The Roles of Aerobic Training and Ozone Therapy Concerning Osteoarthritis and Cardiovascular Disease

Atousa Zandi¹, Hasan Matinhomaee ¹, * and Lida Moradi ²

¹Department of Exercise Physiology, Central Tehran Branch, Islamic Azad University, Tehran, Iran
²Department of Physical Education and Sports Science, North Tehran Branch, Islamic Azad University, Tehran, Iran

*Corresponding author: Department of Exercise Physiology, Central Tehran Branch, Islamic Azad University, Tehran, Iran. Email: hasanmatinhomaee@gmail.com

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Dear editor,

Nowadays, arthritis and cardiovascular disease are common disorders among people. Arthritis is a condition which causes pain, stiffness, and swelling in joint (1). In osteoarthritis which is the most common type of arthritis, the protective cartilage among bones begins to weaken, and the bones will be worn out, causing pain in person (2). The cardiovascular disease affecting the heart or blood vessels which is usually related to a build-up of fatty deposits inside the vessels (atherosclerosis). There are many factors involved in developing osteoarthritis and atherosclerosis, some of which, such as age and genetics, are not under human control (3, 4). Some factors such as muscle weakness, inactivity, and overweight are factors which can be controlled during the life (5-8). However, studies show that subjects who suffer from these conditions for any reason can recover with proper aerobic training and ozone therapy (5, 9-11). Due to the reports, aerobic training and ozone therapy positively affect genes related to cardiovascular health in the heart tissue of rats with osteoarthritis (9). Furthermore, combined therapies with aerobic training and ozone improve some biochemical variables in cartilage tissue of rats with knee osteoarthritis (12). Aerobic training decreases the risk of ischemia-related cardiac dysfunction/death (13). Aerobic training via several mechanisms such as changes in reverse cholesterol transport elements has a positive effect on heart health and function (7, 14-17). Aerobic training (under physician supervision) can help treat osteoarthritis and reduce pain by increasing muscle and tendon function as well as weight loss (18).

Ozone is a protective layer on earth which prevents much of Sun’s UV rays from reaching earth (19). Moreover, ozone has a whole new purpose today, which has nothing to do with protection from sun (20). Ozone therapy has a beneficial effect for patients with ischemic heart disease, or patients who suffer from myocardia infarction (21). Ozone activates redox system which reduces pro-inflammatory cytokines, adjusts nuclear factor-κB (NF-KB) pathway, decreases platelet aggregation and induced the release of growth factors (21). These changes are the mechanisms to explain the beneficial effect of ozone therapy on preventing and treating ischemic heart disease and post-infarct rehabilitation (21). Nowadays, Ozone therapy is so popular because it is simply applicable to cardiovascular aim which does not require surgery for osteoarthritis treatments (22). Studies show that ozone injections relieve knee pain and improve people’s life quality with knee osteoarthritis (22). Joint injection of ozone appears to regenerate ligaments and is a permanent treatment for chronic pain due to osteoarthritis (23). Joint injection of ozone repairs damaged or weak connective tissue, and by repairing connective tissue, chronic pain can be completely cured. Using ozone therapy, joint injection is an injection method similar to proletarian therapy (24). Applying ozone causes damaged joint to heal much faster than traditional medication (23). This is because ozone is a highly reactive molecule that can repair the fibroblast joint when injected into the joint capsule (21). The injection is done by injecting ozone near the nerve root of affected area and affected joint to treat osteoarthritis (25). With its anti-inflammatory properties, ozone improves joint disorders such as meniscus rupture and osteoarthritis (23). Ozone therapy is relatively painless, and the patients can fully take care of their daily tasks on the same day of treatment (26). People respond to ozone therapy differently (26), the patients usually achieve more than 50% reduction in pain. Most people may need one or two sessions of treatment (27). The healing process can take several weeks. Most col-
lafen is produced after a few weeks after injection (23). In a nutshell, therapy is a very safe treatment for osteoarthritis. When performed by an experienced physician, ozone therapy rarely causes adverse side effects (28). Like medical treatments, it has potential health risks associated to infection, allergic reactions, fainting, pain, bruising, and hospitalization (29). People usually experience a significant reduction in pain 24 hours after treatment which decreases over time (29). The amount of pain reduction varies from person to person, failure to respond to treatment is rare (26).

Footnotes

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