

Name of Blue Advantage Policy: Suprachoroidal Delivery of Pharmacological Agents

Policy #: 312

Latest Review Date: March 2024

Category: Vision

BACKGROUND:

Blue Advantage medical policy does not conflict with Local Coverage Determinations (LCDs), Local Medical Review Policies (LMRPs) or National Coverage Determinations (NCDs) or with coverage provisions in Medicare manuals, instructions or operational policy letters. In order to be covered by Blue Advantage the service shall be reasonable and necessary under Title XVIII of the Social Security Act, Section 1862(a)(1)(A). The service is considered reasonable and necessary if it is determined that the service is:

- 1. Safe and effective;
- 2. Not experimental or investigational*;
- 3. Appropriate, including duration and frequency that is considered appropriate for the service, in terms of whether it is:
 - Furnished in accordance with accepted standards of medical practice for the diagnosis or treatment of the patient's condition or to improve the function of a malformed body member;
 - Furnished in a setting appropriate to the patient's medical needs and condition;
 - Ordered and furnished by qualified personnel;
 - One that meets, but does not exceed, the patient's medical need; and
 - At least as beneficial as an existing and available medically appropriate alternative.

*Routine costs of qualifying clinical trial services with dates of service on or after September 19, 2000, which meet the requirements of the Clinical Trials NCD are considered reasonable and necessary by Medicare. Providers should bill **Original Medicare** for covered services that are related to **clinical trials** that meet Medicare requirements (Refer to Medicare National Coverage Determinations Manual, Chapter 1, Section 310 and Medicare Claims Processing Manual Chapter 32, Sections 69.0-69.11).

POLICY:

Effective for dates of service on and after March 1, 2022:

Blue Advantage will treat suprachoroidal delivery of a pharmacologic agent as a covered benefit for use with XIPERETM (triamcinolone acetonide injectable suspension).

Blue Advantage will treat suprachoroidal delivery of a pharmacologic agent as a non-covered benefit and as investigational in all other situations.

Effective for dates of service prior to March 1, 2022:

Blue Advantage will treat suprachoroidal delivery of a pharmacologic agent as a non-covered benefit and as investigational.

Blue Advantage does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Advantage administers benefits based on the members' contract and medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.

DESCRIPTION OF PROCEDURE OR SERVICE:

The delivery of pharmacologic agents to the suprachoroidal space has been investigated for the treatment of posterior eye segment disease. Two of the most posterior eye segment diseases are age-related macular degeneration and diabetic neuropathy. The posterior eye segment structures included the vitreous humor, retina, choroid, macula, and optic nerve.

The suprachoroidal delivery of a pharmacologic agent method uses a microcannula system that combines a drug delivery channel with a fiber optic light source for localization of the cannula tip. There are identified advantages and risks associated with this drug delivery method. One potential advantage of suprachoroidal injection is the ability to minimize systemic side effects while delivering high local tissue levels of drugs. A potential risk associated with utilizing this drug delivery method is the possibility of localized tissue damage caused by the microcannula.

There are various methods of invasive and noninvasive delivery of ocular medications. Some examples of invasive drug administration to intraocular cavities include suprachoroidal injections, intravitreal surgery, intravitreal injections, intracameral surgery, subretinal injections, and intracameral injections. Some examples of invasive periocular and scleral modes of drug administration include intrascleral surgery, episcleral surgery, periocular injections, subconjunctival injections, and transscleral diffusion from controlled release systems. There are several noninvasive method choices, such as topical administration on the eye, systemic administration (e.g. intravenous infusion or injection), and oral delivery. It is important to choose the delivery method that will most positively affect the net health outcomes of the individuals with minimal risk of adverse effects.

The most widely used method of ocular drug delivery is topical or systemic. Topical application has remained the most preferred delivery route due to ease of administration. Topical application is useful in the treatment of disorders affecting the anterior segment of the eye. Although topical and systemic routes are convenient, they lack bioavailability and can fail to deliver therapeutic levels of drugs to the retina and posterior segment structures which has prompted exploration of alternative routes of ocular drug administration.

