

日本語要約

- ◎ 遠隔転移、腹膜播種のない手術不能胃癌、胃癌術後再発を対象
- ◎ 放射線治療、化学療法、温熱療法、高気圧酸素治療による集学的治療の成果
- ◎ 50%で完全消失が得られ、50%以上の縮小を含めると奏効率は100%
- ◎ 全体の間接生存期間は34ヶ月、5年生存率は33%
- ◎ 集学的治療による良好な治療成績が証明された

Chemo-radiotherapy plus regional hyperthermia and hyperbaric oxygen therapy for locally advanced or post-operative loco-regional recurrence of gastric carcinoma

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Backgrounds

- Generally, curatively radiotherapy has not been performed for locally advanced or post-operative loco-regional recurrence of gastric carcinoma.
- We performed curatively chemo-radiotherapy plus regional hyperthermia (HT) and hyperbaric oxygen therapy (HBO) for these conditions of 16 patients.

Materials

- Between 2006-2009
- Primary gastric ca. 8 cases (stage II: III= 2: 6) and lymph node metastases after surgery 8 cases
- Age: 66.6 ± 10.3 , Male vs. Female=12: 4
- Pathological diagnosis: poorly differentiated carcinoma

Radiotherapy

- Liniac 10MV X-ray
- 3D conformal radiotherapy
- Total dose: 56.3 ± 8.8 Gy

Chemotherapy

- CDDP/S1: DOC/S1: PAC: PAC/CDDP:
CPT/S1: 5-FU/LV=9: 2: 2: 1: 1: 1

Hyperthermia (HT)

- All patients were received.
- Session: 39.2 ± 28.3
- 8 MHz radiofrequency-capacitive regional hyperthermia (Thermotron RF-8)
- Heating location: lung, liver, pelvis, peritoneum (focus to main tumor)
- time: 50min
- Schedule: just after chemotherapy or during chemotherapy

Hyperbaric oxygen (HBO)

- All patients were received.
- Session: 19.5 ± 16.1
- Chamber (Sechrist Industries Inc., model 2800 J, Anaheim, California) pressured with 100% oxygen to 2.0 atmospheres absolute
- Time: 90min
- Schedule: just after chemo-hyperthermia

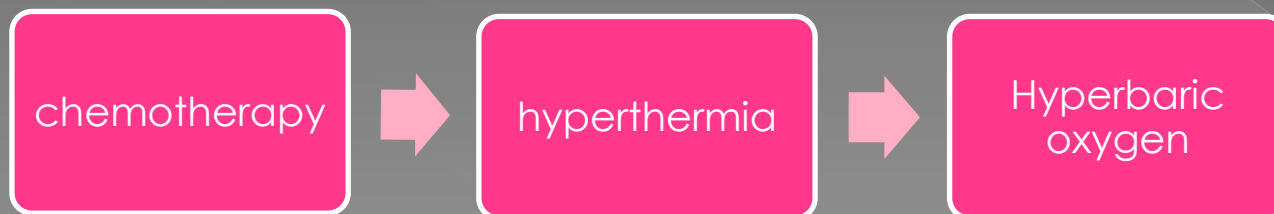


Table 1: Response rate

Response	No. of cases	Rate
CR	8/16	50%
PR	8/16	50%
CR+PR	16/16	100%

Table 2: Comparison with the previous reports

	No. Of cases	Dose (Gy)	chemotherapy	HT and HBO	Response rate
Nagata (1992)	21	50-72	CDDP ADR MMC	-	82%
Safran (2000)	27	45 (ope) 50.4 (non-ope)	PAC	-	56%
Saikawa (2007)	29	40	S1/CDDP	-	66%
Current series	16	56	S1/CDDP PAC	+	100%

