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Oxidative therapies - ozone and hydrogen peroxide

Safe, effective, low-cost treatments for many diseases, including HIV and cancer

At a time when orthodox medical research, especially into cancer treatments, seems intent on exploring drugs and techniques whose usually expensive, benefits are offset by equally damaging side-effects, it is strange that applications that have been used very successfully by many doctors in certain countries to treat a vast array of degenerative illness, including cancer, heart disease and HIV/AIDS, are virtually ignored, particularly when existing studies indicate their considerable potential both to save life and huge sums of money for a country's health service.

Oxygen is so obviously vital to life that the role of chronic, sub-clinical deprivation may easily be overlooked in its profound contribution to the development of so much disease. But as long ago as 1931 the German doctor and scientist Otto Warburg won a Nobel Prize for his work on the fundamental importance of oxygen-transfer in cell respiration; in 1944 he won a second for his discovery of the hydrogen-transferring enzyme. In his 1966 book, *The Prime Cause and Prevention of Cancer* (Wurzburg: K Tritsch), Warburg, a director of The Max Planck Institute for Cell Physiology, stated:

'Cancer, above all other diseases, has countless secondary causes, but there is only one prime cause... the replacement of the normal oxygen respiration of body cells by an anaerobic [oxygen lacking] cell respiration.'

What he showed was that the growth of cancer cells is initiated by a relative lack of oxygen at the cellular level. When cells cannot get sufficient oxygen they start to feed off themselves in a sugar fermentation process that gets progressively disruptive, leading to a toxic environment in which cancer and other illnesses, triggered by viruses and parasites, can thrive. Cancer cells cannot easily exist in a high oxygen environment.

Bacteria and parasites in the gut divide into two main types: the beneficial, such as *Lactobacillus* and *Acidophilus*, which are mainly aerobic, and the harmful, such as *E coli*, *Staphylococcus* and *Helicobacter pylori*, which are anaerobic. Thus, with sufficient oxygenation, the beneficial 'bugs' thrive, while the harmful are kept under control. But if oxygen saturation falls below a critical level - around 60% - the reverse process begins to occur which, chronically, enables a host of diseases to develop.

To combat such disease and restore adequate oxygenation, thus ensuring proper oxidation, bio-oxidative therapies, in the form of ozone and hydrogen peroxide (and, to a lesser extent, hyperbaric oxygen), have been used for over 100 years. First appearing in mainstream medical journals in 1920, they were increasingly used by European practitioners, but in the US were suppressed and doctors persecuted at the hands of the FDA. Only now are they starting to attract mainstream interest, due in part to the spectre of antibiotic resistance, with some 50-100 references appearing in world medical journals each month.

Ozone

In Nature ozone occurs in the atmosphere and is formed when ultraviolet radiation forces oxygen to recombine temporarily in groups of three atoms, as an energised form of oxygen (O₃), which quickly reacts with other substances. It is also produced during an electrical storm and the characteristic smell afterwards is due to the small amount of ozone in the air.

It is produced commercially in ozone generators, which use an electrical charge through a condenser, and has been used to purify water since 1860 when the first treatment plant was built in Monaco. In 1901 Werner von Siemens (founder of the drug company) treated water with it for the first time in Germany. Today over 3,000 cities use ozone to treat their drinking supplies.

In September 1896, the electrical genius Nikola Tesla patented his first ozone generator and in 1900 he formed the Tesla Ozone Co. Tesla sold ozone machines and ozonated olive oil to doctors for medical use.

Ozone is also used by the bottling, pharmaceutical and food industries as a disinfectant as well as to clean up polluted lakes or rivers, which it does far more effectively than chlorine without killing animal life or leaving harmful

chemical residues. Ozone is also an effective air cleaner and remover of noxious odours. During World War 1 the Germans used ozone to treat wounds and infections. In the 1930s German scientists and doctors carried out considerable research into its effects, using it to successfully treat Crohn's disease, ulcerative colitis, inflammatory bowel disease and chronic bacterial diarrhoea. A German dentist, Dr EA Fisch, first used ozonated water as a disinfectant; one of his patients, surgeon Dr Erwin Payr, in 1945 pioneered the method of injecting ozone intravenously to treat circulatory problems.

