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Mini Review

Ozone Therapy in Dentistry – A Review

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Abstract

Ozein, which means odour, taken from the Greek word r and German chemist Christian Friedrich Schonbein was first person to use. Ozone is a triatomic molecule with symbol O3 it is present in the upper atmosphere till the sunlight is present. The bactericidal, fungicidal and veridical properties of ozone are the result of its intense oxidizing capacity, with the formation of free radical and direct destruction of almost all microorganisms.

Keywords: Ozone; Dentistry

Introduction

In Disinfection system in the 1920s Dr Edwin Parr, a Swiss dentist, started using ozone. Ozone is a blue gas present in abundance in stratosphere with a concentration of 16–20 mg/m. It swiftly gives up nascent oxygen molecule to form oxygen gas, hence considered as an unstable gas [1].

Goals

Goals of ozone therapy include

1. Stops progression and remove pathogens,
2. Increase of immune system and maintains proper circulation,
3. Reduces the inflammation and pain,
4. Initiates humoral anti-oxidant system,
5. Maintains proper oxygen metabolism,
6. Avoid shock and stroke damage,
7. Creates friendly ecological environment,
8. Increases brain function and memory [2].

Ozone generating systems

The three ozone generating systems are:

UV system: This system emits UV light at 185 nm producing low concentrations of ozone.

- The oxygen atoms binds with other oxygen molecules to generate ozone.

Cold plasma system

In this system, an electrostatic field is formed as the voltage jumps between the anode and the cathode rods.

- Air and water purification are applications of this system.

Corona discharge system

With the help of ozone formation and electrical discharge it helps in spreading over an area with the help of dielectric to form corona discharge. Passage of oxygen through corona discharge is changed into ozone [3].

Applications of ozone in dentistry

1. Act as powerful disinfectant,
2. To stop control bleeding.
3. Help in cleaning wounds in bones and soft tissues.
4. To improve healing by increasing the local supply of oxygen to the wound area.

Mechanism of action

- **Antimicrobial action:** It destroy cytoplasmic membrane of cells and then help in modification of intracellular contents. All vital functions of bacteria (incapable of devel-

oping any self-immunity) are stopped as a result of few-seconds-application of ozone.

- **Anti-hypoxic effect**: By raising partial pressure of oxygen in tissues there is change of cellular metabolism. Also increases the oxygen transportation in blood. Ozone increases oxygenation and reduces local inflammatory processes, thus improving the metabolism of inflamed tissues.
- **Biosynthetic effect:** There is increase in amount of mitochondria with the help of ozone which activates the protein synthesis mechanism. Elevation of functional activity and regeneration potential of tissues and organs if ribosomes are present.

Conclusion

Ozone is the best thing providing non surgical, painless and effective treatments to humankind. Further research in ozone would bring a more hope and smile for patients [4].

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