

#### H4

### **HYPERBARIC OXYGEN CONCURRENT WITH INTRA-ARTERIAL CARBOPLATIN CHEMORADIOTHERAPY ENHANCES SURVIVAL OF PATIENTS WITH ORAL CANCER**

Ryoichi Oya<sup>1</sup>, Soichi Hirashima<sup>1</sup>, Toshiyuki Akimori<sup>1</sup>, Chisa Kubo<sup>1</sup>, Kotaro Shimoji<sup>1</sup>, Ryuichiro Inenaga<sup>1</sup>, Shoichi Nakamura<sup>1</sup>, Nobuhide Konda<sup>2</sup>, Takayuki Okuri<sup>3</sup>, Katsuya Yahara<sup>3</sup>, Junji Moriya<sup>3</sup>, Shingo Kakeda<sup>3</sup>, Nobuhiro Onari<sup>3</sup>, Yukunori Korogi<sup>3</sup>

<sup>1</sup>Department of Oral and Maxillofacial Surgery, <sup>2</sup>Division of Hyperbaric Medicine, <sup>3</sup>Department of Radiology, University of Occupational and Environmental Health

Hypoxic cell fraction within a tumor tissue decreases effect of radiotherapy and chemotherapy and provides poor prognosis. As oxygen tension of tumor tissue is kept higher than that of normal tissue after hyperbaric oxygen (HBO), recent study suggests that irradiation after HBO exposure within fifteen minutes enhances anti-tumor effect of radiotherapy in malignant tumors.

We evaluated retrospectively effect of HBO concurrent with intra-arterial carboplatin chemoradiotherapy in patients with oral cancer. One hundred-one patients with oral cancer, including recurrent lesion or cervical lymph node metastasis, were treated with superselective intra-arterial carboplatin infusion, external beam radiotherapy, UFT (tegafur-uracil) and/or surgery from April 1995 to June 2008 at our institution.

Among these patients 51 were combined with HBO, 50 without HBO exposure. Exposure to HBO was administered in a multiplace hyperbaric chamber according to the following schedule: 13 minutes of compression with air, 60 minutes of oxygen inhalation using oxygen mask with a reservoir at 2.5 atmospheres absolute, and 10 minutes of decompression with oxygen inhalation. Radiotherapy was performed immediately after HBO exposure five times weekly.

Of 51 tumors treated with only chemoradiotherapy without surgery, 30 were combined with HBO (CR-wHBO group), 21 without HBO (CR-woHBO group). Among 50 tumors resected after

preoperative chemoradiotherapy, 20 were combined with HBO (S-wHBO group), 30 without HBO (S-woHBO group). A disease-specific survival rate of patients with HBO (70%) was significantly higher than that of patients without HBO (40%) ( $p=0.012$ ).

Also, a disease-specific survival rate of patients for five years in each group revealed as follows, S-wHBO group; 86%, S-woHBO group; 60%, CR-wHBO group; 53%, CR-woHBO group; 27%. There was a significant difference between survival rate of each group by Logrank test ( $p=0.003$ ). These results suggest that adding HBO to intra-arterial carboplatin chemoradiotherapy enhanced survival of patients with oral cancer.

#### H5

### **HYPERBARIC OXYGEN THERAPY (HBO) FOR BLINDING VASCULAR OCCLUSIONS OF THE RETINA (VOR) — EXPERIENCE OF 201 CASES (206 EYES) PAST 20 YEARS**

Inoue O<sup>1</sup>, Kajiya S<sup>2</sup>, Yachimori R<sup>2</sup>, Sawaguchi S<sup>2</sup>  
<sup>1</sup>Hyperbaric Medicine, <sup>2</sup>Ophthalmology, Ryukyu University Hospital, 270 Uehara Nishihara-cho Okinawa, 903-1225, Japan

Background: Currently VORs are increased with hypertension or diabetes. Central retinal artery occlusion (CRAO) occurs by rapid reduction of visual acuity (VA) similar to cerebral stroke. Branch retinal artery occlusion (BRAO) often accompanies a visual field defect (VFD). Central retinal vein occlusion (CRVO) is a cause of permanent blindness secondary to diabetic retinopathy. Retinal branch vein occlusion (BRVO) may ensue with visual disturbance.

Neither medications, photocoagulation nor ophthalmic interventions evidenced effectiveness. This report will be the largest series to reveal the favorable effect of HBO on VOR.

Cases: CRAO was 62 cases 63 eyes (average 62 years old) whose symptoms at admission were no light perception (NLP) in four cases, light perception (LP) in five, hand motion (HM) in 23, finger-counting (FC) in five, highly decreased visual