN-38 is metabolized predominantly by uridine diphosphate-glucuronosyl transferase (UGT1A1). It has been reported that patients who are homozygous (UGT1A1*6/*6 or UGT1A1*28/*28) or heterozygous (UGT1A1*6/*28) in allele UGT1A1*6, UGT1A1*28 of UGT may be at increased risk for serious adverse reactions (especially neutropenia) caused by reduced glucuronidation of SN-38. Added caution should be exercised when administering in such patients [see *Pharmacogenomics (10.4)*]. Patients homozygous for the UGT1A1*28 allele are also at increased risk for febrile neutropenia and anaemia; and may be at increased risk for other adverse reactions when treated with TRODELVY.

The incidence of neutropenia and anemia was analyzed in 577 patients who received TRODELVY and had UGT1A1 genotype results. In patients homozygous for the UGT1A1 *28 allele (n=70), the incidence of Grade 3-4 neutropenia was 69%. In patients heterozygous for the UGT1A1*28 allele (n=246), the incidence of Grade 3-4 neutropenia was 48%. In patients homozygous for the wild-type allele (n=261), the incidence of Grade 3-4 neutropenia was 46% [see *Clinical Pharmacology (10.4)*]. In patients homozygous for the UGT1A1 *28 allele (n=70), the incidence of Grade 3-4 anemia was 24%. In patients heterozygous for the UGT1A1*28 allele (n=246), the incidence of Grade 3-4 anemia was 8%. In patients homozygous for the wild-type allele (n=261), the incidence of Grade 3-4 anemia was 10%.

Closely monitor patients with known reduced UGT1A1 activity for adverse reactions. Withhold or permanently discontinue TRODELVY based on severity of the observed adverse reactions in patients with evidence of acute early-onset or unusually severe adverse reactions, which may indicate UGT1A1 reduced function [see *Dosage and Administration (3.3)*].

5.6. Embryo-Fetal Toxicity

Based on its mechanism of action, TRODELVY can cause teratogenicity and/or embryo-fetal lethality when administered to a pregnant woman. TRODELVY contains a genotoxic component, SN-38, and targets rapidly dividing cells [see *Clinical Pharmacology (10.1)* and *Nonclinical Toxicology (11.1)*]. Advise pregnant women and females of reproductive potential of the potential risk to a fetus. Advise females of reproductive potential to use effective contraception during treatment with TRODELVY and for 6 months after the last dose. Advise male patients with female partners of reproductive potential to use effective contraception during treatment with TRODELVY and for 3 months after the last dose [see *Use in Specific Populations (8.1, 8.3)*].

6. ADVERSE REACTIONS

The following adverse reactions are discussed in greater detail in other sections of the label:

- Neutropenia [see *Warnings and Precautions (5.1)*]
- Diarrhea [see *Warnings and Precautions (5.2)*]
- Hypersensitivity and Infusion-Related Reactions [see *Warnings and Precautions (5.3)*]
- Nausea and Vomiting [see *Warnings and Precautions (5.4)*]

6.1. Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in clinical practice.

The pooled safety population described in the Warnings and Precautions section reflect exposure to TRODELVY as a single agent in 660 patients from two studies, IMMU-132-01 and IMMU-132-05 which included 366 patients with mTNBC who had received prior systemic chemotherapy for advanced disease. TRODELVY was administered as an intravenous infusion once weekly on Days 1 and 8 of 21-day treatment cycles at doses of 10 mg/kg until disease progression or unacceptable toxicity. Among the 660 patients treated with TRODELVY, the median duration of treatment was 4.1 months (range: 0 to 51 months). In this pooled safety population, the most common (> 25%) adverse reactions were nausea, neutropenia, diarrhea, fatigue, alopecia, anemia, vomiting, constipation, rash, decreased appetite and abdominal pain.

ASCENT Study

The safety of TRODELVY was evaluated in a randomized, active-controlled, open-label trial (ASCENT) in patients with mTNBC who had previously received a taxane and at least two prior therapies. Patients were randomized (1:1) to receive either TRODELVY (n=258) or single agent chemotherapy (n=224) and were treated until disease progression or unacceptable toxicity [see *Clinical Studies (12)*]. For patients treated with TRODELVY, the median duration of treatment was 4.4 months (range: 0 to 23 months).

Serious adverse reactions occurred in 27% of patients receiving TRODELVY. Serious adverse reactions in > 1% of patients receiving TRODELVY included neutropenia (7%), diarrhea (4%), and pneumonia (3%). Fatal adverse reactions occurred in 1.2% of patients who received TRODELVY, including respiratory failure (0.8%) and pneumonia (0.4%). TRODELVY was permanently discontinued for adverse reactions in 5% of patients. Adverse reactions leading to permanent discontinuation in ≥ 1 % of patients who received TRODELVY were pneumonia (1%) and fatigue (1%).

