

Ozonoterapia :

(Es el resultado de la suma de dos palabras, **ozono** y **terapia** que tienen el siguiente origen etimológico:

-**Ozono** procede del griego, concretamente de “ozon”, que puede traducirse como “oliente”, y que deriva del verbo “ozein”, que significa “oler”.

-**Terapia**, por su parte, también procede del griego. Exactamente deriva del sustantivo “therapeia”, que puede traducirse como “tratamiento” y que es el resultado de la suma de dos componentes léxicos: el verbo “therapeuein”, que es equivalente a “cuidar” o “atender”, y el sufijo “-eia”, que se usa para indicar “cualidad”).

Tratamiento realizado con gas **Ozono** que es generado a partir de Oxígeno médico (pureza 99,9%), y se administra en concentraciones distintas, según el efecto deseado, Ya sea como tratamiento único o como terapia complementaria.

Las dosis son acumulativas y sus efectos perduran en el tiempo. No tiene efectos secundarios y muy pocas contraindicaciones.



Efectos biológicos del ozono

Cuando el ozono se introduce en el organismo, se disuelve rápidamente en el agua del plasma, o en los fluidos extracelulares o en la fina capa de agua que cubre la piel y en las mucosas del intestino, vagina, etc y reaccionando inmediatamente con diferentes biomoléculas generando un conjunto de mensajeros importantes (especies reactivas del oxígeno ERO y productos de oxidación lipídica POL, para luego desaparecer).

Inmediatamente y debido a su gran reactividad, **el ozono reacciona con compuestos como antioxidantes, proteínas, carbohidratos y preferentemente los ácidos grasos poliinsaturados (AGPI), ácido ascórbico y úrico.**

Se conoce que un exceso de radicales libres es dañino, sin embargo, **el ozono induce un pequeño, controlado y transitorio estrés oxidativo**, que lejos de producir daño, **estimula los sistemas de defensa antioxidante**, aspecto este que no debe ser confundido con el estrés continuado y progresivo (estrés crónico) que se mantiene en muchas patologías. **Este efecto preconditionante del ozono es capaz de reequilibrar el estado redox alterado en el organismo por algún estímulo patológico.**

Sustancias biológicas que reaccionan con el ozono



Otros de los **efectos biológicos del ozono** son:

- *mejora la circulación sanguínea* y los procesos de oxigenación
- *modula el sistema inmunológico*, regula el metabolismo
- *efecto germicida* (bactericida, virucida, fungicida y antiparasitario)
- interviene en la *liberación de autacoides*
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Es importante recalcar que estas variadas acciones biológicas alcanzan resultados terapéuticos cuando el ozono es aplicado a dosis adecuadas y por una vía no dañina para el organismo. De este modo, no se producen reacciones adversas ni daño genotóxico y el amplio espectro de efectos que genera, hace posible su aplicación en una gran diversidad de especialidades médicas y dentro de estas, en una disímil variedad de procesos patológicos.

¿Como actúa?

- **Efectos del ozono sobre el metabolismo del oxígeno:**

En los casos de alteración de la oxigenación pueden ser explicados los efectos del ozono por sus acciones directas e indirectas, en las siguientes reacciones:

1. Mediante un cambio en las propiedades reológicas de la sangre.
2. Mediante un incremento en la velocidad de la glicólisis en el eritrocito.
3. Mediante la activación de la cadena respiratoria mitocondrial.

- **El ozono como modulador del estrés oxidativo:**

Aunque la producción de especies reactivas del oxígeno tales como el radical hidroxilo, el anión superóxido y especies no radicálicas como el peróxido de hidrógeno, el ácido hipocloroso, son partes del metabolismo biológico normal y es además un fenómeno necesario para el adecuado funcionamiento de procesos vitales como es la

fagocitosis, el incremento no controlado de estos productos están muy relacionados, con varias patologías así como el envejecimiento.

- El ozono como agente modulador de la respuesta inmunitaria:
El ozono ha sido considerado como agente inductor ideal de citocinas, su eficacia inmunomoduladora hacen posible su aplicación no solo en las deficiencias sino también en las **enfermedades autoinmunes**.

