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Ultraviolet Blood Irradiation Therapy (Photo-Oxidation) The Cure That Time Forgot

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Abstract

In the 1940s, a multitude of articles appeared in the American literature detailing a novel treatment for infection. This treatment had a cure rate of 98 to 100% in early and moderately advanced infections, and approximately 50% in terminally moribund patients. Healing was not limited to just bacterial infections, but also viral (acute polio), wounds, asthma, and arthritis. Recent German literature has demonstrated profound improvements in a number of biochemical and hematologic markers. There has never been reported any toxicity, side effects or injury except for occasional Herxheimer type reactions.

As infections are failing to improve with the use of chemical treatment, this safe and effective treatment should be revisited. (Int J Biosocial Med Res., 1996; 14(2): 115-132)

Key Words: Ultraviolet blood irradiation (photo-oxidation), infection, asthma, oxygenation, oxidation, vascular disease, toxin, immune system, chronic fatigue, infectious disease, bacterial anti-infective, detoxification, viral anti-infective, thrombophlebitis, botulism, toxemia of pregnancy, polio, i!eus, immune modulation, cytokine induction, Raynaud's disease, migraine, circulatory and vascular disease

History

Ultraviolet (UV) light has been known for decades to have a sterilizing effect and has been used in many different industries for such a purpose. Almost all bacteria may be killed or attenuated by ultraviolet rays, but there is considerable variation in the rapidity of

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their destruction. Those which live in the body are most easily affected, while those in nature adapt to the action of sunlight and become relatively resistant to irradiation.[1] LTV-sensitive bacteria have not been shown to become resistant and toxins have been found to be very unstable in the presence of UV irradiation (Diphtheria, tetanus, and snake venom are inactivated by ultraviolet rays).[2]

At the turn of the century, Niels Finson was awarded the Nobel Prize for his work on UV rays and various skin conditions which showed a success rate of 98% in thousands of cases, mostly lupus vulgaris.[3] Walter Ude reported a series of 100 cases of Erysipelas in the 1920s, claiming a nearly 100% cure rate with UV skin irradiation.[4] Emmett Knott pioneered the irradiation of autologous blood on dogs before treating a moribund woman with postabortion sepsis in 1933, who was thought to be untreatable. With his treatment of blood irradiation, she promptly recovered, resulting in more research and further development of the "Knott" technique.[5] The technique involved removing approximately 1.5cc/pound, citrating it for anticoagulation, and passing it through a radiation chamber. Exposure time per given unit amount (1cc) was approximately 10 seconds, peak wavelength of 253.7nM (ultraviolet C) provided by a mercury quartz burner and immediately re-perfused.[6]

By the early 1940s, UV blood irradiation was being used in several American hospitals. Into the late 1940s, numerous reports were made about the high efficacy for infection and complete safety of UV blood irradiation. With the emergence of antibiotic therapy, the reports suddenly ceased.

In the ensuing years, German literature demonstrated the effectiveness of UV irradiation in vascular conditions. Additionally, more thorough observations of significant improvement in many physiologic processes and parameters have been reported.

American Findings

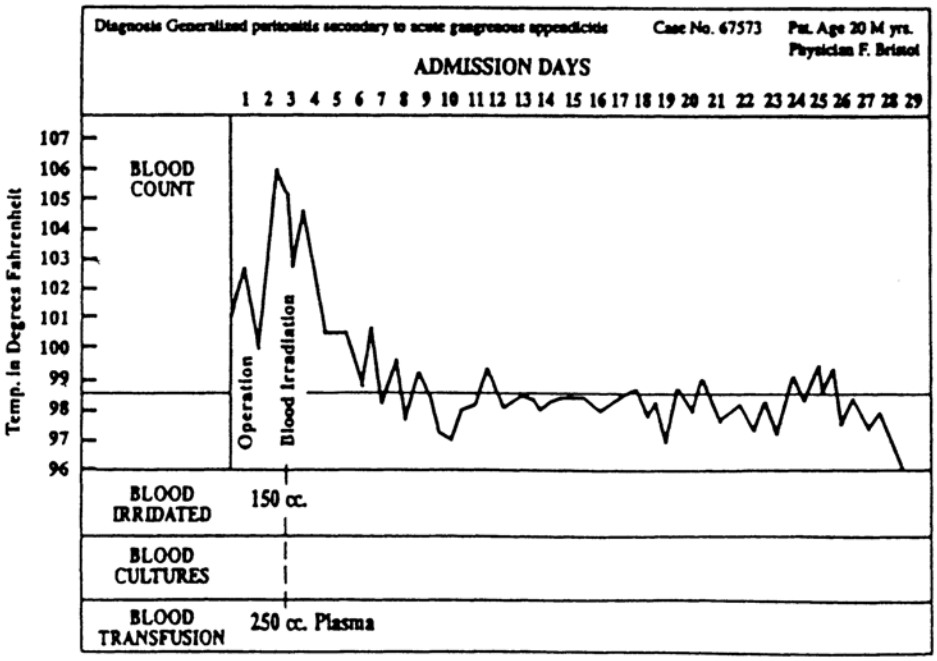
The most prolific American researcher was George Miley, a clinical professor at Hahnemann Hospital and College of Medicine, who practiced the Knott technique at their blood irradiation clinic. In 1942, he reported on 103 consecutive cases of acute pyogenic infections at Hahnemann Hospital in Philadelphia. Such conditions included puerperal sepsis, sinusitis, pyelitis, wound infections, peritonitis (ten cases), and numerous other sites. Results of recovery were 100% for early infections, 46 out of 47 for moderately advanced, and 17 out of 36 of those who were moribund.[7] Staphylococcus had a high death rate, but those patients were also using sulfa drugs, which may have