Adverse reactions leading to a treatment interruption of TRODELVY occurred in 63% of patients. The most frequent ($\geq 5\%$) adverse reactions leading to a treatment interruption were neutropenia (47%), diarrhea (5%), respiratory infection (5%), and leukopenia (5%).

Adverse reactions leading to a dose reduction of TRODELVY occurred in 22% of patients. The most frequent (>4%) adverse reactions leading to a dose reduction were neutropenia (11%) and diarrhea (5%).

Granulocyte-colony stimulating factor (G-CSF) was used in 44% of patients who received TRODELVY.

Table 2 and Table 3 summarize adverse reactions and select laboratory abnormalities, respectively, in the ASCENT study.

Table 2: Adverse Reactions in ≥10% of Patients with mTNBC in ASCENT

Adverse Reaction	TRODELVY (n=258)		Single Agent Chemotherapy (n=224)	
	All Grades %	Grade 3 - 4 %	All Grades %	Grade 3 - 4 %
Blood and lymphatic system disorders				
Neutropenia ^I	64	52	44	34
Anemia ^{II}	40	9	28	6
Leukopenia ^{III}	17	11	12	6
Lymphopenia ^{IV}	10	2	6	2
Gastrointestinal disorders				
Diarrhea	59	11	17	1
Nausea	57	3	26	0.4
Vomiting	33	2	16	1
Constipation	37	0.4	23	0
Abdominal Pain	30	3	12	1
Stomatitis ^V	17	2	13	1
General disorders and administration site conditions				
Fatigue ^{VI}	65	6	50	9
Pyrexia	15	0.4	14	2
Infections and infestation				
Urinary tract infection	13	0.4	8	0.4
Upper respiratory tract infection	12	0	3	0
Investigations				
Alanine aminotransferase increased	11	1	10	1
Metabolism and nutrition disorders				
Decreased appetite	28	2	21	1
Hypokalemia	16	3	13	0.4
Hypomagnesaemia	12	0	6	0
Musculoskeletal and connective tissue disorders				
Back pain	16	1	14	2
Arthralgia	12	0.4	7	0
Nervous system disorders				
Headache	18	0.8	13	0.4
Dizziness	10	0	7	0
Psychiatric disorders				
Insomnia	11	0	5	0
Respiratory, thoracic and mediastinal disorders				
Cough	24	0	18	0.4
Skin and subcutaneous tissue disorders				
Alopecia	47	0	16	0
Rash	12	0.4	5	0.4

Adverse Reaction	TRODELVY (n=258)		Single Agent Chemotherapy (n=224)	
	All Grades %	Grade 3 - 4 %	All Grades %	Grade 3 - 4 %
Pruritus	10	0	3	0
<p>*Single agent chemotherapy included one of the following single-agents: eribulin (n=139), capecitabine (n=33), gemcitabine (n=38), or vinorelbine (except if patient had \geqGrade 2 neuropathy, n=52).</p> <p>Graded per NCI CTCAE v.5.0.</p> <p>i. Including neutropenia and neutrophil count decreased</p> <p>ii. Including anemia, hemoglobin decreased, and red blood cell count decreased</p> <p>iii. Including leukopenia and white blood cell count decreased</p> <p>iv. Including lymphopenia and lymphocyte count decreased</p> <p>v. Including stomatitis, glossitis, mouth ulceration, and mucosal inflammation</p> <p>vi. Including fatigue and asthenia</p>				

Table 3: Select Laboratory Abnormalities in >10% of Patients with mTNBC in ASCENT

Laboratory Abnormality	TRODELVY (n=258)		Single Agent Chemotherapy (n=224)	
	All Grades (%)	Grade 3 - 4 (%)	All Grades (%)	Grade 3 - 4 (%)
Decreased hemoglobin	94	9	57	6
Decreased leukocytes	86	41	53	25
Decreased neutrophils	78	49	48	36
Decreased lymphocytes	88	31	40	24
Decreased platelets	23	1.2	25	2.7

Study IMMU-132-01

The safety of TRODELVY was evaluated in a single-arm, open-label study (IMMU-132-01) in patients with mTNBC and other malignancies, which included 108 patients with mTNBC who had received at least two prior treatments for metastatic disease [see *Clinical Studies (14)*]. TRODELVY was administered as an intravenous infusion once weekly on Days 1 and 8 of 21-day treatment cycles at doses up to 10 mg/kg until disease progression or unacceptable toxicity. The median treatment duration in these 108 patients was 5.1 months (range: 0-51 months).

