

## Ozonotherapy for Dogs and Cats

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### Summary

Ozonotherapy has been reported to be effective in humans, but there was still small numbers of reports in veterinary medicine. Rectal insufflations (RI) of oxygen-ozone was effective as well as major ozone autohemotherapy (AHT), the procedure was easy to perform, painless, inexpensive and had no side effects. Subcutaneous (SC) injection of oxygen-ozone were also easy to perform for veterinarians. Ozonotherapy were effective and may be used in conjunction with all conventional and natural treatments like humans. Ozonetherapies were effective for dogs and cats. Animal patients receiving ozonotherapy could maintain high quality of life.

**Keyword :** Dogs and cats, Major ozone autohemotherapy (AHT), Rectal insufflation of oxygen-ozone (RI), subcutaneous injection of oxygen-ozone (SC)

**Background:** Only one ozonotherapy report available for cows in Japan by Atsuya Ogata until recently. We started ozonotherapy for dogs and cats since April 2007. Over 3000 treatments were performed in two years.

**Study period:** April 2007 to March 2009

**Patients:** 200 dogs and 80 cats were treated with ozone therapy over a period of two years. The study group included dogs and cats with history of cancer, disc hernia, skin disease (including external otitis), arthritis, digestive disease, liver disease, infectious disease, brain and nervous disease, auto immune disease, respiratory disease and kidney failure.

**Methods:** Rectal insufflations were used for most cases, because AHT were often too stressful and expensive for dogs and cats. RI was easy to perform, painless, inexpensive, and able to be repeated. Subcutaneous injection of oxygen-ozone were also easy to perform for veterinarians. Concentrations of ozone for AHT, RI and SC were 10 micro gramsO<sub>3</sub>/ml, 10 to 20 micro gramsO<sub>3</sub>/ml and 2 micro gramsO<sub>3</sub>/ml respectively.

**Results:** Patients after ozone treatments were generally active, showing improvements of circulation and immunity. Dogs with disc hernia and arthritis showed less signs of pain and inflammation, and the use of anti-inflammatory drug was reduced. Also, there were reduced side effects of chemotherapy in cancer patients. Patients with infectious diseases recovered faster than patients not treated with ozone therapy.

#### 1) Adjunct therapy for cancer

One factor of transformation from normal cell to tumor is hypoxia. In cancer treatment, ozone therapy can be used as an adjunct therapy with conventional and alternative treatments. It is helpful to boost quality of life, and reduce side-effects of drugs. Advantages of ozonotherapy for cancer are enhanced oxygenation of tumors and ischemic tissues. Also, others include of anti-inflammatory effect, activation of vascular endothelium, enhancement of resistance to oxidant stress, stimulation of immune system, stimulation of neuroendocrine system, in anemia regulation of bone marrow and production of red blood cells.

#### Case 1: Feline breast cancer

**Patient:** Mixed cat, 21 years old, female(spayed), body weight 2.5kg

**History:** chronic kidney failure followed by breast cancer

A treatment was started from September 2007. She was treated with RI(200 to 400 micro gramsO<sub>3</sub>), combined with SC(2 micro gramsO<sub>3</sub>/ml, 1-2 cc, each area) once a week or once every two weeks.

**Results:** Tumor size remained unchanged for one year, however, the tumor size increased later on. Tumor was treated by sarcoma ointment and applied with ozonized olive oil which resulted in remission of cancer. General condition and kidney function were maintained normal range during ozonotherapy. It is unusual for feline breast cancer patient to survive more than one year following surgery.

#### Case 2: Feline lung tumor

**Patient:** Russian blue, male, 6 years old, body weight 2.7kg

**History:** Large tumor of left lung was found in 2006.

**Treatments:** He was treated with RI(200 to 400 micro gramsO<sub>3</sub>) once every two weeks since August 2007 until April 2009.

**Results:** Left lung tumor disappeared following ozonotherapy, however, he showed a sign of breathing difficulty in February 2008. The breathing problem was diagnosed as emphysema. Ozonotherapy has continued until now and respiratory condition improved.

Body weight was increased (3.5kg) and general condition was good.

### Case 3: Feline rectal tumor

Patient: Mixed cat, 13 years old, male, bodyweight 4.6kg

History: Obstruction to the passage of stool, blood in stool

Treatments: Treated with RI(300micro gramsO<sub>3</sub>) once a week since December 2008 to April, 2009. Owner applied ozonized olive oil to rectum with a cotton swab. Commercial foods were changed to low carbohydrate foods.