inhibited the effectiveness of the UV irradiation treatments. In fact, when Miley reviewed his data, he found that all the Staph failures had been on

sulfa. A second series of nine patients (six Staph aureus, three Staph albus) had a 100% recovery rate with one or two treatments when sulfa was not used.[8] (Table 1).

Rebbeck and Miley documented the fever curve of septicemia in patients who received UV therapy, demonstrating detoxification and recovery within a few days.[9](See Fig. 1). In 1947, Miley reaffirmed his initial findings reporting on 445 cases of acute pyogenic infection, including 151 consecutive cases. Again, results showed a 100% recovery in early cases (56), 98% recovery in moderately advanced (323), and 45% in apparently moribund patients (66) (see Table 2).[10] Detoxification usually began within 24 to 48 hours, and was complete in 46 to 72 hours. Some patients required only one or two irradiation treatments, while a few needed one or two more.

Figure 1.
Ultraviolet Blood Irradiation in Peritonitis



Male of 20, who after operation was comatose, in shock, and apparently moribund, with a fulminating toxemia due to generalized peritonitis secondary to a ruptured appendix. Within 24 hours of ultraviolet blood-irradiation therapy detoxification was pronounced and the downhill course of the patient reversed. An eventful convalescence ensued.

TABLE I

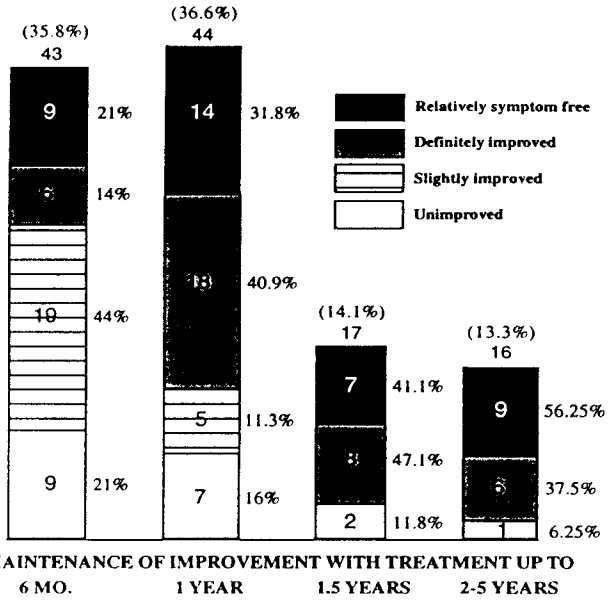
No.	Hospital Number	Type of Staphylo-coccemia	Primary Infection	Type of Sulfa drugs Used	No. Blood Irradiations	No. of Days of Hospitalization		Result
						Total	Post-Irradiation	
1	81994	Aureus	Marked erysipeloid inflammatory process of right ear	ST (before appearance of staphylococcemia	1	20	12	R*
2	84630	Aureus	Incomplete septic abortion	None	1	16	11	R
3	88168	Aureus	Incomplete septic abortion	None	2	19	16	R
4	88167	Aureus	Incomplete septic abortion	None	1	10	9	R
5	82484	Aureus	Incomplete septic abortion	None	1	20	7	R
6	83141	Albus	Acute ulcerative rhinitis, acute suppurative otitis media, acute mastoiditis, incomplete septic abortion	None	2	39	17	R
7	38082	Albus	Incomplete septic abortion, putrid endo-metritis, parametritis, pelvic peritonitis	None	2	12	7	R
8	86768	Aureus	Post-measles upper respiratory infection	None	2	19	16	R
9	50698	Albus	Postcesarean pelvic thrombophlebitis	None	1	33	11	R

