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Evaluation of Ozone Therapy as adjuvant therapy in cancer patients and reduction of side effects of Radiation therapy - Indian experiences [abstract]

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ABSTRACT

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Purpose. India is new cancer capital of world with almost one third of cases registered from India, In this century, cancer is projected to be the leading cause of death. Neoplasia is a multifactorial process that can be broadly categorized into five etiologies: genetic, viral, chemical, physical and inflammatory. Chemical, physical and inflammatory are closely linked to reactive oxygen species (ROS), which can readily induce genomic damage. Although the precise mechanisms responsible for increased ROS stress in cancer cells have not be defined, the increase in ROS generation is attributed to active cellular metabolic activity under the influence of oncogenic signals and/or to mitochondrial malfunction in cancer cells.

Ozone therapy (OT) biological effects are: cellular redox balance (OT can exert its protective effects by means of an oxidative preconditioning, stimulating and/or preserving the endogenous antioxidant systems); regulation of the immunological system, increase of prostacyclin, as well as the increase of oxygenation in tumours.

Tumour Hypoxia is a well-recognized mechanism for resistance of neoplastic cells to anticancer drugs and radiation.

Material and Methods. The clinical trial included only 83 patients with mainly oral, breast and brain cancer patients in treatment with cobalt-60 therapy at Lady Ratan Tata Memorial Radiation Department were also treated with Rectal Insufflation of an ozone-oxygen at a dose of 7mg (200 mL at 35 mcrg/mL), 6 days per week along with Minor auto haemotherapy (100 mcrg) alternatively for 6 weeks till the duration radiotherapy.

Results. The appearance of side effects (dermatitis, pigmentation, ulceration) minimized to 24% in the ozone group that means a significant difference post radiation. When compared to patients not treated with OT. One month after finishing the treatment, with significant difference in patients supported by OT. The clinical observation were:

- Improvement in Energy Level
- Feeling of Cheerfulness
- Improved Appetite
- Improved WBC, RBC and Hb levels
- Reduction in Tumor Markers, CEA, AFP, CA125

Conclusion. OT is effective as adjuvant to conventional approach of Radiation in reducing side effects of radiation by improvement of blood circulation and oxygen delivery to ischemic and neoplastic tissues. Furthermore, it correct the chronic oxidative stress by upregulating the antioxidant system procuring a state of well-being in patients by activating the neuro-endocrine system.

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