Results: Stool passed rectal without any problems and the blood in stool disappeared. General condition was also well maintained.

### 2) Canine disc hernia

Ozonotherapy was useful for disc hernia and arthritis. If surgery was not the choice for owner nor not indicated, ozonotherapy should be recommended as a first choice. Acute and chronic pain would be relieved and recovered faster than the conventional approach. Combination with acupuncture generates a synergistic effect. Recovery percent of conventional therapy of the lumbar disc hernia were 80 to 85%, however, improvement rate of canine disc hernia in our study (46 dogs, grade 1 to 4) with ozonotherapy and acupuncture was 91.3% in our clinic.

### Treatments

RI: 10 to 20 micro gramsO<sub>3</sub>/ml

SC: 2 micro gramsO<sub>3</sub>/ml each place

In acute phase, patients were treated with ozonotherapy once a day to twice a week.

### 3) Comparison AHT with RI

Case : Acute brain nervous (vestibular) dysfunctions

Patient: Mixed dog, 15 years old, female (spayed), body weight 10kg

Symptoms: Cramp-like seizure, left leg spasm, salivation and a difficulty in standing, conscious proprioceptions (CP) of the left side disappeared (normal: +2), deep pain(+), dilated pupils, decreased light reflex, decreased liver and kidney function were observed.

### Treatments by AHT and results

She was treated by AHT (300 micro gramsO<sub>3</sub> per 10ml of blood) and acupuncture treatment the first and second day. Nervous symptoms were improved significantly by

the third day. She was treated with RI (300 to 500 micro gramsO3) four times and neurological tests and blood tests returned to normal by day 21.

Symptoms: Salivations, difficulty in standing, eye nystagmus

Treatments by RI and results

Eye nystagmus stopped After RI (500 micro gramsO3) on first day. RI (600 micro gramsO3) were repeated on day 2 and day 4. She was able to walk, but was unsteady until 7<sup>th</sup> day. By 13<sup>th</sup> day, the dog started running with normal neurological test.

**Case 4: Skin loss and Feline Infectious Peritonitis (FIP)**

Patient: Mixed cat, male, 3 years, feline corona virus (+)

He was diagnosed FIP and administrated Prednisolone and Interferon by another hospital. He had a fever at first visit and the skin was necrotic at the site of wounds.

Treatments and results

1. RI, 300micro gramsO3 and subcutaneous drip (Lactate ringer solution).
2. Local areas were washed by ozonized water and coated with ozonized olive oil.

Results: Necrotic tissues were slough away and healthy tissue were regenerated. Skin was completely repaired after 89th day.

Prospects: There have been no effective treatments for FIP, however, ozonetherapy could be utilized as one of the treatment method of FIP.

**4) Digestive disease**

**Case 5: Hepatitis**

Patient: M. dachshund, 5 years old, female, Bodyweight 4.3kg

She was diagnosed as hepatitis with jaundice and ascites in October, 2006.

Treatments and results: She was treated with RI(300 micro gramsO3) once or twice a week since June 2007. Appetite was increased and general conditions were improved after treatments. Liver function was improved and a biliary sludge and ascites were disappeared.

**Case 6: Inflammatory bowel disease (IBD)**

**Patient: Papillon, 14 years old, female(spayed), Body weight 3.2kg**

**She was examined at a university hospital, when ascites was found. Pathological diagnosis revealed as severe lymph-plasma cell enteritis or low grade lymphoma. She had biliary sludge.**

**Medication profile: Gaster, Flagyl, Urso, Prednisolone (5mg/day)**

**Treatments:**

- 1. RI 10 micro grams/ml×30ml, once a week**
- 2. Nutrition therapy, Vitamin C, lactic bacteria, EFA, trace minerals, amino acids, and enzyme**
- 3. Doses of prednisolone were gradually reduced.**

**Results: Liver function, Albumin and Total protein in blood were improved and ascites was disappeared. All of drugs were discontinued.**

**Conclusion: Ozonotherapy is effective for canine and feline various kinds systemic and local diseases. Ozonotherapy is especially useful when combined with conventional and natural treatments. RI was easy to perform, painless, inexpensive and without side effects for veterinary patients.**

**References**

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