

Mechanism of ozone in Lyme and tic borne disease.

Ozone therapy plays an important role in the treatment of Lyme disease.

1) Ozone therapy introduces foreign Lyme antigens from the blood into foreign sites such as the muscle and the fat, activating different immune sites. The immune stimulation is aided by inflammation from the blood now outside of the blood vessel, fats in the blood, and of course by the ozone.

Further, ozone is a potent oxidizing agent that changes the structure of the Lyme antigens by adding an oxygen molecule to them. This modifies the foreign Lyme antigen again, allowing for a slightly different, possibly more effective immune system response.

2) Ozone therapy improves symptoms of chronic Lyme disease and circulation

The brain fog, fatigue, and joint pain of chronic Lyme disease often have a rapid response to ozone therapy. Lyme infections typically increase inflammation in the blood, increasing the thickness and viscosity of the blood. Furthermore, Lyme can form biofilm which makes circulation even worse. Ozone therapy creates peroxides, that when reinfused intravenously helps to break down biofilm. The mild stress on red blood cells helps them to increase their glutathione, and helps them to unload oxygen to the tissues.

3) Ozone causes inactivation of bacteria, viruses, fungi, yeast and protozoa. It achieves this action by disrupting the integrity of the bacterial cell envelope through oxidation of the phospholipids and lipoproteins. In fungi, O₃ inhibits cell growth at certain stages. With viruses, the O₃ damages the viral capsid and upsets the reproductive cycle by disrupting the virus-to-cell contact with peroxidation. The weak enzyme coatings on cells which make them vulnerable to invasion by viruses make them susceptible to oxidation and elimination from the body, which then replaces them with healthy cells.

4) Ozone therapy speeds up the ability of the immune system to catch up, improves symptoms and circulation, and protects the liver. The creation of peroxides from ozone therapy, on reinfusion intravenously, delivers a mild stress to the liver. The mild biochemical stress stimulates the liver to increase its glutathione, the main antioxidant it uses for detoxification.

5) Stimulation of oxygen metabolism: Ozone therapy causes an increase in the red blood cell glycolysis rate. This leads to the stimulation of 2,3-diphosphoglycerate which leads to an increase in the amount of oxygen released to the tissues. Ozone activates the Krebs cycle by enhancing oxidative carboxylation of pyruvate, stimulating production of ATP. It also causes a significant reduction in NADH and helps to oxidize cytochrome C. There is a stimulation of production of enzymes which act as free radical scavengers and cell-wall protectors:

glutathione peroxidase, catalase and superoxide dismutase. Production of prostacycline, a vasodilator, is also induced by O₃