Protocol		Prolotherapy		
		(20126)		
Medical Benefit		Effective Date: 07/01/09	Next Review Date: 09/19	
Preauthorization	No	Review Dates : 07/07, 03/08, 03/09, 01/10, 01/11, 09/11, 09/12, 09/13, 09/14,		
		09/15, 09/16, 09/17, 09/18		

This protocol considers this test or procedure investigational. If the physician feels this service is medically necessary, preauthorization is recommended.

The following protocol contains medical necessity criteria that apply for this service. The criteria are also applicable to services provided in the local Medicare Advantage operating area for those members, unless separate Medicare Advantage criteria are indicated. If the criteria are not met, reimbursement will be denied and the patient cannot be billed. Please note that payment for covered services is subject to eligibility and the limitations noted in the patient's contract at the time the services are rendered.

Populations	Interventions	Comparators	Outcomes
 Individuals: With musculoskeletal pain osteoarthritic pain, or tendinopathies of the upper or lower limbs 	Interventions of interest are: • Prolotherapy	Comparators of interest are:ObservationOther conservative therapies	Relevant outcomes include: • Symptoms • Functional outcomes • Quality of life

DESCRIPTION

Prolotherapy describes a procedure intended for healing and strengthening ligaments and tendons by injecting an agent that induces inflammation and stimulates endogenous repair mechanisms. Prolotherapy may also be referred to as proliferant injection, prolo, joint sclerotherapy, regenerative injection therapy, growth factor stimulation injection, or nonsurgical tendon, ligament, and joint reconstruction.

SUMMARY OF EVIDENCE

For individuals who have musculoskeletal pain (e.g., chronic neck, back pain), osteoarthritic pain, or tendinopathies of the upper or lower limbs who receive prolotherapy, the evidence includes small randomized trials with inconsistent results. Relevant outcomes are symptoms, functional outcomes, and quality of life. The strongest evidence evaluates the use of prolotherapy for the treatment of osteoarthritis, but the clinical significance of the therapeutic results is uncertain. The evidence is insufficient to determine the effects of the technology on health outcomes.

POLICY

Prolotherapy is considered **investigational** as a treatment of musculoskeletal pain.

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BACKGROUND

The goal of prolotherapy is to promote tissue repair or growth by prompting the release of growth factors, such as cytokines, or by increasing the effectiveness of existing circulating growth factors. The mechanism of action is not well-understood but may involve local irritation and/or cell lysis. Agents used with prolotherapy have included zinc sulfate, psyllium seed oil, combinations of dextrose, glycerin, and phenol, or dextrose alone, often combined with a local anesthetic. Polidocanol and sodium morrhuate, vascular sclerosants, have also been used to sclerose areas of high intratendinous blood flow associated with tendinopathies. Prolotherapy typically involves multiple injections per session conducted over a series of treatment sessions.

A similar approach involves the injection of autologous platelet-rich plasma, which contains a high concentration of platelet-derived growth factors. Treatment of musculoskeletal pain conditions (e.g., tendinopathies) with platelet-rich plasma is discussed in the Autologous Platelet-Derived Growth Factors for Wound Healing and Other Non-Orthopedic Conditions Protocol.

REGULATORY STATUS

Sclerosing agents have been approved by the U.S. Food and Drug Administration for use in treating spider and varicose veins. These sclerosing agents include Asclera[®] (polidocanol), Varithena[®] (an injectable polidocanol foam), Sotradecol[®] (sodium tetradecyl sulfate), Ethamolin[®] (ethanolamine oleate), and Scleromate[®] (sodium morrhuate). These agents are not currently approved as joint and ligamentous sclerosing agents.

RELATED PROTOCOLS

Autologous Platelet-Derived Growth Factors for Wound Healing and Other Non-Orthopedic Conditions

Diagnosis and Treatment of Sacroiliac Joint Pain

Services that are the subject of a clinical trial do not meet our Technology Assessment Protocol criteria and are considered investigational. For explanation of experimental and investigational, please refer to the Technology Assessment Protocol.

It is expected that only appropriate and medically necessary services will be rendered. We reserve the right to conduct prepayment and postpayment reviews to assess the medical appropriateness of the above-referenced procedures. Some of this protocol may not pertain to the patients you provide care to, as it may relate to products that are not available in your geographic area.

REFERENCES

We are not responsible for the continuing viability of web site addresses that may be listed in any references below.

- 1. Yelland MJ, Mar C, Pirozzo S, et al. Prolotherapy injections for chronic low-back pain. Cochrane Database Syst Rev. Apr 2004(2):CD004059. PMID 15106234
- 2. Dagenais S, Haldeman S, Wooley JR. Intraligamentous injection of sclerosing solutions (prolotherapy) for spinal pain: a critical review of the literature. Spine J. May-Jun 2005;5(3):310-328. PMID 15863087
- 3. Rabago D, Best TM, Beamsley M, et al. A systematic review of prolotherapy for chronic musculoskeletal pain. Clin J Sport Med. Sep 2005;15(5):376-380. PMID 16162983

