

Ozone-Therapy

Applications and Indications of Medical Ozone

Ozone Seminar **C**ongress, Munich

May 23 –25, 2003

Medical Ozone

Medical Ozone is a mixture of pure Oxygen and pure Ozone

0,05 % O_3	-	5 % O_3 (Vol.)
99,95 % O_2	-	95 % O_2
1 μg /ml	-	100 μg /ml O_3

Indications for Ozone Therapy

- **Arterial Circulatory Disorders**
- **Immunodeficiency and Immunodysbalance**
 - Additive Therapy in Carcinoma Patients
 - Diseases caused by Viruses (espec. Hepatitis)
- **Inflammatory Conditions**
- **Rheumatic Diseases**
- **External Ulcers and Skin Lesions**
- **Dentistry**

Systemic Forms of Application

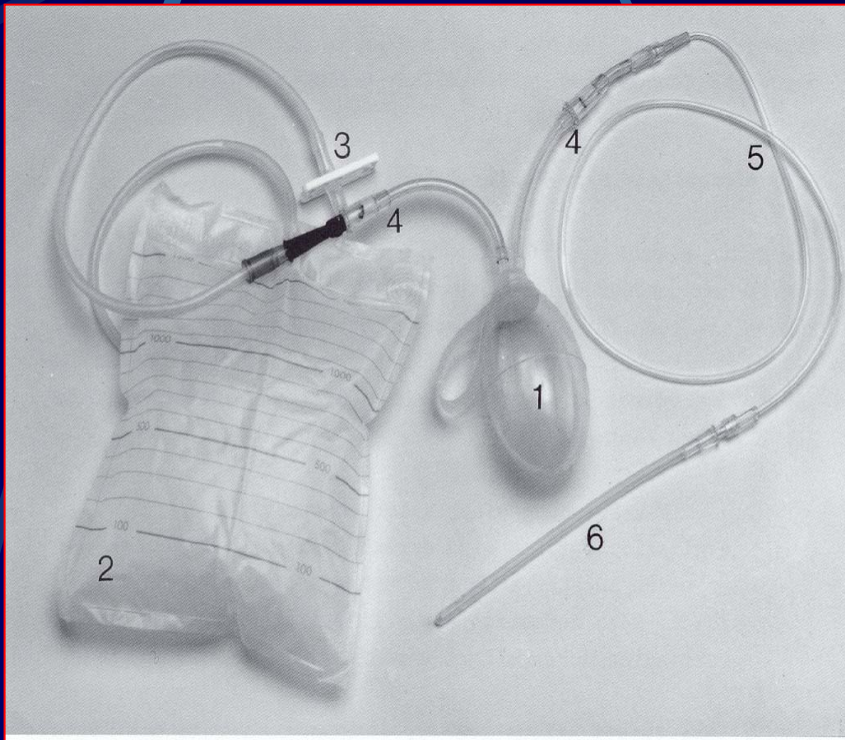
- Major Auto Hemo Therapy MAH as extracorporeal blood treatment with O_3 and reinfusion of activated blood
- Rectal Insufflation of O_3 - O_2 mixture
- Minor Auto Hemo Therapy as intramuscular injection of activated blood

Major Auto Hemo Therapy



- Major Auto Hemo Therapy extracorporal blood treatment avoiding forms of intra vascular gas application
- Indications:
 - Arterial circulatory disorders
 - Immunomodulation
 - Rheumatoid arthritis and related problems