*R - Recovered

In 1943, Rebbeck[11], reported on eight cases of E.coli sepsis treated with UV phototherapy - six lived. Barrett reported in his cases of septic toxemia, that pain associated with infection was typically relieved with ten to 15 minutes of hemo-irradiation.[12] Toxemia of pregnancy responded in all 100 patients with no serious complications, even after the onset of convulsions.[13]

Spectacular detailed reports of hopeless cases responding to UV phototherapy regularly appeared in the American literature. Barrett reported on a patient who had cerebellar artery thrombosis, pneumonia, pulmonary emboli - left femoral leg, deep-venous thrombosis, left-sided paralysis, and paralysis of the left vocal cord. This dying patient responded dramatically, almost instantly, and had a full recovery over a period of several months.

Table 3.



Time of maintenance and improvement in 120 patients with apparently intractable bronchial asthma who received ultraviolet blood irradiation therapy for six months to five years

Miley reported on 13 patients with thrombophlebitis, including some infections. Nine received only one treatment, while two had two treatments and healing was noted within hours to two days. Most were discharged from the hospital in an average of 12 days.[14]

In June, 1943, Miley reported on asthma response in a series of 80 "intractable" patients. Twenty-four patients were not followed up, which left only 56 patients to document. Of these, 29 were moderately to greatly improved, 16 were slightly improved, and 11 had no improvement after a period of six to ten months. The 45 who had improved remained so for six to ten months, after an initial series of up to ten irradiations.[15] In 1946, Miley,[16] reported on a larger series of 160 consecutive patients with "apparently intractable asthma"; 40 cases could not be followed, leaving 120. The results (Table 3) were better than his initial findings, with 32.5% apparently cured, 31.6% definitely improved, 22.5% slightly improved, and 13.4% unchanged. The authors commented that two to five treatments a year were often required for maintenance. Cyanosis of many years' duration, disappeared within one year of therapy, and a marked increase in general resistance was observed; no deleterious effects were noted.

Miley and Christensen reported on polio treated with blood irradiation[17] (Table 4). Fifty-eight cases were followed, including seven with Bulbar polio (40% death rate expected). Only one death

Table 4.

Results in 74 Cases of Virus or Virus-Like Infections

	No. of cases	Recovered	Died
Early			
Primary atypical or "virus" pneumonia	2	2	
Poliomyelitis			
Bulbo spinal type	0	0	
Spinal type	36	36	
Moderately advanced			
Primary atypical or "virus" pneumonia	11	11	
Poliomyelitis (non- toxic)			
Bulbo spinal type	4	4	
Spinal type	11	11	
Mumps	1	1	
Apparently moribund			
Primary atypical or "virus" pneumonia	2	2	
Poliomyelitis			
Bulbo spinal type	7	6	1

The poliomyelitis patients were consecutively treated in an epidemic in which the mortality of the untreated cute bulbar cases exceeded 40 percent, as opposed to that of 9 percent in the cases above.

occurred in the Bulbar group and none in the others. Rapid recovery was reported after the first treatment (24 to 48 hours). One to three treatments were all that was necessary in the majority of cases.

Effectiveness in other viral conditions was further documented by Olney.[18] His report documented 43 patients with acute viral hepatitis treated with the Knott technique. Thirty-one patients had acute infectious hepatitis; 12 had acute serum hepatitis (hepatitis B). An average of 3.28 treatments per patient were administered; the average period of illness after the treatment, was 19.2 days; two recurrences were observed among the 43 patients during a follow-up period averaging 3.56 years, one in each type of hepatitis. The one suspected recurrence in the "serum" variety was in a heroin addict and reinfection was suspected. No deaths occurred among the 43 patients during the follow-up period. Marked improvement and rapid subsidence of symptoms was noted in all patients treated and within three days or less, in 27 patients. 11 showed marked improvement in 4 to 7 days, and five patients showed improvement in 8 to 14 days.