- **Efectos del ozono sobre la síntesis y/o liberación de autacoides:**

La palabra autacoides deriva del griego "auto"(propio) y del vocablo "akos" (agente medicinal o remedios) y se considera como tal a un grupo de sustancias endógenas con diversas acciones fisiológicas y farmacológicas las cuales participan en muchos eventos fisiológicos. Dos familias diferentes de autacoides derivados de los fosfolípidos de las membranas celulares han sido identificadas. Los eicosanoides, formados a partir de ciertos ácidos grasos polinsaturados (principalmente ácido araquidónico) donde se incluyen las prostanglandinas, prostaciclina, el tromboxano A2 y los leucotrienos, y otros fosfolípidos representados por el Factor Activador de Plaquetas.

- **Efecto del ozono como regulador metabólico:**

En diferentes estudios realizados se ha constatado la acción reguladora del ozono en diferentes parámetros bioquímicos, tales como glicemia, colesterol, triglicéridos, creatinina, siendo mejorados al concluir el ciclo. Además, aquellos con valores en rango se mantienen estables a lo largo del mismo. El ozono mediante mecanismos endógenos trata de normalizar el funcionamiento del organismo.

- **Efecto germicida del ozono:**

El ozono es reconocido como un agente germicida contra virus, bacterias y hongos. Esta propiedad lo ha hecho útil en enfermedades infecciosas de variada etiología, dado a su acción directa contra a microorganismo, así como por la respuesta inmunitaria que puede accionar.

- **Efecto del ozono sobre la activación plaquetaria:**

En investigaciones realizadas (Matsuno K, 1997) en el plasma rico en plaquetas (PRP) y en la suspensión de plaquetas lavadas, tratadas con ozono, se observó la inhibición de la agregación plaquetaria, el ozono inhibió el aumento de la concentración de calcio inducida por colágeno y la trombina, inhibiendo a su vez la señal de transducción entre el inductor y la activación plaquetaria.

Vías de administración:

Ozonoterapia sistémica:

- **Ozonoterapia Sistémica Venosa:** Se extrae sangre en cantidad ajustada al peso del paciente, en un circuito cerrado, homologado por la agencia europea del medicamento, estéril y con anticoagulante. Se pone en contacto con una cantidad de ozono médico determinada por el Facultativo. Una vez mezclada, estabilizada y utilizando la misma vía, se reinfunde al paciente.
- **Ozonoterapia Rectal:** Mediante una sonda de tamaño y longitud adecuada al paciente, se insufla con una jeringa, una mezcla de oxígeno y ozono en el recto, con una concentración, volumen y frecuencia indicado por el médico.

Ozonoterapia tópica:

- **Local (bolsa o campana):** Se coloca un dispositivo de aislamiento de la lesión/lesiones (bolsa o campana), en la zona afectada: herida, úlcera, quemadura. Se crea vacío y se establece un flujo de ozono a una concentración y tiempo determinado. La cantidad, número de sesiones y tipo de aplicación son decididas por el médico, en función del paciente y puede modificarlas según la respuesta al tratamiento.
- **Paravertebral:** Se inyecta en la musculatura paravertebral y/o cerca de la lesión, una mezcla de oxígeno con gas ozono. La técnica se puede realizar con anestesia local. La concentración de ozono, número de sesiones y tipo de infiltración son decididas por el médico, en función del caso concreto del paciente y de la respuesta del mismo al tratamiento.
- **Infiltración:** Se inyecta en la lesión una mezcla de oxígeno con gas ozono. Se puede realizar con anestesia local. La concentración de ozono, número de sesiones y tipo de infiltración son decididas por el médico, en función del caso concreto del paciente y de la respuesta del mismo al tratamiento.
- **Intravaginal:** Mediante una sonda, se insufla con una jeringa, una mezcla de oxígeno y ozono en la vagina con una concentración, volumen, frecuencia y número de sesiones indicado por el médico.
- **Subcutánea:** Se inyecta en la (hipodermis) una mezcla de oxígeno con gas ozono. La concentración de ozono, y número de sesiones, se realizaran en función del caso concreto del paciente y de la respuesta del mismo al tratamiento.