Serious adverse reactions occurred in 31% of the patients. Serious adverse reactions in >1% of patients receiving TRODELVY included febrile neutropenia (6%), vomiting (5%), nausea (3%), dyspnea (3%), diarrhea (4%), anemia (2%), pleural effusion, neutropenia, pneumonia, dehydration (each 2%).

TRODELVY was permanently discontinued for adverse reactions in 2% of patients. Adverse reactions leading to permanent discontinuation were anaphylaxis, anorexia/fatigue, headache (each 0.9%). Forty-five percent (45%) of patients experienced an adverse reaction leading to treatment interruption. The most common adverse reaction leading to treatment interruption was neutropenia (33%). Adverse reactions leading to dose reduction occurred in 33% of patients treated with TRODELVY, with 24% having one dose reduction, and 9% with two dose reductions. The most common adverse reaction leading to dose reductions was neutropenia/febrile neutropenia.

Adverse reactions occurring in $\geq 10\%$ of patients with mTNBC in the IMMU-132-01 study are summarized in Table 4.

Table 4: Adverse Reactions in $\geq 10\%$ of Patients with mTNBC in IMMU-132-01

Adverse Reaction	TRODELVY (n=108)	
	Grade 1-4 (%)	Grade 3-4 (%)
Any adverse reaction	100	71
Gastrointestinal disorders	95	21
Nausea	69	6
Diarrhea	63	9
Vomiting	49	6
Constipation	34	1
Abdominal pain ^I	26	1
Mucositis ^{II}	14	1
General disorders and administration site conditions	77	9
Fatigue ^{III}	57	8
Edema ^{IV}	19	0
Pyrexia	14	0
Blood and lymphatic system disorders	74	37
Neutropenia	64	43
Anemia	52	12
Thrombocytopenia	14	3
Metabolism and nutrition disorders	68	22
Decreased appetite	30	1
Hyperglycemia	24	4
Hypomagnesemia	21	1
Hypokalemia	19	2
Hypophosphatemia	16	9
Dehydration	13	5
Skin and subcutaneous tissue disorders	63	4
Alopecia	38	0
Rash ^V	31	3
Pruritus	17	0
Dry Skin	15	0
Nervous system disorders	56	4
Headache	23	1
Dizziness	22	0
Neuropathy ^{VI}	24	0
Dysgeusia	11	0

Adverse Reaction	TRODELVY (n=108)	
	Grade 1-4 (%)	Grade 3-4 (%)
Infections and infestations	55	12
Urinary Tract Infection	21	3
Respiratory Infection ^{VII}	26	3
Musculoskeletal and connective tissue disorders	54	1
Back pain	23	0
Arthralgia	17	0
Pain in extremity	11	0
Respiratory, thoracic and mediastinal disorders	54	5
Cough ^{VIII}	22	0
Dyspnea ^{IX}	21	3
Psychiatric disorders	26	1
Insomnia	13	0

Graded per NCI CTCAE v.4.0

i. Including abdominal pain, distention, pain (upper), discomfort, tenderness

ii. Including stomatitis, esophagitis, and mucosal inflammation

iii. Including fatigue and asthenia

iv. Including edema; and peripheral, localized, and periorbital edema

v. Including rash; maculopapular, erythematous, generalized rash; dermatitis acneiform; skin disorder, irritation, and exfoliation

vi. Including gait disturbance, hypoesthesia, muscular weakness, paresthesia, peripheral and sensory neuropathy

vii. Including lower and upper respiratory tract infection, pneumonia, influenza, viral upper respiratory infection, bronchitis and respiratory syncytial virus infection

viii. Includes cough and productive cough

ix. Includes dyspnea and exertional dyspnea

Table 5: Laboratory Abnormalities Observed in ≥10% of Patients while Receiving TRODELVY

Laboratory Abnormality	TRODELVY (n=108)	
	All Grades (%)	Grade 3-4 (%)
Hematology		
Decreased hemoglobin	93	6
Decreased leukocytes	91	26
Decreased neutrophils	82	32
Increased activated partial thromboplastin time	60	12
Decreased platelets	30	3
Chemistry		
Increased alkaline phosphatase	57	2
Decreased magnesium	51	3

Laboratory Abnormality	TRODELVY (n=108)	
	All Grades (%)	Grade 3-4 (%)
Decreased calcium	49	3
Increased glucose	48	3
Increased aspartate aminotransferase	45	3
Decreased albumin	39	1
Increased alanine aminotransferase	35	2
Decreased potassium	30	3
Decreased phosphate	29	5
Decreased sodium	25	4.7
Increased magnesium	24	4
Decreased glucose	19	2

6.2. Immunogenicity

As with all therapeutic proteins, there is potential for immunogenicity. The detection of antibody formation is highly dependent on the sensitivity and specificity of the assay. Additionally, the observed incidence of antibody (including neutralizing antibody) positivity in an assay may be influenced by several factors including assay methodology, sample handling, timing of sample collection, concomitant medications, and underlying disease. For these reasons, comparison of the incidence of antibodies in the studies described below with the incidence of antibodies in other studies or to other sacituzumab govitecan products may be misleading.