Another German pioneer, physicist Joaquim Hansler developed the first medical ozone generator that could make accurate doses of oxygen and ozone, and the company he founded is now the largest manufacturer of medical ozone generators in the world. The lead by German doctors in this field led to Dr W Zable in the late 1950's becoming the first to treat cancer with ozone, while Dr Horst Kief, near Frankfurt, is believed to have been the first doctor to use it to treat HIV.

Today, an estimated 9,000 licensed health practitioners in Germany use ozone, compared to a handful in the UK. Another 8,000 practitioners across Europe are using it. It is generally given by rectal insufflation, injection, autohemotherapy (in which blood is extracted, treated and then returned to the body), by steam cabinet, body bag and, under special conditions, inhalation.

It is estimated that over 10 million ozone treatments have been given to over 1 million patients in Germany alone over the last 40 years. Despite this extraordinary record the American FDA continues to obstruct human trials there and actively prosecutes US doctors for using ozone.

Hydrogen peroxide

Created in the atmosphere when ultraviolet light strikes oxygen in the presence of moisture, hydrogen peroxide is a clear, colourless liquid that mixes easily with water. Composed of two atoms of oxygen and two of hydrogen (H₂O₂), hydrogen peroxide is involved in all of the essential processes of life and must be present for the immune system to function properly. The latter's first line of defence against viruses, bacteria, parasites and yeast is hydrogen peroxide produced by granulocytes, white blood cells that fight infection. Hydrogen peroxide is also necessary both to help metabolise carbohydrates, proteins, fats, vitamins and minerals, and as a hormone regulator in the production of oestrogen, progesterone and thyroxin. It also assists in regulating blood sugar and energy production in cells.

For a long time hydrogen peroxide has been used medically as an antiseptic, disinfectant, and oxidiser. One of its special qualities is its ready ability to decompose into water and oxygen. It is also used commercially for bleaching, pollution control and in agriculture.

It has been found in many of the world's healing springs, including Lourdes in France, and, most recently, it has treated a wide variety of diseases, with few side effects. It is usually administered orally, intravenously or by injection into joints and soft tissue trigger points, as 30 percent reagent-grade or 35 percent food-grade hydrogen peroxide.

Hyperbaric oxygen

This therapy uses 100% pure oxygen administered at two to three times normal atmospheric pressure in a special chamber. By dissolving oxygen in the blood plasma this results in delivering increased oxygen directly to tissues. It is best known for its use in treating carbon monoxide poisoning, gas gangrene and decompression in divers, known as the 'bends'.

However, hyperbaric oxygen (HBO) therapy is now increasingly being used as an adjunct to standard medical care because it not only reduces swelling or oedema but also produces antioxidant effects and stimulates new blood vessel formation where blood supply is limited. It is now used to treat anaerobic infections, chronic bone infections, difficult wounds, crush and soft tissue injuries, burns, skin grafts and radiation injuries. It is also useful in treating diabetes, vascular disease, cancer patients undergoing irradiation, and those recovering from cosmetic, plastic and laser surgery. Research is looking at its use for strokes, HIV-linked disorders and chronic fatigue syndrome. MS patients use it at over 50 centres around the UK. It is treating sports injuries and some believe that it enhances athletic performance.

Current research

The main research carried out into bio-oxidative therapies has taken place in Germany, Russia and Cuba, where governments and universities cooperate and support such studies. To a far lesser extent research is also taking place in Italy, France, Mexico, Canada and the USA. Hardly any is happening in the UK.

In Russia ozone therapy has been approved by the Ministry of Public Health and is fast becoming part of mainstream medicine. Institutions such as the Central Scientific Laboratory at the Medical Institute Nizhni

Novgorod (Gorky) and the Central Scientific Research Institute of Dermatology and Venerology in Moscow are involved in both research and training of physicians.

Cuba's greatest success since its 1959 revolution - and one of its main aims - has been to provide a first-class, free health service for its 11 million people. Despite the crippling US economic blockade, it has carried out medical ozone research since 1985 under the auspices of the Department of Ozone, which works with doctors across the country as part of the National Program for Ozone Therapy. In 1994 the Department, with its 60 staff, was relocated at the new Centre for Ozone Therapy in Havana, which hosted the 2nd International Symposium on Ozone Applications in 1997. Since 1985 over 20,000 Cubans have been treated with ozone and many foreigners travel the country for just this treatment.