Rectal Insufflation for systemic und topical efficacy

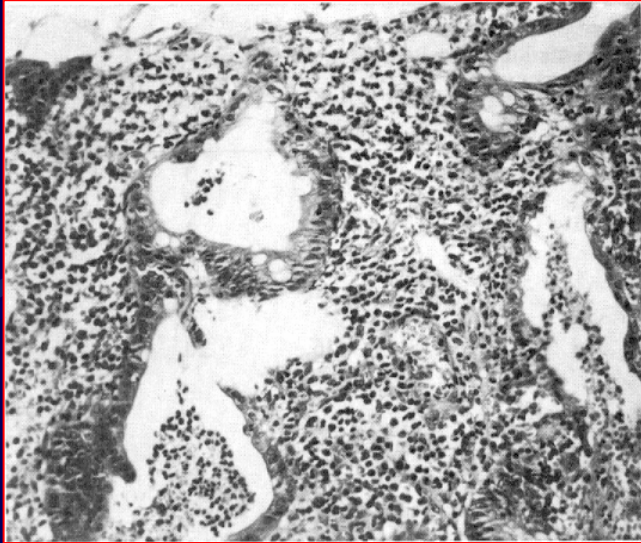


Indications:

- Proctitis
- Colitis
- All Indications for Major Auto Hemo Therapy

1. Dosage bulb (150 ml)
2. Ozone reserve bag
3. Connection locking mechanism
4. Return valves
5. Connection tube (luer)
6. Rectal catheter

Ulcerative Proctocolitis



Active Stage of Colitis

Pat. male 62 yrs.

Cryptitis with cryptal abscesses, chronic inflammation, destruction of the epithelium and massive infiltration of leucocytes (350x).



Control biopsy after 4 weeks of rectal ozone insufflation with 8,5-27 μg O_3/ml and 300 mls, 3x per week.:

Regular epithelium and glandular tubes. Moderate leucocyte infiltration, significant reversal of inflammatory changes

(Knoch et al. „Aktuelle Koloproktologie“)

Minor Auto Hemo Therapy

Extracorporeal blood treatment: 10 ml ozone with a concentration of 10–20 $\mu\text{g/ml}$ + 2-3ml of patient's own blood and intramuscular injection

Indications

- Allergies,
- Acne, furunculosis,
- Supportive cancer therapy

by non specific activation of the immune system, general stimulation

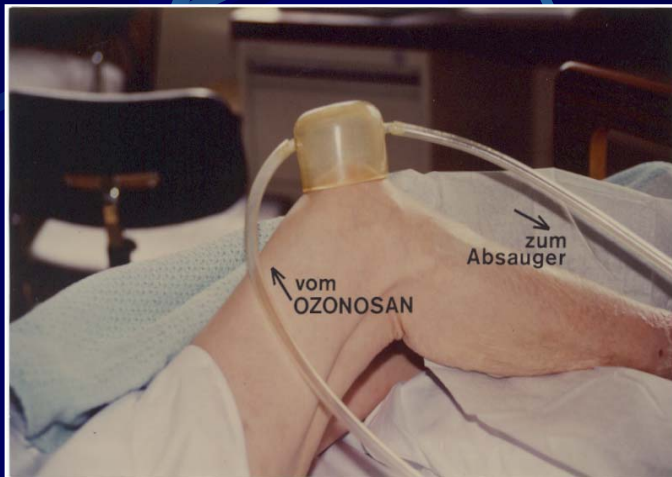


Topical Forms of Application

- Transcutaneous Ozone Gas Application
in gas-tight and ozone-resistant plastic covers
- Ozonized water
in the form of spray or compresses
- Rectal O₃-O₂ insufflation
- Intraarticular injections
- Intramuscular injections
- Ozonized olive oil