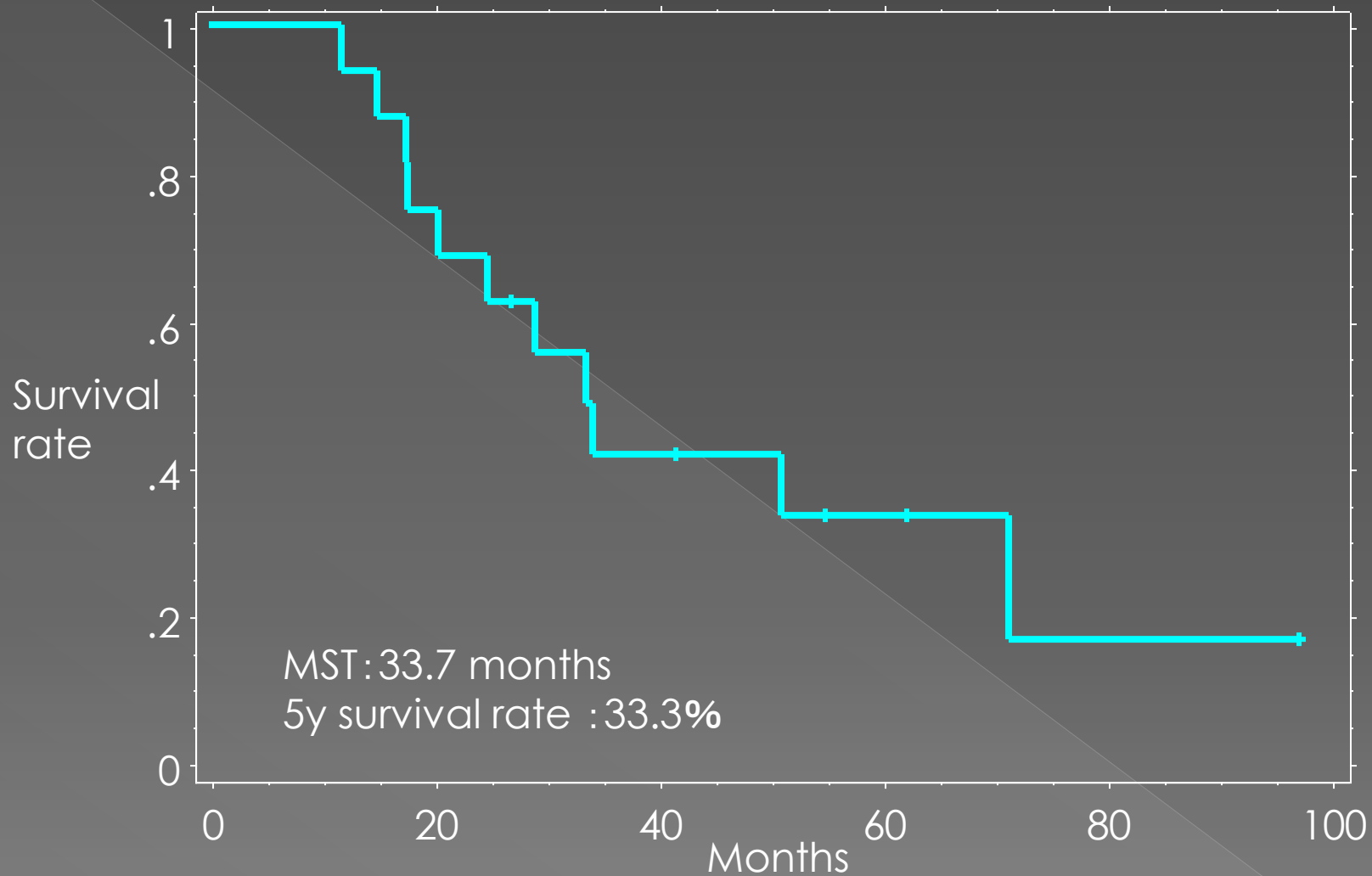


Fig. 1: Overall survival curve of all cases