Las aplicaciones clínicas de la ozonoterapia

Los resultados clínicos disponibles hasta ahora han demostrado que la ozonoterapia es a menudo tan útil como los tratamientos habituales en enfermedades tales como:

- **Osteomielitis**
- **Empiema pleural**
- **Abscesos con fístulas**
- **Heridas infectadas**
- **Úlceras por presión**
- **Úlceras crónicas**
- **Pie diabético**
- **Quemaduras**

(Payr, 1935; Aubourg, 1940; Rokitansky, 1982; Miroshin and Kontorshikova, 1995; Werkmeister, 1995; Shaschova et al., 1995; Filippi and Kirschner, 1995; Wasser, 1995a; Bulinin et al., 1995; Kudravcev et al., 1995; Kasumjan et al., 1995; Steinhart et al., 1999; Valacchi et al., 2005; Travagli et al., 2009a; Menendez et al., 2010).

Enfermedades isquémicas avanzadas (isquemia de las extremidades inferiores y del corazón, secuelas de accidentes vasculares encefálicos y cardiacos, posiblemente

también ataque cardíaco, cuando los pacientes llegan demasiado tarde para la trombólisis) (Rokitansky, 1981, 1982; Romero et al., 1988; Amato, 2000; Giunta et al., 2001; Tylicki et al., 2001, 2003, 2004a, b; Biedunkiewicz et al., 2004; Di Paolo et al., 2005; Clavo et al., 2011).

Degeneración macular senil (forma atrófica), porque en oftalmología aún no se ha encontrado un tratamiento curativo (Riva Sanseverino et al., 1990; Bocci, 2002; Borrelli and Bocci, 2013).

Enfermedades neuro-degenerativas, tales como:

- disfunciones del nervio óptico
- retinitis pigmentosa
- glaucoma primario de ángulo abierto
- demencias seniles, incluyendo Alzheimer
- enfermedad isquémica cerebrovascular
- síndrome cócleo-vestibular
- etc.

(Rodríguez, García, et al. 1998; Rodríguez, Menéndez, Devesa, et al. 1998; Rodríguez, Menéndez, García, et al. 1998; Copello et al., 2003; Copello et al., 2013).

Enfermedades ortopédicas degenerativas e inflamatorias (como la osteoartritis,, etc)

(Riva Sanseverino, 1989; Verga, 1989; Siemsen, 1995; Bocci et al., 2000; Jucopilla et al., 2000; Alexandre et al., 2000, 2002; Bonetti et al., 2001; Fabris et al., 2001; Petralia et al., 2001; Tabaracci, 2001; Andreula et al., 2003).

Síndrome de fatiga crónica y fibromialgia

(Cosentino et al., 2000; Loconte, 2000; Borrelli and Bocci, 2002; Hidalgo-Tallón et al., 2012).

Estomatología:

Lesiones de las raíces dentales por caries, especialmente en niños (Baysan et al., 2000).

Infecciones crónicas y recurrentes en la cavidad oral (Lynch, 2004).

Enfermedades agudas y crónicas infecciosas, especialmente las que implican bacterias, virus y hongos, quimio y antibióticorresistentes (hepatitis, VIH-SIDA, infecciones herpéticas y herpes zoster, infecciones por papillomavirus, onicomicosis, candidiasis, giardiasis y criptosporidiosis) – la ozonoterapia parece un apoyo útil (Mattassi et al., 1985; Bocci and Paulesu, 1990; Konrad, 1995, 2001; Bocci et al., 1998c; Amato et al., 2000; Mawsouf et al., 2004; Bocci et al., 2009b).

En la fatiga por cáncer y la tolerancia a los quimioterápicos, la ozonoterapia, asociada con tratamientos habituales ha demostrado (Clavo, 2004b) su utilidad al mejorar la calidad de vida y disminuir los efectos adversos asociados a la quimio y la radioterapia.