The analysis of immunogenicity of TRODELVY in serum samples from 106 patients with mTNBC was evaluated using an electrochemiluminescence (ECL)-based immunoassay to test for anti-Sacituzumab govitecan antibodies. Detection of the anti-sacituzumab govitecan antibodies was done using a 3-tier approach: screen, confirm, and titer. Persistent anti-sacituzumab govitecan antibodies developed in 2% (2/106) of patients.

7. DRUG INTERACTIONS

7.1. Effect of Other Drugs on TRODELVY

UGT1A1 Inhibitors

Concomitant administration of TRODELVY with inhibitors of UGT1A1 may increase the incidence of adverse reactions due to potential increase in systemic exposure to SN-38 [see *Warning and Precaution (5.5) and Clinical Pharmacology (10.3, 10.4)*]. Avoid administering UGT1A1 inhibitors with TRODELVY.

UGT1A1 Inducers

Exposure to SN-38 may be substantially reduced in patients concomitantly receiving UGT1A1 enzyme inducers [see *Warning and Precaution (5.5) and Clinical Pharmacology (10.3, 10.4)*]. Avoid administering UGT1A1 inducers with TRODELVY.

8. USE IN SPECIFIC POPULATIONS

8.1. Pregnancy

Risk Summary

Based on its mechanism of action, TRODELVY can cause teratogenicity and/or embryo-fetal lethality when administered to a pregnant woman. There are no available data in pregnant women to inform the drug-associated risk. TRODELVY contains a genotoxic component, SN-38, and is toxic to rapidly dividing cells [see *Clinical Pharmacology (10.1)* and *Nonclinical Toxicology (11.1)*]. Advise pregnant women and females of reproductive potential of the potential risk to a fetus.

The estimated background risk of major birth defects and miscarriage for the indicated population is unknown. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2 – 4% and 15 – 20%, respectively.

Data

Animal data

There were no reproductive and developmental toxicology studies conducted with Sacituzumab govitecan.

8.2. Lactation

Risk Summary

There is no information regarding the presence of Sacituzumab govitecan or SN-38 in human milk, the effects on the breastfed child, or the effects on milk production. Because of the potential for serious adverse reactions in a breastfed child, advise women not to breastfeed during treatment and for 1 month after the last dose of TRODELVY.

8.3. Females and Males of Reproductive Potential

Pregnancy Testing

Verify the pregnancy status of females of reproductive potential prior to the initiation of TRODELVY.

Contraception

Females

TRODELVY can cause fetal harm when administered to a pregnant woman [see *Use in Specific Populations (8.1)*]. Advise females of reproductive potential to use effective contraception during treatment with TRODELVY and for 6 months after the last dose.

Males

Because of the potential for genotoxicity, advise male patients with female partners of reproductive potential to use effective contraception during treatment with TRODELVY and for 3 months after the last dose.

Infertility

Females

Based on findings in animals, TRODELVY may impair fertility in females of reproductive potential [see *Nonclinical Toxicology (11.1)*].

8.4. Pediatric Use

Safety and effectiveness of TRODELVY have not been established in pediatric patients.

8.5. Geriatric Use

Of the patients who received TRODELVY, 28% of all patients were ≥ 65 years old. No overall differences in safety and effectiveness were observed between these patients and younger patients.

8.6. Hepatic Impairment

No adjustment to the starting dose is required when administering TRODELVY to patients with mild hepatic impairment (bilirubin ≤ 1.5 ULN and AST/ALT < 3 ULN).

The exposure of TRODELVY in patients with mild hepatic impairment (bilirubin \leq ULN and AST $>$ ULN, or bilirubin >1.0 to ≤ 1.5 ULN and AST of any level; n= 59) was similar to patients with normal hepatic function (bilirubin or AST $<$ ULN; n=191).

The safety of TRODELVY in patients with moderate or severe hepatic impairment has not been established. TRODELVY has not been tested in patients with any of the following: serum bilirubin > 1.5 ULN, AST or ALT > 3 ULN in patients without liver metastases, or AST or ALT > 5 ULN in patients with liver metastases.

No dedicated trial was performed to investigate the tolerability of TRODELVY in patients with moderate or severe hepatic impairment. No recommendations can be made for the starting dose in these patients.