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- 4. Dagenais S, Yelland MJ, Del Mar C, et al. Prolotherapy injections for chronic low-back pain. Cochrane Database Syst Rev. Apr 18 2007(2):CD004059. PMID 17443537
- 5. Dagenais S, Mayer J, Haldeman S, et al. Evidence-informed management of chronic low back pain with prolotherapy. Spine J. Jan-Feb 2008;8(1):203-212. PMID 18164468
- Chou R, Atlas SJ, Stanos SP, et al. Nonsurgical interventional therapies for low back pain: a review of the evidence for an American Pain Society clinical practice guideline. Spine (Phila Pa 1976). May 1 2009;34(10): 1078-1093. PMID 19363456
- 7. Ongley MJ, Klein RG, Dorman TA, et al. A new approach to the treatment of chronic low back pain. Lancet. Jul 18 1987;2(8551):143-146. PMID 2439856
- 8. Klein RG, Eek BC, DeLong WB, et al. A randomized double-blind trial of dextrose-glycerine-phenol injections for chronic, low back pain. J Spinal Disord. Feb 1993;6(1):23-33. PMID 8439713
- Yelland MJ, Glasziou PP, Bogduk N, et al. Prolotherapy injections, saline injections, and exercises for chronic low-back pain: a randomized trial. Spine (Phila Pa 1976). Jan 1 2004;29(1):9-16; discussion 16. PMID 14699269
- 10. Dagenais S, Ogunseitan O, Haldeman S, et al. Side effects and adverse events related to intraligamentous injection of sclerosing solutions (prolotherapy) for back and neck pain: A survey of practitioners. Arch Phys Med Rehabil. Jul 2006;87(7):909-913. PMID 16813776
- 11. Reeves KD, Hassanein KM. Long-term effects of dextrose prolotherapy for anterior cruciate ligament laxity. Altern Ther Health Med. May-Jun 2003;9(3):58-62. PMID 12776476
- Kim WM, Lee HG, Jeong CW, et al. A randomized controlled trial of intra-articular prolotherapy versus steroid injection for sacroiliac joint pain. J Altern Complement Med. Dec 2010;16(12):1285-1290. PMID 21138388
- 13. Rabago D, Patterson JJ, Mundt M, et al. Dextrose prolotherapy for knee osteoarthritis: a randomized controlled trial. Ann Fam Med. May-Jun 2013;11(3):229-237. PMID 23690322
- 14. Rabago D, Mundt M, Zgierska A, et al. Hypertonic dextrose injection (prolotherapy) for knee osteoarthritis: Long term outcomes. Complement Ther Med. Jun 2015;23(3):388-395. PMID 26051574
- Reeves KD, Hassanein K. Randomized prospective double-blind placebo-controlled study of dextrose prolotherapy for knee osteoarthritis with or without ACL laxity. Altern Ther Health Med. Mar 2000;6(2):68-74, 77-80. PMID 10710805
- Reeves KD, Hassanein K. Randomized, prospective, placebo-controlled double-blind study of dextrose prolotherapy for osteoarthritic thumb and finger (DIP, PIP, and trapeziometacarpal) joints: evidence of clinical efficacy. J Altern Complement Med. Aug 2000;6(4):311-320. PMID 10976977
- 17. Jahangiri A, Moghaddam FR, Najafi S. Hypertonic dextrose versus corticosteroid local injection for the treatment of osteoarthritis in the first carpometacarpal joint: a double-blind randomized clinical trial. J Orthop Sci. Sep 2014;19(5):737-743. PMID 25158896
- Rabago D, Best TM, Zgierska AE, et al. A systematic review of four injection therapies for lateral epicondylosis: prolotherapy, polidocanol, whole blood and platelet-rich plasma. Br J Sports Med. Jul 2009;43(7):471-481. PMID 19028733
- 19. Scarpone M, Rabago DP, Zgierska A, et al. The efficacy of prolotherapy for lateral epicondylosis: a pilot study. Clin J Sport Med. May 2008;18(3):248-254. PMID 18469566
- 20. Carayannopoulos A, Borg-Stein J, Sokolof J, et al. Prolotherapy versus corticosteroid injections for the treatment of lateral epicondylosis: a randomized controlled trial. PM R. Aug 2011;3(8):706-715. PMID 21871414
- 21. Yelland MJ, Sweeting KR, Lyftogt JA, et al. Prolotherapy injections and eccentric loading exercises for painful Achilles tendinosis: a randomised trial. Br J Sports Med. Apr 2011;45(5):421-428. PMID 19549615
- 22. American Association of Orthopedic Medicine, Klein RG, Patterson J, et al. Prolotherapy for Back Pain Treatment. n.d.; http://www.aaomed.org/prolotherapy-back-pain. Accessed September 19, 2017.

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23. Centers for Medicare and Medicaid Services. National Coverage Determination (NCD) for PROLOTHERAPY, Joint Sclerotherapy, and Ligamentous Injections with Sclerosing Agents (150.7). 1999; https://www.cms.gov/medicare-coverage-database/details/ncddetails.aspx?NCDId=15&ncdver=1&DocID =150.7&ncd_id=150.7&ncd_version=1&basket=ncd%253A150%252E7%253A1%253AProlotherapy%257C%2 57C+Joint+Sclerotherapy%257C%257C+and+Ligamentous+Injections+with+Sclerosing+Agents&bc=gAAABA AAAAAA%3d%3d&. Accessed October 25, 2017.