Rebbeck reported a remarkable effect on the autonomic nervous system, documenting how postsurgical paralytic ileus could be relieved very quickly with UV blood irradiation.[19] He attributed this effect to toning the autonomic nervous system. Autonomic effects also can be appreciated in the reports on asthma.

The authors were so impressed with the results that they included numerous case reports of hopeless and long-suffering infectious conditions resolving with UV blood irradiation. Rebbeck reported on its prophylactic preoperative use in infectious conditions, concluding that the technique provided significant protection with a marked decrease in morbidity and mortality.[20]

The authors consistently reported beneficial peripheral vasodilation. A significant rise in combined venous oxygen was also repeatedly mentioned.[21] The remarkable lack of any toxicity was consistently noted by all authors. In addition to polio, Miley reported that viruses, in general, responded in similar fashion to pyogenic infections.[22]

Botulism, a uniformly fatal condition, was treated by Miley.[23] The patient was in a coma and could not swallow or see. Within 48 to 72 hours of one irradiation treatment, the patient was able to swallow, see, and was mentally clear. She was discharged in excellent condition in a total of 13 days.

LTV blood irradiation resulted in the prompt healing of chronic very long-term, non-healing wounds. [24]

Miley went on to discuss an "ultraviolet ray metabolism," based on the profound physiologic effects he noted, along with discoveries that hemoglobin absorbs all wavelengths of ultraviolet rays, and Gurwitsch's[25] demonstration of "mitogenic rays, tiny emanations given

off by body tissues in different wavelengths, all in the ultraviolet spectrum and varying in wavelength according to the organ emitting the rays..."

A summary of physiologic changes documented through the 1940s included the following.[26] An inactivation of toxins and viruses, destruction and inhibition of growth of bacteria, increase in oxygen-combining power of the blood, activation of steroids, increased cell permeability, absorption of ultraviolet rays by blood and emanation of secondary irradiations (absorbed UV photons re-emitted over time by the re-perfused blood), activation of sterols into vitamin D, increase in red blood cells, and normalization of white cell count.

Cancer

In 1967, Robert Olney privately printed, short, undated pamphlet, sent to me by a friend, and entitled *Blocked Oxidation,* in which he presented 5 cases of cancer, which were cured by a combination of techniques, including ultraviolet blood irradiation. He theorized, based on the work of previous researchers, that cancer was a result of blocked oxidation within the cells. Utilizing detoxification techniques, dietary changes, nutritional supplements, the Koch catalyst, and ultraviolet blood irradiation, he reported the reversal of generalized malignant melanoma, a breast cancer penetrating the chest wall and lung, highly metastatic colon cancer, thyroid cancer, and uterine cancer.

Modern research on ultraviolet treatment for cancer is continuing. Edelson reported on a variation of the technique called extracorporeal photophoresis.[27] In this particular technique, a photosensitizing agent, 8-methoxypsoralen (8-MOP), is given to patients two hours before blood is withdrawn and separated into cellular components. White blood cells were irradiated with UV-A and returned to the patient. This therapy has proven highly successful and actually has received FDA approval for its use in cutaneous T-cell lymphoma (CTCL). Gasparro explains the observed and presumed biochemical events underlying the response in this condition. Such response includes the induction of cytokines and interferons.[28]

German Findings

Recent German research reports significant improvement in vascular conditions when using ultraviolet blood irradiation, including peripheral arterial disease and Raynaud's disease. One study

demonstrated a 124% increase in painless walking for patients with Stage Ilb occlusive disease (Fontaine), as compared to 48% improvement with pentoxifylline.[29] UV blood irradiation was found to improve claudication distances by 90% after a series of ten treatments.[30] The authors also reported an 8% drop in plasma viscosity with the treated group, compared to no change with Pentoxifylline.

Significant changes and improvements in physiologic, biochemical, and blood rheological properties have been observed. A summary of these effects, based on the works of Frick[31] appear in Table 5.[32] This article expanded on indications to all circulatory diseases, including post-apoplexy, diabetes, venous ulcers, and migraines.

Frick reported an increase in prostacyclin and a reduction in arteriosclerotic plaque. The biochemical effects are generated by the activation of molecular oxygen to singlet oxygen by UV energy. This active species initiates a cascade of molecular reactions, resulting in the observed effects. Ultimately, this controlled oxidation process leads to a rise in the principle antioxidant enzyme systems of the body - catalase, superoxide dismutase, and glutathione peroxidase. Contraindications included porphyria, photosensitivity, coagulopathy (hemophilia), hyperthyroidism, and fever of unknown origin, but not pregnancy.

