H4
HYPERBARIC OXYGEN CONCURRENT WITH INTRA-ARTERIAL CARBOPLATIN CHEMORADIOThERAPY ENHANCES SURVIVAL OF PATIENTS WITH ORAL CANCER

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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-w-HBO group), 21 without HBO (CR-wo-HBO group). Among 50 tumors resected after preoperative chemoradiotherapy, 20 were combined with HBO (S-w-HBO group), 30 without HBO (S-wo-HBO 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-w-HBO group; 86%, S-wo-HBO group; 60%, CR-w-HBO group; 53%, CR-wo-HBO 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

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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
acuity 0.01–0.1 (HD) in 16, slightly decreased visual acuity over 0.2 (SD) in nine which were included 17 visual field defect (VFD).

BRAO was 46 cases 46 eyes (59 y-o), 1 NLP, 1 LP, 10 HD, 28 SD included 21 VFD. CRVO was 67 cases 70 eyes (60 y-o), 2 HM, 22 HD, 46 SD. Macular edema (ME) was complicated in 91.0%. BRVO was 26 cases 27 eyes (58 y-o), 3 HD, 24 SD with ME 77.7%.

Treatment: For CRAO, HBO was begun on onset day in 13 eyes, by third day in 29. For BRAO on onset day in five, by third day in 16. 2.8 ATA=60 minutes. 1–2/day was conducted for CRAO average 22.3 times or BRAO 11.2. For CRVO (14 non HBO), HBO was begun within a month in 35, for BRVO within a month in 12. 2.0–2.8 ATA=60 minutes. 1/day was conducted for CRVO av. 16.9 or BRVO av. 20.2.

Results: 38% of CRAO improved VA over two lines (olt). Even over three days after onset, 45% improved otl. The more VA was maintained at the onset, the improvement was better, while even 30% of impending blindness (NLP, LP) improved olt. 75% of BRAO improved VA otl. Even over three days after onset 63% improved VA otl.

Only 45% of BRAO improved VFD. 44% of CRVO improved VA otl by the end of HBO. However, two months after HBO, only 26% improved VA, which was almost equal to the non-HBO group. Improvement in the 2.8 ATA group was better than either in 2.4 ATA or 2.0 ATA. VA was improved only when macular edema was diminished. 55% of BRVO improved VA otl in which one-third improved over four lines. VA was maintained or even improved far after HBO.

Conclusion: Neither urokinase or stellate ganglion block altered the combined effects with HBO, so HBO revealed an independent therapeutic effect. Although CRVO revealed only a temporary effect to improve VA, it would be necessary to repeat HBO by higher ATA until VA or macular edema was stabilized.

H6

MANAGEMENT OF FOURNIERS DISEASE — NECROTIZING SOFT TISSUE INFECTIONS OF THE GENITALIA

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A retrospective chart review of 131 patients with necrotizing soft tissue infection of the genitalia seen at a single institution over a thirteen-year period was conducted. Two time frames – March 1985 through June 1993 (eight years) and July 1993 through June 1998 (five years) – were compared for outcomes, hospital course and length of stay. One surgeon was involved in 90% of all the cases.

In the first cohort, traditional conservative surgical management with multiple incision and drainage procedures and excision of necrotic tissue were implemented. In the second cohort, very aggressive initial surgery and early second- and third-look operations with early wound closure with local advancement of tissue flaps and wound closure, including obliteration of dead space, was implemented.

In both cohorts, broad-spectrum antibiotics were started on admission and rapidly tailored to specific antibiotics based in culture and sensitivities. Initial hyperbaric oxygen was at 45 psi with 90% oxygen for eight hours over a 48-hour period, then twice daily at 33 psi until wound closure.

The result of the aggressive management in the second cohort was a reduction in mortality from 36% to 16% and a reduction in length of stay from 57.4 days to 24.8 days. There were also fewer surgical procedures - debridements, reconstruction and split-thickness skin grafts.

The conclusion is that early aggressive repeated surgery, broad-spectrum antibiotics and hyperbaric oxygen therapy greatly improves the outcome of necrotizing soft tissue infections of the genitalia.