9. OVERDOSAGE

In a clinical trial, planned doses of up to 18 mg/kg (approximately 1.8 times the maximum recommended dose of 10 mg/kg) of TRODELVY were administered. In these patients, a higher incidence of severe neutropenia was observed.

10. CLINICAL PHARMACOLOGY

10.1. Mechanism of Action

Sacituzumab govitecan is a Trop-2-directed antibody-drug conjugate. Sacituzumab is a humanized antibody that recognizes Trop-2. The small molecule, SN-38, is a topoisomerase I inhibitor, which is covalently attached to the antibody by a linker. Pharmacology data suggest that sacituzumab govitecan binds to Trop-2-expressing cancer cells and is internalized with the subsequent release of SN-38 via hydrolysis of the linker. SN-38 interacts with topoisomerase I and prevents re-ligation of topoisomerase I-induced single strand breaks. The resulting DNA damage leads to apoptosis and cell death. Sacituzumab govitecan decreased tumor growth in mouse xenograft models of triple-negative breast cancer.

ATC code: L01FX17.

10.2. Pharmacodynamics

The TRODELVY exposure-response relationships and pharmacodynamic time-course for efficacy have not been fully characterized.

Cardiac electrophysiology

The maximum mean change from baseline was 9.7 msec (the upper bound of the two-sided 90% confidence interval is 16.8 msec) at the recommended dose. A positive exposure-response relationship was observed between QTc increases and SN-38 concentrations.

10.3. Pharmacokinetics

The serum pharmacokinetics of sacituzumab govitecan and SN-38 were evaluated in study IMMU132-05 in a population of mTNBC patients who received sacituzumab govitecan as a single agent at a dose of 10 mg/kg. The pharmacokinetic parameters of sacituzumab govitecan and free SN-38 are presented in Table 6.

Table 6: Summary of Mean PK Parameters (CV%) of Sacituzumab Govitecan and Free SN-38

	Sacituzumab Govitecan	Free SN-38
C _{max} [ng/mL]	240000 (22.2%)	90.6 (65.0%)
AUC ₀₋₁₆₈ [h ng/mL]	5340000 (23.7%)	2730 (41.1%)

C_{max}: maximum serum concentration

AUC₀₋₁₆₈: area under serum concentration curve through 168 hours

Distribution

Based on population pharmacokinetic analysis, the central volume distribution of sacituzumab govitecan is 2.96 L.

Elimination

The mean half-life of sacituzumab govitecan and free SN-38 was 15.3 and 19.7 hours, respectively. Based on population pharmacokinetic analysis, the clearance of the sacituzumab govitecan is 0.14 L/h.

Metabolism

No metabolism studies with sacituzumab govitecan have been conducted. SN-38 (the small molecule moiety of sacituzumab govitecan) is metabolized via UGT1A1. The glucuronide metabolite of SN-38 (SN-38G) was detectable in the serum of patients.

Specific Populations

Pharmacokinetic analyses in patients treated with TRODELVY (n=527) did not identify an effect of age, race, or mild renal impairment on the pharmacokinetics of sacituzumab govitecan. Renal elimination is known to contribute minimally to the excretion of SN-38, the small molecule moiety of sacituzumab govitecan. There are no data on the pharmacokinetics of sacituzumab govitecan in patients with moderate renal impairment or end-stage renal disease (CL_{cr} ≤30 mL/min).

The exposure of sacituzumab govitecan is similar in patients with mild hepatic impairment (bilirubin ≤ULN and AST >ULN, or bilirubin >1.0 to ≤1.5 ULN and AST of any level; n=59) to patients with normal hepatic function (bilirubin or AST <ULN; n=191).

Sacituzumab govitecan exposure is unknown in patients with moderate or severe hepatic impairment. SN-38 exposure may be elevated in such patients due to decreased hepatic UGT1A1 activity.

Drug Interaction Studies

No drug-drug interaction studies were conducted with sacituzumab govitecan or its components. Inhibitors or inducers of UGT1A1 are expected to increase or decrease SN-38 exposure, respectively [see *Drug Interactions (7)*].

10.4. Pharmacogenomics

SN-38 is metabolized via UGT1A1 [see *Clinical Pharmacology (10.3)*]. Genetic variants of the UGT1A1 gene such as the UGT1A1*6 and UGT1A1*28 allele lead to reduced UGT1A1 enzyme activity. It has been reported that patients who are homozygous (UGT1A1*6/*6 or UGT1A1*28/*28) or heterozygous (UGT1A1*6/*28) in allele UGT1A1*6, UGT1A1*28 of UGT may be at increased risk for serious adverse reactions (especially neutropenia) caused by reduced glucuronidation of SN-38. Individuals who are homozygous for the UGT1A1*28 allele are also at increased risk for febrile neutropenia and anaemia from TRODELVY [see *Warnings and Precautions (5.5)*]. Approximately 20% of the Black or African American population, 10% of the White population, and 2% of the East Asian population are homozygous for the UGT1A1*28 allele. Decreased function alleles other than UGT1A1*28 and UGT1A1*6 may be present in certain populations.