KEY POINTS:

This policy has been updated with a review of literature performed through March 22, 2024.

Summary of Evidence

There is inadequate evidence regarding the clinical utility of suprachoroidal injection of pharmacologic agents for the treatment of any ophthalmologic condition. Clinical outcome studies published in peer-reviewed medical literature are needed to determine the value of this drug delivery method in the management of individuals with diseases of the posterior segment of the eye. There is a paucity of well-designed clinical trials and scientific evidence to validate that this technology improves net health outcomes and is, therefore, considered investigational.

The drug, XIPERE® (triamcinolone acetonide), is indicated for use in the treatment of macular edema associated with uveitis. This drug is only available in SCS (suprachoroidal space) injectable form. When the drug is appropriate for use, the suprachoroidal injection of a pharmacologic agent is also deemed appropriate.

Practice Guidelines and Position Statements

No guidelines or statements were identified.

U.S. Preventive Services Task Force Recommendations

Not applicable.

KEY WORDS:

Suprachoroidal delivery system, iTrack[™], suprachoroidal delivery of pharmacological agents, SCS Microinjector®, Xipere®

APPROVED BY GOVERNING BODIES:

The iScience Surgical Ophthalmic Microcannula, or iTRACK™, is a flexible microcannula designed to allow atraumatic cannulation of spaces in the eye such as the anterior chamber and posterior segment, for infusion and aspiration of fluids during surgery, including saline and viscoelastics. The microcannula incorporates an optical fiber to allow transmission of light to the microcannula tip for surgical illumination and guidance. The iScience Surgical Ophthalmic Microcannula is indicated for fluid infusion and aspiration, as well as illumination, during surgery. This device received 501(k) clearance from the U.S. FDA in 2004.

XIPERE® is administered with a SCS Microinjector®. XIPERE® is a sterile, preservative-free, injectable suspension of triamcinolone acetonide, a synthetic corticosteroid for use with the SCS Microinjector®. The SCS Microinjector® is a piston syringe and a needle approximately 1 mm in length (900-μm and 1100-μm needles are included) for conducting the suprachoroidal injection. XIPERE® received clearance from the FDA on October 22, 2021.

BENEFIT APPLICATION:

Coverage is subject to member's specific benefits. Group-specific policy will supersede this policy when applicable.

CURRENT CODING:

CPT Codes

67516

Suprachoroidal space injection of pharmacologic agent (separate procedure, Effective 01/01/24)

PREVIOUS CODING:

CPT Codes

0465T

Suprachoroidal injection of a pharmacologic agent (does not include supply of medication, **Deleted 12/31/23**)

REFERENCES:

- 1. Abarca EM, Salmon JH, Gilger BC. Effect of choroidal perfusion on ocular tissue distribution after intravitreal or suprachoroidal injection in an arterially perfused ex vivo pig eye model. J Ocul Pharmacol Ther. 2013; 29(8):715-722.
- Chen M, Li X, Liu J, et al. Safety and pharmacodynamics of suprachoroidal injection of triamcinolone acetonide as a controlled ocular drug release model. J Control Release. 2015; 203:109-117.
- 3. Chiang B, Jung JH, Prausnitz MR. The suprachoroidal space as a route of administration to the posterior segment of the eye. Adv Drug Deliv Rev. 2018; 126:58-66.
- 4. Clearside Biomedical. Bausch + Lomb and Clearside Biomedical Announce the U.S. Commercial Launch of XIPERE® (Triamcinolone Acetonide Injectable Suspension) For Suprachoroidal Use for the Treatment of Macular Edema Associated with Uveitis. 2022 Mar; ir.clearsidebio.com/news-releases/news-release-details/bausch-lomb-and-clearsidebiomedical-announce-us-commercial.
- 5. Del Amo EM, Urtti A. Current and future ophthalmic drug delivery systems. A shift to the posterior segment. Drug Discov Today. 2008 Feb; 13(3-4):135-43.