Russia and Cuba's eminence in research is due to factors including both having a history of socialised medicine, limited access to western drugs, and the very low cost and lack of patentability - and thus little profit - of producing ozone. In the US the FDA has been accused by leading campaigner for oxygen therapies Ed McCabe (author of *Oxygen Therapies*, Energy Publications, New York, 1988: available in the UK from Resonance, 01803 840008) of protecting the interests of the drug companies against the obvious threat posed by ozone by harassing doctors using it and preventing human trials, although increasing research evidence is forcing a change in this attitude.

In 1994 Dr Charles Farr in Oklahoma City founded the International Oxidative Medicine Association. Dr Farr, who sadly died recently, was one of America's leading practitioners of oxidative medicine and, with over 35 medical publications to his credit (including *The Therapeutic Use of Intravenous Hydrogen Peroxide*, monograph, Oklahoma City, 1987), was nominated for a Nobel Prize in 1993 for his work.

Other associations include the International Association for Oxygen Therapies, based in Priest River, Idaho, and the European-based Medical Society for Ozone, which has branches in Germany, Austria, Italy and Switzerland.

Cancer treatment

As double Nobel Prizewinner Otto Warburg showed, cancer cells cannot exist in a high oxygen environment. In 1974 Dr Joaquim Varro reported that such cells were inhibited by peroxide (*Erfahrungsheilkunde* 23;178-81). This was only confirmed in an English publication in 1980 when Dr Frederick Sweet and colleagues reported laboratory evidence that proved that ozone selectively inhibits the growth of cancer cells (*Science*, August 22, 1980; 209:931-2).

In the States early cancer research in the '60s at Baylor University in Dallas, Texas, by Dr JW Finney and his associates had shown the value of hydrogen peroxide as an adjunct in treating cancer by making cancer cells more sensitive to irradiation (*Southern Med J*, March 1962). A further study endorsed the value of H₂O₂ in shrinking the size of tumours (*BL Aronoff et al. Cancer* 1965;18:1250).

A subsequent Japanese study of 15 patients confirmed that H₂O₂ enhanced the effect of an anti-cancer agent (H Sasaki et al. *Yonago Acta Medica* 1967;11(3):149), while American researchers in New York reported in 1981: 'Hydrogen peroxide contributes to the lysis of tumor cells by macrophages and granulocytes in vitro.' (CF Nathan et al. *J Exp Med* 1981;154:1548). More recently, investigating effects on Hodgkin's disease, researchers at the University of California observed that 'peroxidase in Hodgkin's disease sensitizes the tumor cells to killing by low levels of hydrogen peroxide.' (MK Samoszuk et al. *Cancer* 1989;63:2114).

One of the first reports of successful cancer treatment with ozone using actual patients was reported, as mentioned above, by the German Dr Joachim Varro at the Sixth World Ozone Conference in 1983 and published in *Medical Applications of Ozone* (Ed. Julius LaRaus, Norwalk, Conn. pp 94-5). Dr Varro reported that patients experienced increased appetite, greater strength, and higher rates of physical activity and reduction in pain. He stated that patients were 'free of metastases and tumour relapses for remarkably long periods of time; survival time could be prolonged, far exceeding the usual dubious prognoses, even in cases of inoperability, radiation resistance, or chemotherapy non-tolerance, and with improved quality of life. Most patients who had undergone the combination therapy shortly after surgery and radiation could return full time to their occupations.'

To explore the suspicion that anti-cancer effects of ozone are due in part to its ability to induce release of tumour necrosis factor (TNF), Italian researchers at the University of Siena measured ozonated blood and observed that most TNF was released immediately after ozonation took place. (L Paulesu et al. *Lymphokine and Cytokine Res.* 1991;10(5):409-12).