Enfermedades autoinmunes (enfermedades reumáticas, psoriasis, Crohn, etc) (Menéndez et al., 1989; D'Ambrosi, 2002b; Esperanza, S., Ortellado, M., 2011; Molinari et al., 2014).

Demencia senil (Rodríguez et al., 1998).

Enfermedades pulmonares (enfisema, asma, enfermedad pulmonar obstructiva crónica, fibrosis pulmonar idiopática y síndrome agudo de dificultad respiratoria) (Hernandez et al., 2005; Bocci, 2007b).

Enfermedades cutáneas (psoriasis, síndrome de Stevens-Johnson y dermatitis atópica)

(Abeck and Plötz, 2008; Borrelli et al., 2008; Izzo, 2008; Menendez et al., 2010; Sirito, 2006; Travagli et al., 2009a, b, 2010c; Zamora et al., 2008, Re et al., 2015).

Cáncer metastásico (Akbarov et al., 2010).

Sepsis severa y disfunción múltiple de órganos (Bocci and Brito, 2006).

Contraindicaciones de la ozonoterapia.

- **Favismo mayor:** Pacientes que sufren de un déficit significativo de la glucosa 6 fosfato deshidrogenasa
- **Embarazo:** No estudiado en mujeres embarazadas. En estudios teratogénicos realizados en animales, no se han observado anomalías.

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Precauciones:

En algunas situaciones anormales (descompensación) en pacientes con hipertiroidismo y trombocitopenia.

Inestabilidad cardiovascular severa, (infarto del miocardio reciente).

Status convulsivos.

Cuadros hemorrágicos.

Reacciones adversas. «La ozonoterapia si se aplica respetando reglas sencillas, no tiene efectos colaterales y tiene muy pocas contraindicaciones». Numerosos experimentos clínicos indican que las reacciones adversas a los tratamientos con la mezcla ozono/oxígeno son raros y en la mayoría de las oportunidades están relacionados con errores en la técnica de administración.

El Ozono no es un fármaco y como tal no provoca efectos colaterales, no desarrolla trastornos alérgicos y en general no se han descrito interacciones con los otros fármacos. Solo en casos excepcionales el estímulo doloroso inducido por la punción de la aguja, o la percepción por el paciente de su propia sangre, puede inducir en el paciente una crisis vagal (bradicardia, baja presión y sudoración) que en general es transitoria y no necesita tratamiento farmacológico.

Por otro lado **la ozonoterapia obtiene también efectos secundarios positivos generales:** aproximadamente 3/4 de los pacientes, particularmente aquellos que se sienten depresivos y asténicos, informan de una sensación de bienestar y euforia tras unos tratamientos, así como refieren un sueño más reparador; también se observa,

generalmente a partir de cierta edad, aumento de la capacidad física, disminución del stress, mejora del apetito, etc.

Enlaces

Controversias y desinformación en torno a la ozonoterapia en COVID-19

Publicado el 18/8/2021



Sociedad Española de Ozonoterapia Ante las noticias en diversos medios de comunicación sobre la ozonoterapia y su uso por orden judicial en un paciente del hospital de La Plana en Villarreal, la **Sociedad Española de Ozonoterapia (SEOT)** quiere puntualizar:

- **La ozonoterapia ESTÁ INCLUIDA en la cartera de servicios del Sistema Nacional de Salud**, dentro de las Unidades de Dolor desde 2011 (1).
- Los tratamientos con ozono cuentan con **el apoyo y el aval científico de sociedades médicas** como la Sociedad Española del Dolor y la Sociedad Española Multidisciplinaria del Dolor.
- El **Ministerio de Sanidad**, Consumo y Bienestar Social, en 2019, inició el Plan de Protección contra las Pseudoterapias y tras un largo estudio creó un **listado de pseudoterapias** incluyendo 139 técnicas entre las cuales **NO figura la ozonoterapia** (2).
- La **Agencia Española del Medicamento y Productos Sanitarios ha autorizado varios ensayos clínicos con ozonoterapia** en los últimos 15 años habiendo clasificado los últimos que se han realizado sobre **hernia discal** como ensayos POST-AUTORIZACIÓN (código de estudio BCV-OZO-2016-01), considerando el uso en hernia discal como una indicación **autorizada**.
- Existen **artículos publicados en revistas de ALTO IMPACTO**, tanto ensayos clínicos, como revisiones sistemáticas y metaanálisis, que refrendan su uso en diversas patologías (3,4).
- En este momento existe un **ensayo clínico autorizado** para evaluar la eficacia y seguridad de la ozonoterapia en **COVID-19** para pacientes graves no críticos (código de estudio COVBO).
- También se han publicado los resultados de **ensayos clínicos** aleatorizados realizados **en Italia e India** que demuestran el efecto positivo de la ozonoterapia en pacientes no críticos y que han ayudado a que la AEMPS apruebe el estudio COVBO en España (5,6).

Entendemos la polémica que las decisiones judiciales pueden producir en cualquier ámbito de la vida, pero no es nuestra misión opinar sobre ellas. Sí debemos aclarar aquellas informaciones que se transmiten a la población, que no son ciertas y que se

usan para justificar críticas y decisiones alejadas de la medicina basada en la evidencia que dicen defender.

(1)

https://www.mscbs.gob.es/organizacion/sns/planCalidadSNS/docs/EERR/Unidad_de_tratamiento_del_dolor.pdf

(2) <https://www.mscbs.gob.es/gabinete/notasPrensa.do?id=4527>

(3) Lopes de Jesus CC, Dos Santos FC, de Jesus LMOB, Monteiro I, Sant'Ana MSSC, Trevisani VFM. Comparison between intra-articular ozone and placebo in the treatment of knee osteoarthritis: A randomized, double-blinded, placebo-controlled study. PLoS One. 2017;12(7):e0179185. Published 2017 Jul 24. doi:10.1371/journal.pone.0179185.

(4) Magalhaes FN, Dotta L, Sasse A, Teixeira MJ, Fonoff ET. Ozone therapy as a treatment for low back pain secondary to herniated disc: a systematic review and meta-analysis of randomized controlled trials. Pain Physician. 2012;15(2):E115-E129.

(5) Sozio E, De Monte A, Sermann G, et al. CORonavirus-19 mild to moderate pneumonia Management with blood Ozonization in patients with Respiratory failure (CORMOR) multicentric prospective randomized clinical trial [published online ahead of print, 2021 Jun 12]. Int Immunopharmacol. 2021;98:107874. doi:10.1016/j.intimp.2021.107874.

(6) Shah M, Captain J, Vaidya V, et al. Safety and efficacy of ozone therapy in mild to moderate COVID-19 patients: A phase 1/11 randomized control trial (SEOT study). Int Immunopharmacol. 2021;91:107301. doi:10.1016/j.intimp.2020.107301.

Nueva cátedra de ozonoterapia y dolor crónico

<http://www.ucam.edu/noticias/nueva-catedra-de-ozonoterapia-y-dolor-cronico>

Incorporación del la ozonoterapia al Grado de Veterinaria en la UCE-CEU

<http://www.seot.es/incorporación-del-la-ozonoterapia-al-grado-de-veterinaria-en-la-uce-ceu>

Sociedad Española de Ozonoterapia: SEOT

<https://www.seot.es/>

World Federation of Ozone Therapy: WFOT

<https://www.wfoot.org/>

Sociedad Española de Medicina Antienvjecimiento y Longevidad: SEMAL

<https://web.archive.org/web/20180709164000/http://www.semal.org/>

Envejecimiento y salud: OMS (Organización Mundial de la Salud)

<http://www.who.int/es/news-room/fact-sheets/detail/envejecimiento-y-salud>

Historia:

Por el Dr. Saul Pressman, DCH LTOH c.