11. NONCLINICAL TOXICOLOGY

11.1. Carcinogenesis, Mutagenesis, Impairment of Fertility

Carcinogenicity studies have not been conducted with sacituzumab govitecan.

SN-38 was clastogenic in an in vitro mammalian cell micronucleus test in Chinese hamster ovary cells and was not mutagenic in an in vitro bacterial reverse mutation (Ames) assay.

Fertility studies with sacituzumab govitecan have not been conducted. In a repeat-dose toxicity study in cynomolgus monkeys, intravenous administration of sacituzumab govitecan on Day 1 and Day 4 resulted in endometrial atrophy, uterine hemorrhage, increased follicular atresia of the ovary, and atrophy of vaginal epithelial cells at doses ≥ 60 mg/kg (≥ 6 times the human recommended dose of 10 mg/kg based on body weight).

12. CLINICAL STUDIES

ASCENT

Efficacy was evaluated in a multicenter, open-label, randomized study (ASCENT; NCT02574455) conducted in 529 patients with unresectable locally advanced or metastatic triple-negative breast cancer (mTNBC) who had relapsed after at least two prior chemotherapies for breast cancer (one of which could be in the neoadjuvant or adjuvant setting provided progression occurred within a 12-month period). All patients received previous taxane treatment in either the adjuvant, neoadjuvant, or advanced stage unless there was a contraindication or intolerance to taxanes during or at the end of the first taxane cycle. Magnetic resonance imaging (MRI) to determine brain metastases was required prior to enrollment for patients with known or suspected brain metastases. Patients with brain metastases were allowed to enroll up to a predefined maximum of 15% of patients in the ASCENT trial. Patients with known Gilbert's disease or bone-only disease were excluded.

Patients were randomized (1:1) to receive TRODELVY 10 mg/kg as an intravenous infusion on Days 1 and 8 of a 21-day (n=267) or physician's choice of single agent chemotherapy (n=262). Single agent chemotherapy was determined by the investigator before randomization from one of the following choices: eribulin (n=139), capecitabine (n=33), gemcitabine (n=38), or vinorelbine (n=52).

Patients were treated until disease progression or unacceptable toxicity. The major efficacy outcome was

progression-free survival (PFS) in patients without brain metastases at baseline (i.e., BMNeg) as measured by a blinded, independent, centralized review assessed using Response Evaluation Criteria in Solid Tumors (RECIST) v1.1 criteria. Additional efficacy measures included PFS for the full population (all patients with and without brain metastases) and overall survival (OS).

The median age of patients in the full population (n = 529) was 54 years (range: 27–82 years); 99.6% were female; 79% were White, 12% were Black/African American; and 81% of patients were < 65 years of age. All patients had an ECOG performance status of 0 (43%) or 1 (57%). Forty-two percent of patients had hepatic metastases, 9% were BRCA1/BRCA2 mutational status positive, and 70% were TNBC at diagnosis. Twelve percent had baseline brain metastases previously treated and stable (n=61; 32 on TRODELVY arm and 29 on single agent chemotherapy arm).

Overall, 29% of patients had received prior PD-1/PD-L1 therapy. Thirteen percent of patients in the TRODELVY group in the full population received only 1 prior line of systemic therapy in the metastatic setting.

The efficacy results are summarized in Table 7 and are shown in Figure 1 and Figure 2. Efficacy results for the subgroup of patients who had received only 1 prior line of systemic therapy in the metastatic setting (in addition to having disease recurrence or progression within 12 months of neoadjuvant/adjuvant systemic therapy) were consistent with those who had received at least two prior lines in the metastatic setting.

Table 7: Efficacy Results from ASCENT

	All Randomized Patients	
	TRODELVY n=267	Single Agent Chemotherapy n=262
Progression-Free Survival¹ per BICR		
Disease Progression or Death (%)	190 (71%)	171 (65%)
Median PFS in months (95% CI)	4.8 (4.1, 5.8)	1.7 (1.5, 2.5)
Hazard ratio ² (95% CI)	0.43 (0.35, 0.54)	
p-value	<0.0001	
Overall Survival		
Deaths (%)	179 (67%)	206 (79%)
Median OS in months (95% CI)	11.8 (10.5, 13.8)	6.9 (5.9, 7.6)
Hazard ratio ² (95% CI)	0.51 (0.41, 0.62)	
p-value	<0.0001	

¹ PFS is defined as the time from the date of randomization to the date of the first radiological disease progression or death due to any cause, whichever comes first.