At the Hospital Santa Monica in Mexico, founder Dr Kurt Donsbach uses intravenous H₂O₂ extensively to treat cancer patients, and has treated thousands, many of whom make a complete recovery. In his highly recommended book *Oxygen Healing Therapies* (Healing Arts Press, Rochester, Vermont, 1998), author Nathaniel Altman visited the hospital and asked Dr Donsbach about survival rates:

'Approximately 70 percent of our patients are alive three years after their first visit... Some are cured, some are in remission and some are slowly dying. However, very few of these patients had more than months to live according to their doctors when they arrived. But what kind of statistics are these? We see a significant percentage of our patients become totally and completely cured as documented by medical diagnostic standards.' (p. 86) A similar view was given when Altman visited Dr Horst Kief's clinic in Germany in 1993. The reported long-term remission rate for cancer patients was given as 60 percent, with another 20 percent experiencing improvement. (ibid, p. 87)

In their book *The Use of Ozone in Medicine* (Haug Publishers, Heidelberg, 1987; updated 1994), Drs Siegfried Rilling and Renate Viebahn state that doctors have used ozone therapy in angiology, dermatology, gastroenterology, gerontology, intensive care, gynaecology, neurology, odontology, oncology, orthopaedics, proctology, radiology, rheumatology, surgery and urology.

Wide range of other major uses

Research, especially in Cuba, has covered many areas. Ozone therapy is now routine in Cuban hospitals for those suffering from angina and heart attacks. A recent study at their Ozone Research Center on 22 heart attack patients found that therapy significantly decreased plasma total cholesterol and low-density lipoprotein, 'provoking the activation of antioxidant protection systems' (F Hernandez et al. *Free Rad Biol & Med* 1995;115-9). Another Cuban study of ischemic cerebrovascular disease in 120 elderly patients produced impressive results. The mental and physical condition of all patients improved significantly. Post-therapy tests showed that the subject's ability to participate in daily life situations improved in 80 to 95 percent of subjects in the three groupings (E Devesa et al. in *Ozone in Medicine: Proc 11th Ozone World Congress, Stamford, Conn. Int Ozone Assoc, 1993: M-4-10-18*).

Cuban scientists have also pioneered ozone therapy to treat eye diseases including glaucoma, corneal ulcers, atrophy of the optic nerve and diabetic retinopathy. They have had particular success in treating retinitis pigmentosa; in one study 89 percent of the 175 patients studied showed marked improvement that persisted for 2 years after treatment, while a 10-year study of 20 patients found that the best results were achieved when treatment was repeated twice a year, showing improvements of 70 percent in visual field and 42 percent in visual acuity (M Copello et al. in *Abstrs.: 2nd Int. Symposium on Ozone Applications, Havana: Ozone Research Center, 1997:36*).

At the same symposium Cuban doctors reported their success with 80 patients suffering from hepatitis A, B and C. Those receiving ozone were diagnosed as cured after 3 weeks; the control group took 6 months (Y Betancourt et al. *ibid. pp 61-2*).

Cuban doctors have also successfully treated skin diseases. In a study of herpes zoster (shingles), treated with ozonated sunflower oil and intramuscular injections for 15 days, all 15 patients showed marked improvement after only three applications and were judged symptom-free by the end of treatment, with no relapse after one year's follow-up (J Delgado, *Revista CENIC Ciencias Biologicas* 1993;20:160-2). Dr Heinz Conrad in Brazil (< biblio >) has obtained similar results. Other research has reported success in treating arthritis, asthma, dementia, diabetes, flu, giardiasis, Lyme disease, osteoporosis, sickle cell anaemia, TB and wounds.

In a very recent review article, with 101 references, Professor V Bocci at the University of Siena presents the case for re-admitting ozone therapy to the medical mainstream from which it was excluded by the growing domination of drug therapy many years ago (*Br J Biomed Sci.* 1999;56:270-9).

Clearly, British oncologists and other specialists have much to learn about oxidative therapies that would greatly help their patients - with virtually no side effects - and potentially save the NHS a fortune in ongoing unnecessary drug usage.

[BOX 210w]

Availability of treatment in the UK

Aside from hyperbaric oxygen therapy, there are only a handful of doctors offering treatment with ozone or hydrogen peroxide in the UK. One is Dr Patrick Kingsley, based in Osgathorpe, Leicestershire, who has used H₂O₂ for three years, chiefly for cancer, ME, MS and candida. A member of the International Oxidative Medicine association, he visits the States regularly, attending conferences and keeping up-to-date with research. He is aware of those GPs using these methods in other parts of the UK.