- 6. Emami-Naeini P, Yiu G. Medical and Surgical Applications for the Suprachoroidal Space. Int Ophthalmol Clin. 2019 Winter; 59(1):195-207.
- 7. Gilger BC, Mandal A, Shah S, et al. Episcleral, intrascleral, and suprachoroidal routes of ocular drug delivery -recent research advances and patents. Recent Pat Drug Deliv Formul. 2014; 8(2):81-91.
- 8. Goldstein DA, Do D, Noronha G, et al. Suprachoroidal corticosteroid administration: A novel route for local treatment of noninfectious uveitis. Transl Vis Sci Technol. 2016; 5(6):14.
- 9. Gu B, Liu J, Li X, et al. Real-time monitoring of suprachoroidal space (SCS) following SCS injection using ultra-high resolution optical coherence tomography in guinea pig eyes. Invest Ophthalmol Vis Sci. 2015; 56(6):3623-3634.
- 10. Habot-Wilner Z, Noronha G, Wykoff CC, et al. Suprachoroidally injected pharmacological agents for the treatment of chorio-retinal diseases: A targeted approach. Acta Ophthalmol. 2019; 97(5):460-472.
- 11. Hartman RR, Kompella UB. Intravitreal, subretinal, and suprachoroidal injections: Evolution of microneedles for drug delivery. J Ocul Pharmacol Ther. 2018; 34(1-2):141-153.
- 12. IOM (Institute of Medicine). 2011. Clinical Practice Guidelines We Can Trust. Washington, DC: The National Academies Press.
- 13. iScience Interventional. iTrackTM Microcatheter [website]. Menlo Park, CA: iScience Interventional; 2008. Available at: http://www.iscienceinterventional.com/US/itrack.htm.
- 14. Jung JH, Chae JJ, Prausnitz MR. Targeting drug delivery within the suprachoroidal space. Drug Discov Today. 2019 Aug; 24(8):1654-1659.
- 15. Kadam RS, Williams J, Tyagi P, et al. Suprachoroidal delivery in a rabbit ex vivo eye model: Influence of drug properties, regional differences in delivery, and comparison with intravitreal and intracameral routes. Mol Vis. 2013; 19:1198-1210.
- 16. Khurana RN, Merrill P, Yeh S, et al. Extension study of the safety and efficacy of CLS-TA for treatment of macular edema associated with non-infectious uveitis (MAGNOLIA). Br J Ophthalmol. 2021;0:0-6
- 17. Kim YC, Oh KH, Edelhauser HF, Prausnitz MR. Formulation to target delivery to the ciliary body and choroid via the suprachoroidal space of the eye using microneedles. Eur J Pharm Biopharm. 2015; 95(Pt B):398-406.
- 18. Olsen TW, Feng X, Wabner K, et al. Cannulation of the suprachoroidal space: A novel drug delivery methodology to the posterior segment. Am J Ophthalmol. 2006; 142(5):777-787.
- 19. Park, B. Xipere for Suprachoroidal Use Approved for Macular Edema Associated With Uveitis. Oct 25, 2021. Retrieved from: https://www.empr.com/home/news/xipere-for-suprachoroidal-use-approved-for-macular-edema-associated-with-uveitis/.
- 20. Patel SR, Lin AS, Edelhauser HF, Prausnitz MR. Suprachoroidal drug delivery to the back of the eye using hollow microneedles. Pharm Res. 2011; 28(1):166-176.
- 21. Pearce W, Hsu J, Yeh S. Advances in drug delivery to the posterior segment. Curr Opin Ophthalmol. 2015; 26(3):233-239.