The device utilized in these reports is the Oxysan EN 400 manufactured by the Eumatron Company.

Discussion

In the 1800s, arguments raged between Pasteur and his rival, Bechamp, over the true cause of infectious disease. Pasteur claimed the cause was the organism alone, while Bechamp claimed the disease rose from organisms already within the body, which had pleomorphic capability (the ability to change). It is rumored that Pasteur, on his deathbed, admitted that Bechamp was correct. Forgotten in the debate was Bernard who argued it was the terrain or fertility of the body, which permitted disease or allowed bacterial infection to take root. Perhaps UV blood irradiation can be explained best in the general effect of the treatment on the physiology and terrain of the body. For example, it is known that the phagocytic respiratory burst, in response to infection, consumes up to 100 times the oxygen that white cells require in the resting state. The improvement in oxidation, rise in red blood cells, and increase in red cell 2,3 DGP[33] may provide a significant boost to the body.

Table 5.

Findings of German Research

BIOPHYSICAL AND CHEMICAL EFFECTS

- Improvement of the electrophoretic movability of the red blood cells
- Elevation of the electrical charge on the red blood cell
- Lowering of the surface tension of the blood
- Origin of free radicals
- Elevation of the chemical illuminescence of blood

HEMATOLOGIC CHANGES

- Increase in erythrocytes
- Increase in hemoglobin
- Increase in white blood cells
- Increase in basophilic granulocytes
- Increase in lymphocytes
- Lowering of thrombocytes;

HEMOSTATIC CHANGES

- Lowering of fibrin
- Normalization of fibrinolysis
- Trend towards normalization of fibrin-split products
- Lowering of platelet aggregation

BLOOD PARAMETER CHANGES

- Lowering of full-blood viscosity
- Lowering of plasma viscosity
- Reduction of elevated red blood cell aggregation tendencies

METABOLIC CHANGES - IMPROVEMENT IN OXYGEN UTILIZATION

- Increase in arterial P02
- Increase in venous P02
- Increase in arterial venous oxygen difference (increased oxygen release)
- Increase in peroxide count
- Fall in oxidation state of blood (increase in reduction state)
- Increase in acid-buffering capacity and rise in blood pH
- Reduction in blood pyruvate content
- Reduction in blood lactate content
- Improvement in glucose tolerance
- Reduction in cholesterol count, transaminases, and creatinine levels

HEMODYNAMIC CHANGES

- Elevation of poststenotic arterial pressure
- Increase in volume of circulation

IMPROVEMENT IN IMMUNE DEFENSES

- Increase in phagocytosis capability
- Increase in bacteriocidal capacity of blood
- Modulation of the immune status (Table 5)

Infection produces inflammation, edema, and a significant lowering of oxygen tension and diffusion in the affected tissues, which is critical to immune cell functions. Benefits of higher oxygen tension can be seen in the

accepted use of hyperbaric oxygen therapy for osteomyelitis, where healthy circulation is already slow. Deductive reasoning would suggest that any rise in oxygen tension would help the body's immune defenses. Such can be seen in anecdotal reports of hyperbaric oxygen therapy alone resolving necrotizing fascitis.

German research (Table 5) documents a rise in oxygen consumption and oxidation within the body stimulation of mitochondrial oxidation results in greater ATP production.

In effect, UV blood irradiation therapy may be providing an inactivation of bacteria, a more resistant terrain, improved circulation, alkalinization, etc. While perhaps not as dramatic a treatment as hyperbaric oxygen therapy, it may provide a similar and longer-lasting effect through the secondary emanations of the absorbed ultraviolet rays. Such emissions, which last for many weeks, may account for the observed cumulative effectiveness of the therapy. UV photons, absorbed by hemoglobin, are gradually released over time, continuing the stimulation to the body's physiology.

For eons, nature has utilized the sun's ultraviolet energy as a cleansing agent for the earth. The lack of resistance of bacteria to ultraviolet treatment is not surprising, since if bacteria could develop resistance, they have had approximately 3 billion years to do so.