ECHO UK is a charity that for 10 years has provided information on hydrogen peroxide therapy and other oxygen therapies. It is run by Alwyne Pilsworthy and based at: Woodside, Melmerby, Ripon, North Yorks HG4 5EZ (01765 640798).

Another is Dr Simi Khanna, in High Wycombe, Bucks, who has been using such therapies for 10 years. Dr Fritz Schellander, based in Tunbridge Wells, also uses oxygen therapies. Previously based in Southampton, Dr Julian Kenyon now offers ozone therapy in London and Winchester.

In London holistic therapist Mark Lester offers a form of ozone treatment at his Finchley Clinic. Lester favours the use of a steam cabinet to provide transdermal therapy, which introduces ozone via the skin while sitting in the hot steam cabinet. Besides offering an alternative to those who don't like injections, transdermal ozone cleanses and de-toxifies the lymph, in which 90 percent of body fluids are stored and which often becomes sluggish. He finds it very beneficial for ME sufferers.

[BOX 810w]

Treating HIV/AIDS successfully The first research to show that ozone can inactivate the HIV virus was carried out by Dr Michael Carpendale and his colleagues at the Veterans Administration Hospital in San Francisco. Presented to an international AIDS conference in Stockholm in 1988, their in vitro results were published in 1991 (MT Carpendale, JK Freeberg, Antiviral Research 1991;16:281-92). They showed that HIV could be 99 percent inactivated by using only 0.5 ug ozone/ml of human serum, and completely inactivated by concentrations of 4 ug/ml of human serum, neither of which harmed healthy cells.

Another US in vitro study, supported partly by Medizone International, an American manufacturer of a patented ozone system, and the US Public Health Service, found that ozone deactivated a cultured cell medium of HIV-1 completely without causing significant damage to non-infected cells (KH Wells et al. Blood 1991;78(7):1882).

In Russia, at Moscow's Institute of Virusology scientists also used a concentration of 4 ug/ml of ozone on an HIV-infected culture and within minutes the cell of the virus had decomposed and died (GV Kornilaeva et al. in Ozone in Biology and Medicine, Nizhni Novgorod, 1992, p.86).

A study by the Canadian Armed Forces to determine the ability of ozone to kill HIV, hepatitis and herpes viruses in blood for transfusion found that a three-minute ozonation of serum spiked with 1 million HIV-1 particles per millilitre achieved a 100 percent deactivation of the virus (AG Baggs, Can Med Assoc J.1993; April 1:1159). As a result, the Canadian Government sponsored a study with 24 actual AIDS patients using autohemotherapy. Although the first phase of the study produced encouraging increases in T-cell counts, the second phase was marred by a faulty generator that failed to produce ozone, leading to inconclusive results (GE Garber et al. AIDS 1991;5:981-4). Rather than attempting a replication of this study (which is sometimes quoted - inaccurately - as a negative result), little interest was shown by the Canadian or any other Government in researching the huge potential of ozonation, despite the earlier, highly impressive, blood study results. However, Medizone International is trying to conduct clinical trials.

In the US early studies by Dr Michael Carpendale and colleagues in San Francisco indicated that ozone could boost T-cell counts and eliminate infection for over five years (Ozone in Medicine: Proc 11th Ozone World Congress, Stamford, Conn: Int Ozone Assoc, 1993, M-1-38-43). In a further study Carpendale eliminated intractable diarrhea in four patients after 21-28 days of colonic insufflations of ozone (J Clin Gastroent. 1993;17:142-5).

Another study by Dr Frank Shallenberger, considered one of the States' leading authorities on medical ozone, on five AIDS patients produced an immediate increase in T-cells, relief of symptoms of opportunistic infections, and higher energy levels. (Proc: 4th Int Bio-Oxidative Medicine Conference, Oklahoma City, IBOM, 1993). Such results have prompted other doctors, such as Dr John Pittman, of North Carolina, to start treating such patients with both ozone and H₂O₂ and to collect data on patients receiving such therapies throughout the US.