Local Ozone Treatment

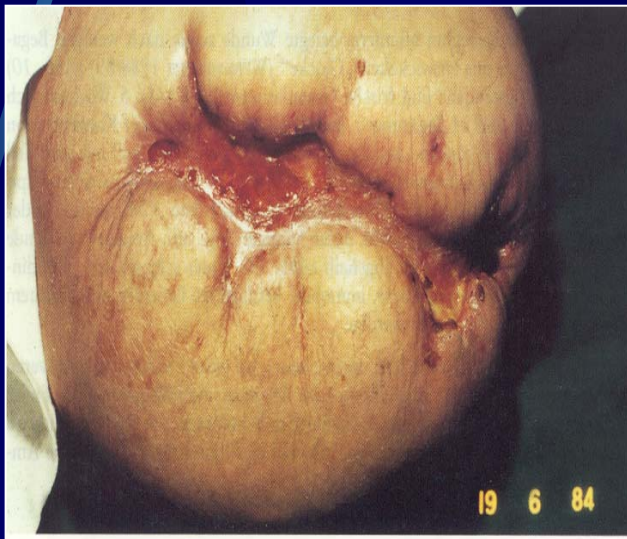
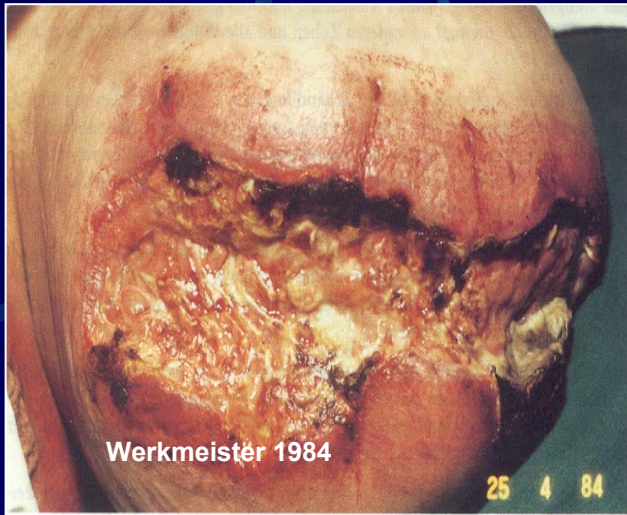
in the form of the low pressure system acc. to Werkmeister



Indications

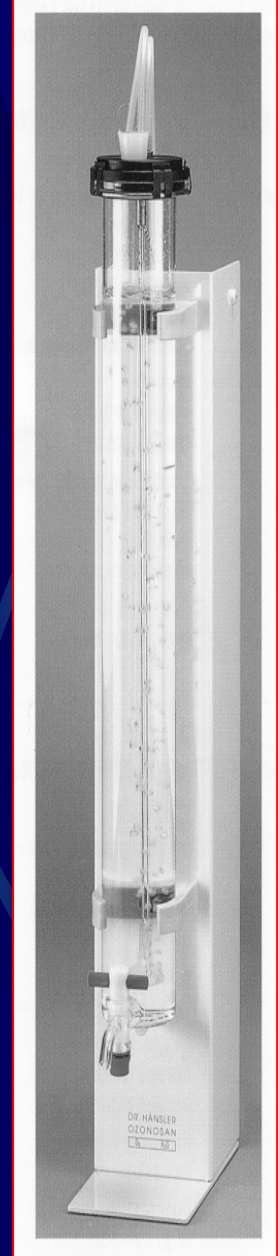
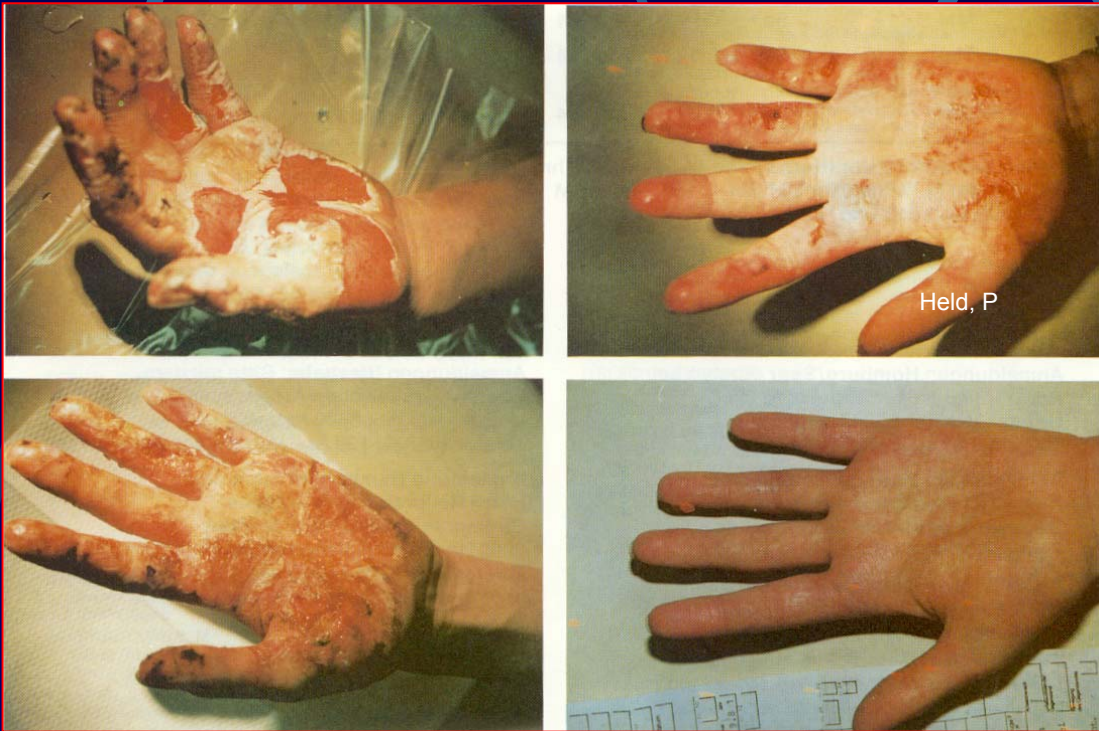
- Decubitus ulcer
- Badly healing wounds
- Diabetic gangrene
- Burns