² Stratified log-rank test adjusted for stratification factors: number of prior chemotherapies, presence of known brain metastases at study entry, and region.

CI = Confidence Interval

Figure 1: Kaplan-Meier Plot of PFS by BICR (All Randomized Patients) in ASCENT

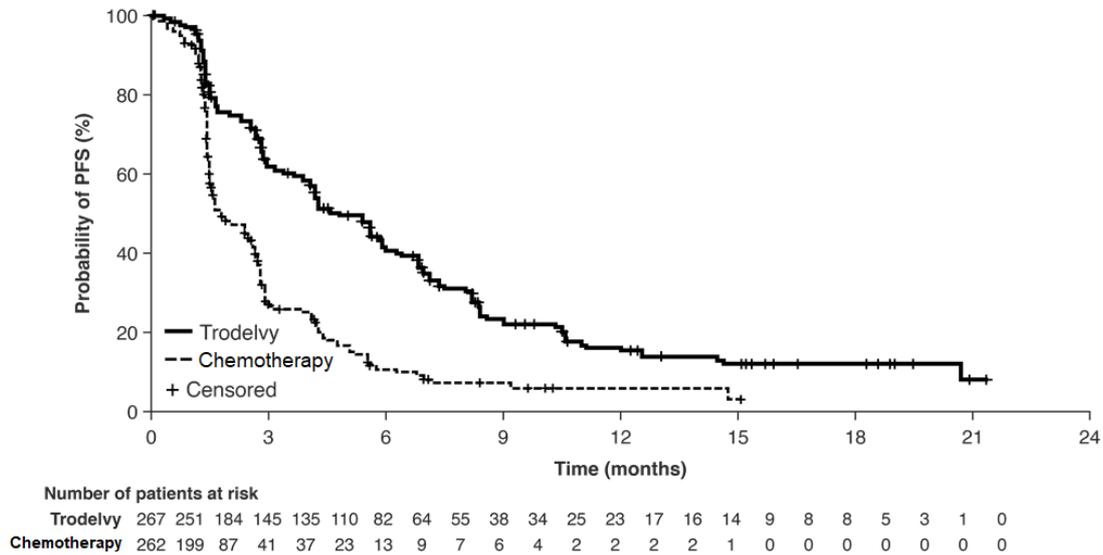
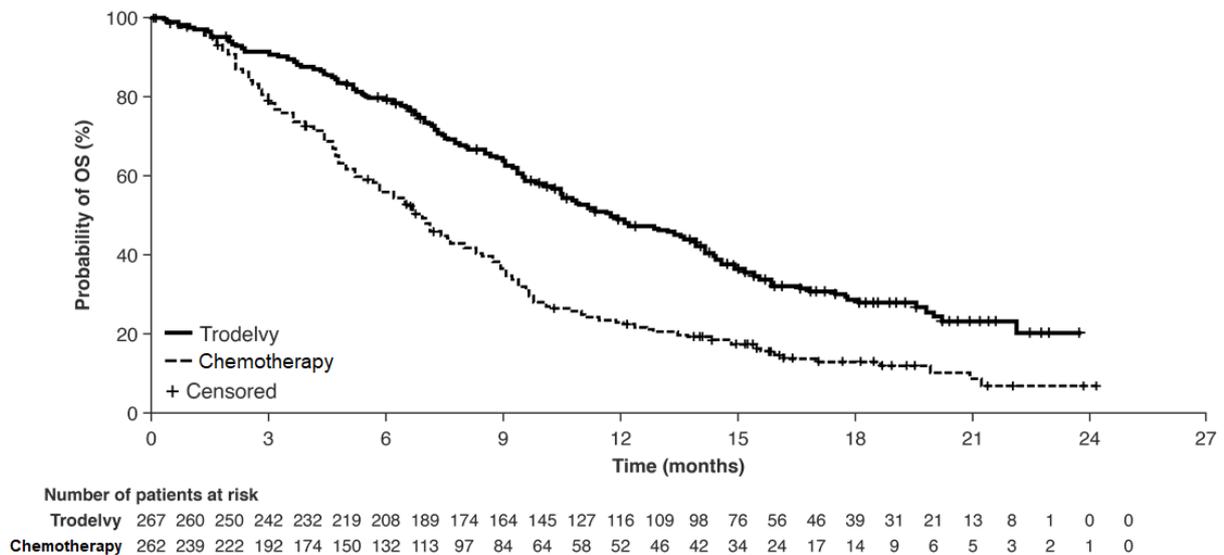