In Germany, Dr Horst Kief, who has pioneered the development of autohomologous immunotherapy (AHIT) using ozone, has treated many HIV/AIDS patients since 1985. In a 1993 monograph Kief records his success with AIDS patients, reporting in one study of 27 patients that 80 percent survived longer than 18 months and 70 percent longer than 45 months, representing a much higher percentage than those treated conventionally (Ozone and the AHIT Therapy in AIDS Patients, Ludwigshafen, Kief Clinic, 1993).

This follows a report on four patients treated by Dr Alexander Preuss in 1986 in which he reported their immediate improvement and elimination of skin diseases, fungal infections, gastrointestinal problems and low energy (OzoNachrichten 1986;5:3-5). One year later all patients were considered clinically healthy. At present Dr Juliane Sacher of Frankfurt has one of the largest medical practices treating AIDS patients with ozone.

BOX [233w; plus extra Caution]

How bio-oxidative therapies work Leading US authority, Nevada-based Dr Frank Shallenberger has outlined their effects in Nathaniel Altman's Oxygen Healing Therapies (essential reading for those seeking the scientific evidence, p.19, see main text) as follows:

1. They stimulate production of white blood cells, necessary to fight infection;
2. Ozone and hydrogen peroxide are virucidal;
3. Both increase oxygen and hemoglobin disassociation, thus increasing delivery of oxygen from blood to cells;
4. Both are anti-neoplastic, inhibiting the growth of new tissues like tumours;
5. Bio-oxidative therapies oxidize and degrade petrochemicals;
6. They increase red blood cell membrane distensibility, thus enhancing their flexibility and effectiveness;
7. They increase the production of interferon and tumour necrosis factor, used to fight infection and cancer;
8. They increase the efficiency of the antioxidant enzyme system, which scavenges excess free radicals;
9. They accelerate the citric acid cycle, the main cycle for liberating energy from sugars, which then stimulates basic metabolism
10. These therapies increase tissue oxygenation, which brings about patient improvement.

Another important fact is that cancer cells are weakened through fermentation, which produces only 1/19 the amount of ATP compared to oxidation, and therefore are chronically short of energy, which renders them unable to manufacture the anti-oxidant enzymes glutathione peroxidase, superoxide dismutase, catalase and reductase that protect every normal cell from oxidative destruction. Thus they are completely vulnerable to cell lysis by ozone and H₂O₂. By flooding the body with oxygen, these therapies aim to maximise biological 'combustion' of both energy supplies and toxins through proper oxidation, enabling elimination of toxic substances and boosting of the immune system. Factors leading to oxygen deficiency include devitalised food, poor breathing, lack of exercise and air pollution: 100 years ago the percentage of oxygen in the air was around 22%; today it is 19%, and even less in very polluted cities.

A word of caution: both ozone and hydrogen peroxide are toxic in their purified states (ozone is potentially damaging to the lungs if inhaled), but are safe and effective when diluted to therapeutic levels and administered by an experienced practitioner, who should be consulted before starting any course of treatment.

BOX[218 w]

The suppression of oxygen-ozone therapies The American Federal Drug Administration (FDA) has a history of harassing doctors using ozone generators, which are presently outlawed in many states. The leading US campaigning journalist Ed McCabe, author of Oxygen Therapies (see main text), recounts the saga around their refusal, until very recently, to allow human trials of ozone therapy, accused of defending drug companies' vested interests. Clinics have been closed down and doctors threatened with having their licenses revoked with they administer ozone or hydrogen peroxide. According to McCabe, in 1975 the US Government General Accounting Office studied the FDA and revealed that 150 FDA officials owned stock in the companies they were supposed to be regulating.

Perhaps the best known case, according to Nathaniel Altman (Oxygen Healing Therapies), is that of Dr Robert Atkins, director of the Atkins Center for Complementary Medicine in New York, who had his licence revoked by the FDA for treating patients with ozone. In 1993 his successful court case against New York State to regain his license resulted in the passing of a law permitting physicians to use ozone and other non-FDA-approved techniques. Many of the battles to get such therapies recognised are recorded in the award-winning 1993 documentary Ozone and The Politics of Medicine produced by Geoffrey Rogers of Threshold Film, Vancouver, B.C, which is available on video.

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