El ozono en la naturaleza

En la naturaleza, hay un ciclo de oxígeno al igual que hay un ciclo de agua. El oxígeno es liberado de las plantas terrestres y el plancton en el mar durante la fotosíntesis. El oxígeno es más ligero que el aire y flota hacia arriba en la atmósfera. El ozono está presente de forma natural en pequeñas proporciones prácticamente en toda la atmósfera particularmente en la estratosfera a una distancia de 20 a 30 km sobre la superficie de la tierra. Una fuerte radiación ultravioleta en la longitud de onda de 185 a 200 nanómetros bombardea el oxígeno y se convierte una parte en ozono. El ozono creado existe como una fina capa en la atmósfera y que bloquea la pequeña porción del espectro UV que absorbe. La gran mayoría de la UV llega a la tierra lo que permite el bronceado.

El ozono también es creado por un rayo, y la cantidad producida en una tormenta promedio es a menudo el triple del límite permisible de 0.015 PPM según lo establecido por la EPA de Estados Unidos. Este ozono es lo que da el aire el maravilloso olor fresco después de una lluvia. El ozono también es creado por cascadas y olas rompiendo, lo que explica la sensación de energía y la calma experimentado cerca de estos sitios. Otra manera de ozono que se produce es por fotones del sol que se rompe aparte de óxido nitroso, un contaminante formado por la combustión de hidrocarburos en el motor de combustión interna. Este ozono se puede acumular en la niebla con humo debido a los cambios de temperatura y es un irritante de los pulmones y los ojos.

Estas son las formas de ozono creados por procesos naturales en la atmósfera.

El ozono médico

1870: Los primeros generadores de ozono fueron desarrollados por Werner von Siemens en Alemania en 1857, y 1870 vio el primer informe sobre el ozono se utiliza terapéuticamente para purificar la sangre, por C. Prestamista en Alemania.

1881: Hay evidencia del uso del ozono como desinfectante a partir de 1881, mencionado por el Dr. Kellogg en su libro sobre la difteria.

1893: En octubre de 1893, la planta de tratamiento de aguas primera del mundo que utiliza el ozono se instaló en Ousbaden, Holanda, y hoy hay más de 3.000 municipios de todo el mundo que utilizan el ozono para limpiar el agua y las aguas residuales.

1885: En 1885, la Asociación Médica de la Florida publicó "El ozono" por el Dr. Charles J. Kenworth, MD, detallando el uso del ozono con fines terapéuticos.

1896: En septiembre de 1896, el genio de la electricidad Nikola Tesla patentó su primer generador de ozono, y en 1900, formó la empresa de ozono Tesla. Tesla vende máquinas de ozono a los médicos para uso médico, lo mismo que estamos haciendo 100 años más tarde, con un diseño basado en una de sus máquinas desde la década de 1920. Hemos visto uno de estos viejos generadores de 75 años, y todavía funciona perfectamente. Tesla produce aceite de oliva ozonizado y lo vendió a los naturópatas, y lo siguen haciendo.

1898: En 1898, el Instituto para la terapia de oxígeno se inició en Berlín por Thauerkauf y Luth. Se inyecta ozono en los animales y el ozono unido a magnesio, produciendo Homozon.

A partir de 1898, el Dr. Benedict Lust, un médico alemán que ejerce en Nueva York, que fue el creador y fundador de la Naturopatía, escribió muchos artículos y libros sobre el ozono.

1902: En 1902, J. H. Clarke de "Un diccionario de la práctica Materia Medica", Londres, describe el uso exitoso de agua ozonizada en el tratamiento de la anemia, el

cáncer, la diabetes, la gripe, el envenenamiento por morfina, úlceras bucales, envenenamiento por estricnina y la tos ferina.

1911: En 1911, “Un Manual de Trabajo de corrientes de alta frecuencia” fue publicado por el Dr. Noble Eberhart, MD. El Dr. Eberhart fue jefe del Departamento de Terapéutica fisiológicos en la Universidad de Loyola. Se utiliza el ozono para el tratamiento de la tuberculosis, anemia, clorosis, zumbido de oídos, tos ferina, asma, bronquitis, fiebre del heno, el insomnio, la neumonía, la diabetes, la gota y la sífilis.