Only two discrepancies in accounts of this therapy could be found between the older American and modern German literature. Venous oxygen tension was reported by Miley to be increased, even up to one month after treatment. Frick, on the other hand, reported a rise in Pa02, and a fall in PV02, suggesting greater oxygen delivery and absorption in the tissues. A rise in 2,3 DGP can account for the latter. Miley recommended the treatment for fevers of unknown origin,[34] yet Seng's article suggested that as a contraindication. Perhaps the German author feels the infections should be clearly diagnosed first, while Miley was so impressed with his results and the safety of the treatment, he thought it was proper to treat any presumed infection with the technique.

For years, there have been anecdotes and reports of another oxidative therapy (ozone) helping a variety of chronic conditions including, but not limited to, rheumatoid diseases, arterial and circulatory disorders, osteoporosis pain, viruses, and immune deficiencies. Some recent findings shed light on how this particular oxidative therapy might help such a wide variety of conditions.

Bocci has determined that exposure of blood to ozone at concentrations used by practitioners for years induces cytokines and interferons.[35,36] In fact, he went on to call ozone "an almost ideal cytokine inducer." He concluded that such immune system modulation could explain the benefits of ozone reported for decades on a very wide variety of conditions.

Mattman has detailed hundreds of reports linking cell wall deficient bacteria to a wide span of disease states.[37] Autoimmune disease may not be autoimmune at all, but rather an immune attack a hidden infection with native tissue being damaged by a prolonged or dysfunctional immune response to these "stealth pathogens."

The broad spectrum of biologic effects of these nonspecific oxidative therapies may explain the broad range of benefits. It is quite possible that all

of the oxidative therapies may operate through similar mechanisms postulated by Bocci for ozone (namely the generation of reactive oxygen species, which in turn induce some very exceptional biochemical events).

Ultraviolet has clearly been shown to be a superior anti-infective. It is possible that the secondary emanations previously described could inactivate pathogens deep in tissues. However, of possible greater import is its effect on the other various physiologic factors affecting the terrain. The improvement in oxygen delivery and consumption, rise in circulation, blood elements, stimulation of mitochondrial oxidation and shift towards alkalinity, while all nonspecific in themselves, may help hasten the cellular response in very many disease states.

Personal experience with UV blood irradiation therapy has been limited strictly to an outpatient practice. However, I have observed significant and dramatic effects on pharyngitis, cellulitis, otitis media, wounds, viral infections, and gastroenteritis, and chronic fatigue. In several years of use, I have had only one patient who suffered from apparent chronic fatigue and failed to respond to a series of UV treatments; the patient had a significant psychological factor. Several patients with multiple chemical sensitivities have also experienced significant improvement. Chronic and intractable pain has been reported by an anesthesiologist pain specialist to be surprisingly responsive.[38]

Modern medicine has focused on drugs to suppress symptoms or inhibit certain physiology (NSAID drugs as prostaglandin inhibitors, hypertensive drugs as enzymatic blockers) to treat disease. As a result, we have seen the frightening rise of resistant organism and the side-effects of chemical pharmacology. Perhaps medicine should consider the concept of nonspecific modalities that encourage the body's healing response and immune system. What could be a safer or more effective agent against infection than the bacteriocidal capabilities of our own phagocytes and a properly functioning immune system?

At least 20 American physicians are currently utilizing photooxidation and have advised me of dramatic cures of intractable infections, including osteomyelitis. Communications from these physicians are verifying my findings in the use of this modality with chronic fatigue. A German videotape related that several hundred physicians are currently employing the technique in Germany with hundreds of thousands of treatments having been performed through the years and never any reported incidents of toxicity (other than a mild Herxheimer reaction).

"Ultraviolet irradiation of blood has been approved by the FDA for the treatment of cutaneous T-cell lymphoma. Thus, the method is legal within the context of FDA's definition of legality. It is also legal, from the standpoint of long (over 50 years) and continuous use by physicians in the United States as a commercially viable product before the present FDA was even in existence. "[39]

The technique is taught at workshops and seminars sponsored by the International Association of Oxidative Medicine (telephone: 405634-1310). The American Board of Oxidative Medicine (a member of the American Board of Specialities of Alternative Medicine) certifies doctors in the various techniques of oxidative medicine, including UBIT.

Conclusion

This simple, inexpensive, and nonspecific technique was clearly shown years ago to be a totally safe and extremely effective method of treating and curing infections; promoting oxygenation; vasodilation; improving asthma; enhancing body physiology, circulation, and treating a variety of specific diseases. Its use in hospitals and offices could significantly reduce mortality, morbidity, and human suffering. Much more research needs to be done in determining all of the potential uses of ultraviolet blood irradiation therapy and also its correlation with other oxidative therapies.

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