Talimogene laherparepvec (T-VEC or Imlygic®) Intralesional Therapy

Talimogene laherparepvec (Imlygic®; T-VEC) is a first-in-class oncolytic viral immunotherapy approved by the Food and Drug Administration (FDA) in 2015 as intralesional treatment of unresectable cutaneous, subcutaneous, and/or nodal melanoma that cannot be surgically removed.

This document is part of an overall HCP toolkit intended to assist healthcare providers in optimizing the care of patients receiving T-VEC.

PREPARATION AND HANDLING

T-VEC is a live, attenuated virus. Consequently, there are exposure and transmission risks to health care personnel and family members/caregivers.

- Healthcare providers who are immunocompromised or pregnant should not prepare or administer T-VEC and should avoid direct contact with the T-VEC injection site, dressings, or body fluids of treated patients.
- Those preparing and/or administering T-VEC should wear protective clothing and avoid accidental exposure.
- Clean all surfaces that may have come into contact with T-VEC and treat all
    - T-VEC spills with a virucidal agent and blot using absorbent materials. Dispose contaminated materials as biohazardous waste.
- Similarly, caregivers/family members should be instructed to wear protective gloves when assisting patients to apply or change occlusive dressings and should put used dressings, gloves, and cleaning materials in a sealed plastic bag and dispose of the bag in the regular trash.

STORAGE, DRUG-DOSING/ADMINISTRATION

- T-VEC can be kept in stock but must be stored in a freezer to maintain temperature at -90
  - °C to 70 °C. If an ultra-low freezer is not available, Amgen can provide access to one (1-866-IMLYGIC).
- For more immediate procurement, you can also use the IMLYGIC just-in-time delivery system. This allows you to keep T-VEC in the original shipping container for up to 96 hours after it is sealed for delivery.
- Thawing of T-VEC vials requires about 30–45 minutes. Ideally, IMLYGIC should be thawed immediately prior to administration. The lower dose of T-VEC can be refrigerated for up to 12 hours; the higher dose can be refrigerated for up to 48 hours.
- T-VEC is administered by intralesional injection into cutaneous, subcutaneous, and/or nodal lesions that are visible, palpable, or detectable by ultrasound.
- T-VEC is available in single-use vials of 1 mL that contain either 10^6 (1 million) or 10^8 (100 million) PFU/mL.

◊ The lower T-VEC concentration (10^6 or 1 million PFU/mL) is used for the initial dose. The higher T-VEC concentration (10^8 or 100 million PFU/mL) should be used for the second and all subsequent treatments. The second treatment occurs 3 weeks after initial treatment and all subsequent lesions occur 2 weeks after previous treatment.

◊ Inject lesion(s) from largest to smallest until either all lesions are injected or a maximum injection volume of 4 mL is reached for the treatment session. The volume per lesion size is shown the table at right (you may not be able to inject every lesion at each treatment session).

◊ At the first treatment session, lesions are injected in size order from largest to smallest or until the maximum dose is reached. Thereafter, the HCP should treat any new lesions first, then inject in size order starting with the largest lesion.

T-VEC Injection Volume Per Lesion Size

Lesion size (longest dimension)	Injection volume
> 5 cm	Up to 4 mL
> 2.5 cm to 5 cm	Up to 2 mL
> 1.5 cm to 2.5 cm	Up to 1 mL
> 0.5 cm to 1.5 cm	Up to 0.5 mL
≤ 0.5 cm	Up to 0.1 mL

Closely clustered lesions can be measured as a single lesion.

STORAGE, DRUG-DOSING/ADMINISTRATION

- Using a single insertion point, the injection should be made on multiple radial tracks, rotating and pulling the needle back to achieve even and complete dispersion (see diagram).