1913: En 1913, la Asociación Oriental para la terapia de oxígeno se formó por el Dr. Blass y algunos socios alemanes.

1915: Durante la Primera Guerra Mundial, se utilizó el ozono para el tratamiento de heridas, pie de trinchera, gangrena y los efectos del gas venenoso. El Dr. Albert Wolff de Berlín también utiliza el ozono para el cáncer de colon, cáncer de cuello uterino y las úlceras decúbito en 1915.

1920: En 1920, el Dr. Charles Neiswanger, MD, Presidente del Hospital de la Facultad de Medicina de Chicago publicó “Electro Terapéutica Práctica”. El capítulo 32 se titula “El ozono como agente terapéutico.”

1926: En 1926, el Dr. Otto Warburg del Instituto Kaiser en Berlín anunció que la causa del cáncer es la falta de oxígeno a nivel celular. Recibió el Premio Nobel de Medicina en 1931 y nuevamente en 1944, la única persona en recibir dos premios Nobel de Medicina. También fue nominado para un tercero.

1929: En 1929, un libro titulado “El ozono y su acción terapéutica” se publicó en los EE.UU. listado de 114 enfermedades y cómo tratarlas con ozono. Sus autores fueron los jefes de todos los hospitales estadounidenses principales.

1932: El dentista suizo E. A. Fisch fue el uso del ozono en odontología antes de 1932, y lo introdujo al cirujano alemán Erwin Payr que lo utilizó desde ese momento en adelante.

1933: En 1933, la American Medical Association, encabezada por el Dr. Morris Fishbein dedicó a destruir todos los tratamientos médicos que estaban competitiva a la farmacoterapia. La supresión de la terapia de ozono comenzó entonces, y continúa todavía en algunos estados de los EE.UU.

1934: Aubourg y Lacoste eran médicos franceses que utilizan la insuflación de ozono a partir de 1934-1938.

1948: En 1948, el Dr. William Turska de Oregon comenzó a utilizar el ozono, el empleo de una máquina de su propio diseño, y en 1951, el Dr. Turska escribió el artículo “Oxidación”, que sigue siendo relevante hoy en día, y que se incluye en nuestro folleto. Dr. Turska fue pionera en la inyección de ozono en la vena porta, alcanzando de este modo el hígado.

1953: De 1953 en adelante, el médico alemán Hans Wolff utiliza ozono en su práctica, escribir el libro “Ozono Médico”, y la formación de muchos médicos en la terapia de ozono.

1957: En 1957, el Dr. J. Hansler patentó un generador de ozono que se ha formado la base de la expansión alemana de la ozonoterapia en los últimos 35 años.

1961: En 1961, Hans Wolff introdujo las técnicas de la autohemoterapia mayor y menor.

1977: En 1977, el Dr. Renate Viebahn proporciona una visión general técnica de la acción del ozono en el cuerpo.

1979: En 1979, el Dr. George Freibott comenzó a tratar a su primer paciente de SIDA con el ozono, y en 1980, el Dr. Horst Kief también informó éxito el tratamiento del SIDA con el ozono.

1987: En 1987, el Dr. Rilling y el Dr. Viebahn publicaron “El uso del ozono en la medicina,” el texto estándar sobre el tema.

1990: En 1990, los cubanos informaron de su éxito en el tratamiento del glaucoma, conjuntivitis y retinitis pigmentosa con ozono.

1992: En 1992, los rusos revelaron sus técnicas de uso del ozono burbujeadado en

salmuera para el tratamiento de las víctimas de quemaduras con resultados sorprendentes.

Hoy, después de 125 años de uso, la terapia de ozono es una modalidad reconocida en muchos países: Alemania, Francia, Italia, Rusia, Rumania, República Checa, Polonia, Hungría, Bulgaria, Israel, Cuba, Japón, México, y diez estados de Estados Unidos.

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