- 22. Rai Udo J, Young SA, Thrimawithana TR, et al. The suprachoroidal pathway: A new drug delivery route to the back of the eye. Drug Discov Today. 2015; 20(4):491-495.
- 23. Rizzo S, Ebert FG, Bartolo ED et al. Suprachoroidal drug infusion for the treatment of severe subfoveal hard exudates. Retina 2012; 32(4):776-84.
- 24. Tayyab H, Ahmed CN, Sadiq MAA. Efficacy and safety of suprachoroidal triamcinolone acetonide in cases of resistant diabetic macular edema. Pak J Med Sci. 2020; 36(2):42-47.
- 25. Tetz M, Rizzo S, Augustin AJ. Safety of submacular suprachoroidal drug administration via a microcatheter: retrospective analysis of European treatment results. Ophthalmologica 2012; 227(4): 183-9.
- 26. Venkatesh P, Takkar B. Suprachoroidal injection of biological agents may have a potential role in the prevention of progression and complications in high myopia. Med Hypotheses. 2017; 107:90-91.
- 27. Willoughby AS, Vuong VS, Cunefare D, et al. Choroidal changes after suprachoroidal injection of triamcinolone acetonide in eyes with macular edema secondary to retinal vein occlusion. Am J Ophthalmol. 2018; 186:144-151.
- 28. U.S. Food and Drug Administration (FDA). iScience surgical ophthalmic microcannula. 510(k) Summary. K041108. iScience Surgical Corporation, Redwood City, CA. Rockville, MD: FDA; June 22, 2004.
- 29. XIPERE® [prescribing information]. Alpharetta, GA: Clearside Biomedical, Inc.; 2021.
- 30. Yeh S, Khurana RN, Shah M, et al. Efficacy and safety of suprachoroidal CLS-TA for macular edema secondary to noninfectious uveitis: phase 3 randomized trial. Ophthalmology. 2020: 127(7):948-955.

POLICY HISTORY:

Adopted for Blue Advantage, January 2008

Available for comment January 9-February 22, 2008

Medical Policy Group, December 2008

Medical Policy Group, December 2009

Medical Policy Group, December 2010

Medical Policy Group, October 2011

Medical Policy Group, December 2013

Medical Policy Group, January 2014

Medical Policy Group, February 2015

Medical Policy Group, November 2019

Medical Policy Group, January 2021

Medical Policy Group, January 2022: Reviewed by consensus. References added. No new published peer-reviewed literature available that would alter the coverage statement in this policy.

Medical Policy Group, February 2022: Reviewed by consensus. No new published peer-reviewed literature available that would alter the coverage statement in this policy. Created previous coding section. Moved CPT code 67299 from current coding section to previous coding section.

Medical Policy Group, February 2022: Policy statement updated- "suprachoroidal delivery of a pharmacologic agent may be considered medically necessary for use

with XIPERETM (triamcinolone acetonide injectable suspension)" effective for dates of service on or after March 1, 2022.

Medical Policy Group, February 2023: Reviewed by consensus. No new published peer-reviewed literature is available that would alter the coverage statement in this policy.

Medical Policy Group, November 2023: 2024 Annual Coding Update- Added CPT code 67516 to the Current Coding section. Moved CPT code 0465T from Current Coding section to include it in the Previous Coding section.

Medical Policy Group, March 2024: Reviewed by consensus. No new published peer-reviewed literature is available that would alter the coverage statement in this policy.

This medical policy is not an authorization, certification, explanation of benefits, or a contract. Eligibility and benefits are determined on a case-by-case basis according to the terms of the member's plan in effect as of the date services are rendered. All medical policies are based on (i) research of current medical literature and (ii) review of common medical practices in the treatment and diagnosis of disease as of the date hereof. Physicians and other providers are solely responsible for all aspects of medical care and treatment, including the type, quality, and levels of care and treatment.

This policy is intended to be used for adjudication of claims (including pre-admission certification, pre-determinations, and pre-procedure review) in Blue Cross and Blue Shield's administration of plan contracts.