Figure 2: Kaplan-Meier Plot of OS (All Randomized Patients) in ASCENT



An exploratory analysis of PFS in patients with previously treated, stable brain metastases showed a stratified HR of 0.65 (95% CI: 0.35, 1.22). The median PFS in the TRODELVY arm was 2.8 months (95% CI: 1.5, 3.9) and the median PFS with single agent chemotherapy was 1.6 months (95% CI: 1.3, 2.9). Exploratory OS analysis in the same population showed a stratified HR of 0.87 (95% CI: 0.47, 1.63). The median OS in the TRODELVY arm was 6.8 months (95% CI: 4.7, 14.1) and the median OS with single agent chemotherapy was 7.4 months (95% CI: 4.7, 11.1).

The efficacy of TRODELVY was evaluated in a multicenter, single-arm, trial (NCT01631552) that enrolled 108 patients with metastatic triple-negative breast cancer (mTNBC) who had received at least two prior treatments for metastatic disease. Patients with bulky disease, defined as a mass >7 cm, were not eligible. Patients with treated brain metastases not receiving high dose steroids (>20 mg prednisone or equivalent) for at least four weeks were eligible. Patients with known Gilbert’s disease were excluded.

Patients received TRODELVY 10 mg/kg intravenously on Days 1 and 8 of a 21-day treatment cycle. Patients were treated with TRODELVY until disease progression or intolerance to the therapy. Tumor imaging was obtained every 8 weeks, with confirmatory CT/MRI scans obtained 4-6 weeks after an initial partial or complete response, until progression requiring treatment discontinuation. Major efficacy outcome measures were investigator assessed overall response rate (ORR) using RECIST v1.1 and duration of response.

The median age was 55 years (range: 31 – 80 years); 87% of patients were younger than 65 years. The majority of patients were female (99%), and White (76%). At study entry, all patients had an ECOG performance status of 0 (29%) or 1 (71%). Seventy-six percent had visceral disease, 42% had hepatic metastases, 56% had lung/pleura metastases, and 2% had brain metastases. Twelve patients (11%) had Stage IV disease at the time of initial diagnosis.

The median number of prior systemic therapies received in the metastatic setting was 3 (range: 2 - 10). Prior chemotherapies in the metastatic setting included carboplatin or cisplatin (69%), gemcitabine (55%), paclitaxel or docetaxel (53%), capecitabine (51%), eribulin (45%), doxorubicin (24%), vinorelbine (16%), cyclophosphamide (19%), and ixabepilone (8%).

Overall, 98% of patients had received prior taxanes and 86% had received prior anthracyclines either in the (neo)adjuvant or metastatic setting.

Table 8 summarizes the efficacy results.

Table 8: Efficacy Results for Patients with mTNBC in IMMU-132-01

	TRODELVY (N=108)
Overall Response Rateⁱ	
ORR (95% CI)	33.3% (24.6, 43.1)
Complete response	2.8%
Partial response	30.6%
Response durationⁱ	
Number of responders	36
Median, Months (95% CI)	7.7 (4.9, 10.8)
Range, Months	1.9+, 30.4+
% with duration ≥ 6 months	55.6%
% with duration ≥ 12 months	16.7%

ⁱ investigator assessment
 CI: Confidence Interval
 +: denotes ongoing

13.SHELF LIFE

3 years.

Reconstituted solution should be diluted immediately with 0.9% Sodium Chloride Injection, USP.

If diluted solution is not used immediately, the infusion bag containing TRODELVY solution can be stored refrigerated 2°C to 8°C for up to 4 hours. After refrigeration, administer diluted solution within 4 hours (including infusion time).

14.SPECIAL PRECAUTIONS FOR STORAGE

Store vials in a refrigerator at 2°C to 8°C in the original carton to protect from light until time of reconstitution. Do not freeze.

TRODELVY is a cytotoxic drug. Follow applicable special handling and disposal procedures.

15.HOW SUPPLIED

Each vial contains 180 mg sacituzumab govitecan.

15.1. List of excipients

- 2-(N-morpholino) ethane sulfonic acid (MES) 77.3mg
- Polysorbate 80 1.8mg
- Trehalose dihydrate 154mg

No preservatives added.

15.2. Pack sizes

TRODELVY is supplied in as single-vial carton containing 180 mg sacituzumab govitecan.

16.PRODUCT REGISTRANT

Everest Medicines (Singapore) Pte. Ltd.
30 Cecil Street, #19-08
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Singapore 049712

17.DATE OF REVISION OF THE TEXT

January 2022