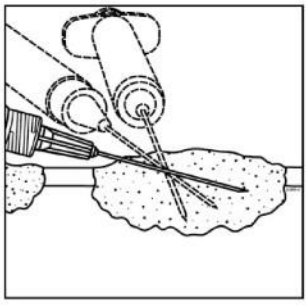

Figure 1: Injection administration for cutaneous lesions

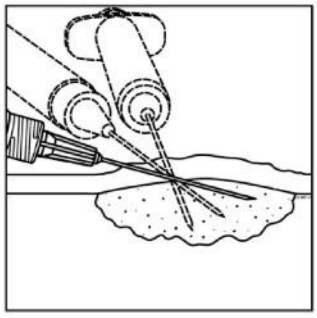

Figure 2: Injection administration for subcutaneous lesions

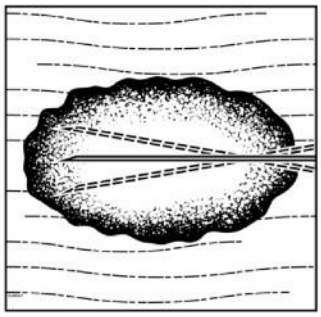

Figure 3: Injection administration for nodal lesions

- To prevent drug leakage, securely attach the needle to syringe prior to injection and slowly withdraw the needle after T-VEC is fully injected.
- Slow and steady pressure should be applied to the syringe. This helps if the lesion is difficult to inject or prone to drug leakage.

SIDE EFFECTS AND THEIR MANAGEMENT

Management strategies for preventing and managing T-VEC–related adverse events are outlined in the Care Step Pathway below. The most commonly reported adverse events include constitutional or administration site symptoms (fatigue, chills, pyrexia, influenza-like illness, and injection site pain) and gastrointestinal disorders (nausea and vomiting). Herpetic infections (cold sores and ocular herpetic infection) have also been reported in T-VEC–treated patients. The most commonly reported grade 3 adverse event is cellulitis, with an incidence of 2%.

- T-VEC is contraindicated in immunocompromised or pregnant patients.
- HCPs should contact patients 1–2 days after the first T-VEC injection to assess treatment tolerability and provide counsel about AE recognition and management. Follow-up phone calls and/or visits are important for continued monitoring and management of potential drug- related adverse events.
- If the patient reports pain with injection after topical anesthetic, ice packs may be applied to the site for 5 to 10 minutes. If the pain persists, injection of 1% lidocaine around the lesion periphery may be considered.
    - Local anesthetic should NOT be injected into the lesion itself, as this may affect T-VEC stability and efficacy.

QUESTIONS & ANSWERS

Q. What should I tell a patient who is concerned about sharing a shower, toothbrush, dishes, or laundry facilities with other people? Is there a transmission risk?

A. Advise the patient that there is not a risk unless he/she has uncovered, draining lesions or leaves used dressing materials where others could come in contact with them. All lesions must be covered with an airtight and watertight dressing for 1 week after injection. Draining lesions must remain covered with an airtight and watertight dressing until they are no longer draining. Dressing should be changed once a week.

Q. What should I tell a patient to do if the lesion is oozing? Is this a transmission risk?

A. There is little risk of transmission as long as the lesions remain covered and no one who is pregnant or has a weakened immune system comes into contact with the lesions. Draining lesions must remain covered with an airtight and watertight dressing until they are no longer draining. Dressing should be changed once a week.

Q. How do I advise a patient who is concerned when a lesion leaks on a counter surface or a bandage with drainage touches the bathroom vanity? How should the patient clean it up?

A. You can advise the patient to put on gloves and wipe down the surface with a 1:10 bleach solution. Instructions on how to make such a solution are available at https://www.verywell.com/make-your-own-disinfectant-solution-998274. Advise the patient to use disposable materials for wiping, place them in a sealed plastic bag, and throw them in the household trash.

PATIENT RESOURCES

ADDITIONAL INFORMATION RESOURCES

AIM at Melanoma Foundation (Ask an Expert program, patient symposia, drug resources, etc)
https://www.aimatmelanoma.org/

American Cancer Society
https://www.cancer.org

FINANCIAL ASSISTANCE

Amgen
Amgenassistonline.com
1-888-4ASSIST

Cancer Financial Aid Coalition
Facilitates communication, educates and advocates for patients.
www.cancerfac.org

Centers for Medicare and Medicaid Services (CMS)
Apply to determine if you are eligible for government assistance.
www.cms.gov or www.medicare.gov
800-633-4227

