Regenerative Pain Medicine, the New Era of Interventional Pain Management, Restart Now!

For Degenerative Diseases, do Regenerative Treatment

Mirza Koeshardiandi
Anesthesiology Department, Dr. Soedono Hospital, Madiun, Indonesia

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Correspondence: Mirza Koeshardiandi, dr, Sp.An, FIPM, FIPP
Anesthesiology Department, Dr. Soedono Hospital, Madiun, Indonesia
e-mail: mirzakoes@gmail.com

Musculoskeletal conditions become the leading contributor of the total years lived disability (YLD) by causing 21.3% of the YLDs, after mental and behavioral problems. Several musculoskeletal conditions give a disproportional impact on low back pain, one of the leading causes of disability. Lateral epicondylitis with a prevalence of 1-2%, commonly suffered by adults in their 30-65 years old. Epicondylitis was also suffered by a small population of athletes, such as professional tennis players (10% of epicondylitis population). The severe repetitive injuries that affect the individual daily activity also increase the daily health care cost.

Osteoarthritis and tendinopathy often become the cause of pain and musculoskeletal disability. However, the etiology of pain in osteoarthritis is multifactorial. The incidence of osteoarthritis reaches 6% in 30 years old population and increase due to aging.

Degenerative disease, the reduction of function or structure of the tissue or organ due to aging, encourages the pain specialist to perform a reliable pain management/therapy. Prolotherapy, especially dextrose prolotherapy, has become a promising technique by providing a safe degenerative therapy, easy to performed, and highly available in health facilities. Nowadays, it is necessary to pay more attention to causative-based treatment strategies than symptom-based treatment. A multidisciplinary team is also needed to provide appropriate treatment.

Restart the old sciences with the new approach

Prolotherapy, an injection-based therapy for chronic musculoskeletal pain, including osteoarthritis and tendinopathy, has been used since 1937. This technique is performed by injecting a solution (irritant or sclerosing solution) in the ligament, tendon insertion (entheses), trigger points, and synovial joints to promote tissue or wound healing cascade. Prolotherapy is also chosen due to low-cost treatment. Prolotherapy stimulates damaged ligament and tendon improvement by promotes normal cell proliferation. George S. Hackett, MD, from Canton, Ohio, in 1950, reported that the stimulation of the fibrous tissue and osteocytes would strengthen the fibrous connective tissue and skeleton to stabilize the corrected joint. Prolotherapy is done for two to six weeks for several months. Local irritation, infection, and anabolic tissue healing induce joint stabilization and biomechanics, resulting in pain reduction.

Dextrose, 1% lidocaine without epinephrine, and normal saline are the appropriate regimens for prolotherapy. A 10% dextrose is needed to promote the wound healing process, consist of three phases; inflammatory phase, proliferative phase, and maturation phase.

What the differences? or Does it significantly benefit?

Healing process initiated by the stimulation of local inflammation in the affected tissue. This process is the first step in increasing musculoskeletal function. Compare to corticosteroid injection, dextrose prolotherapy is more potent in chronic lateral epicondylitis treatment by providing significant outcomes (significantly decrease pain intensity and improve joint function). Corticosteroid injection only decreases pain intensity in a short period (short-term pain relief), while prolotherapy provides longer action. Prolotherapy intervention improves pain gradually, and pain completely diminishes three months after the intervention. Compare to corticosteroid injection, dextrose prolotherapy significantly decreasing VAS score.

The long-term pain-relief effects of prolotherapy are due to the inflammation modulation in the affected tissue. On the other, corticosteroid, an anti-inflammatory agent, suppress wound healing by reduces collagen synthesis, matric extracellular productions, and granulation tissue. Therefore, it produces short-term pain relief.

The therapeutic effect of a corticosteroid injection is effective only for the first six months after injection. After that, the pain will arise in the same location. However, the prolotherapy effect in reducing pain will remain until 12 months after the intervention.

Prolotherapy provides a coherent outcome as a surgical intervention with lower cost. Dextrose, the proliferant, is safe, watersoluble, and available in clinical practice. Prolotherapy that able to reduce pain and provide long-term musculoskeletal function improvement makes it necessary to be considered in interventional pain management.
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CONFLICT OF INTEREST
None

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