Ozone Treatment in Surgery



- 1915 A. Wolff
- 1935 E. Payr
- 1937 P. Aubourg
- 1977 O. Rokitansky
- 1981 H. Werkmeister,
- 1987 H.G. Knoch,
- 2002 Calderon, N.A.
Kauffmann, T

The Use of Ozonized Water in the form of spray or compresses



Intraarticular Injections in Orthopedics



- 1981 Z. Fahmy,
Bad Kreuznach, Germany
- 1989 E. Riva-
Sanseverino,
Bologna, Italy

Indications:

- Gonarthrosis
- Arthrosis of other joints
- Rheumatoid arthritis
as supportive therapy

Subcutaneous, intracutaneous and intramuscular injections



- 1979 Herget
Gießen
- 1999 Balkanyi
Zürich

Indications

- Myotraumatic syndrome
 - Myogelosis
- eg in combination with tonanalgetic treatments

Mechanism of Action in Topical Applications

1. Microbicidal effects , ie bactericidal, fungicidal, virustatic
2. Wound cleansing effect
3. Wound healing effect
4. Immuno activation

Mechanisms of Action in Systemic Applic.: MAH

1. Activation of Immunocompetent Cells
2. Activation of Red Blood Cell Metabolism
3. Activation and Induction of Biological Antioxidants and Radical Scavengers

Concentration	Application	Indication	Efficacy
100 90 80 70 60 50	topical application	superinfected wounds active colitis	germicidal wound - cleansing
40 30 20 10	systemic treatment	Circulatory disorders, immuno-dysbalance revitalization, improvement of wound healing	Immuno modulation, activation of RBC-metabolism, increase of antioxidants

Contra-Indications and -Applications

Contra Indications

1. Glucose-6 Phosphat- Dehydrogenase-Deficiency (Favism)
- Hyper Thyroidism

„Contra Applications“

1. Intravenous Gas Injections
2. Intraarteriel Gas Injections
3. Hyperbaric Reinfusion