Lazarex Foundation
Provides assistance with travel costs for clinical trial participation. Ask your social work counselor for a referral if you have been consented to a clinical trial for melanoma.
www.lazarex.org

Needymeds
Database to search for free or low-cost medications, help with medical transportation and other resources.
www.needymeds.org

Patient Advocate Foundation
Provides assistance with mediation, financial stability, and other assistance. Funds subject to availability. Patient must meet their eligibility for financial assistance.
www.patientadvocate.org
800-532-5274

The Sam Fund for Young Adult Survivors of Cancer
Assists cancer survivors ages 21-39 with their transition into post-treatment life. This program distributes grants and scholarships in an effort to enable survivors to pursue goals.
www.thesamfund.org
info@thesamfund.org

PRESCRIPTION ASSISTANCE

CancerCare Co-Payment Assistance Foundation
Helps with the cost of medication. Availability of funds for patients with Stage IV melanoma subject to availability.
www.cancercarecopay.org
1-866-552-6729

Medicine Assistance Tool
Database to search for patient assistance resources offered by pharmaceutical companies.
www.medicineassistancetool.org/

Patient Advocate Foundation Co-Pay Relief
Provides direct financial support to patients who medically qualify. Availability of funds for patients with Stage IV melanoma subject to availability.
www.copays.org
1-866-512-3861

Good Days
Formerly known as the Chronic Disease Fund. Provides assistance with insurance co-pays, and prescription medications. Availability of funds for patients with Stage IV melanoma subject to availability.
www.mygooddays.org

HealthWell Foundation
For patients who cannot afford insurance premiums, co-payments, co-insurance, or other out-of-pocket health care costs. Availability of funds for patients with Stage IV melanoma subject to availability. Patient must also meet eligibility for financial assistance.
www.healthwellfoundation.org or
grants@healthwellfoundation.org
1-800-675-8416

The Assistance Fund, Inc
Provides prescription copay and financial assistance, including health insurance premiums. Availability of funds for patients with Stage IV melanoma subject to availability.
www.theassistancefund.org
1-855-845-3663

PAN Foundation
Provides financial assistance to cover out-of-pocket treatment costs. Availability of funds for patients with Stage IV melanoma subject to availability.
www.panfoundation.org
1-866-316-PANF (7263)

Patient Assistance Program
Comprehensive database of patient assistance programs offering free medications.
www.rxassist.org
info@rxassist.org

HOUSING

American Cancer Society – Hope Lodge
Provides free housing during treatment appointments. Requires a referral from your social worker.
www.cancer.org/
1-800-227-6333

TRANSPORTATION (AIR AND GROUND)

Medicaid
Ground transportation only. Sets up rides and provides mileage reimbursement for Medicaid patients only.
1-877-633-8747

Mercy Medical Angels
Provides free medical transportation (flights, gas cards, bus and train tickets) for patients with financial needs who need to travel more than 50 miles. Patients must meet their eligibility for financial assistance.
www.mercymedical.org/

Pilots for Patients
Provides free flights to people in need of medical treatment. Patient must be medically stable to fly and be ambulatory. Ask your social worker about a referral.
www.pilotsforpatients.org
318-322-5112

ADDITIONAL RESOURCES

- Gangi A, Zager JS. The safety of talimogene laherparepvec for the treatment of advanced melanoma. *Expert Opin Drug Saf*. 2017;16:265-269.
- Hoffner B, Iodice GM, Gasal E. Administration and handling of talimogene laherparepvec: an intralesional oncolytic immunotherapy for melanoma. *Oncol Nurs Forum*. 2016;43:219-226.
- Imlygic® [prescribing information]. Thousand Oaks, CA: Amgen Inc; 2017.
- Imlygic® Clinical Overview and Handling Guide. Available at: http://www.imlygic.com/-/ media/project/imlygic/pdf/imlygic-clinical-overview.pdf. Accessed August 8, 2017.
- Seery V. Intralesional therapy: consensus statements for best practices in administration from the Melanoma Nursing Initiative. *Clin J Oncol Nurs*. 2017; 21(Suppl. 4):76-86.