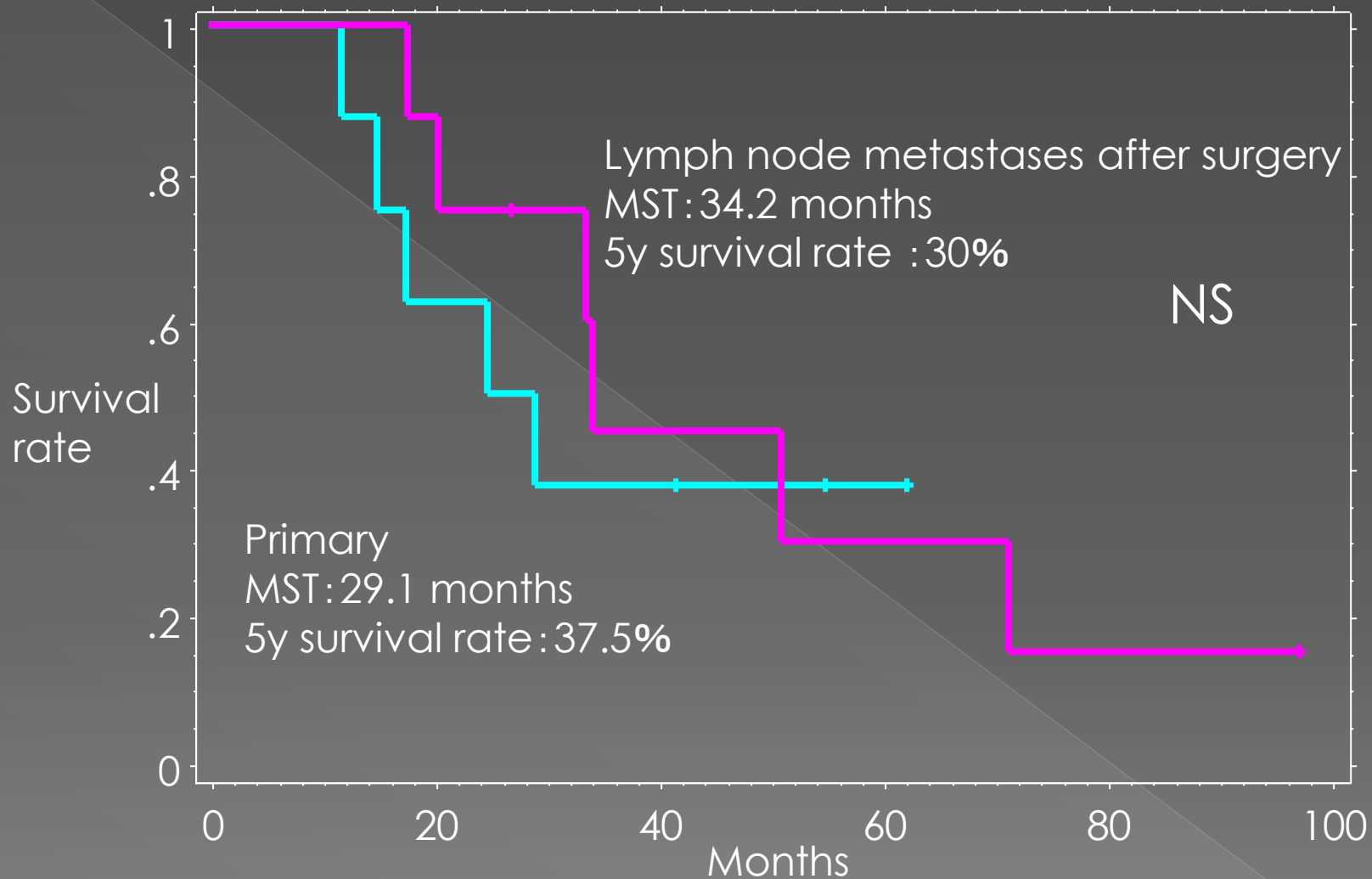


Fig. 2: Overall survival curve by primary or lymph node metastases after surgery

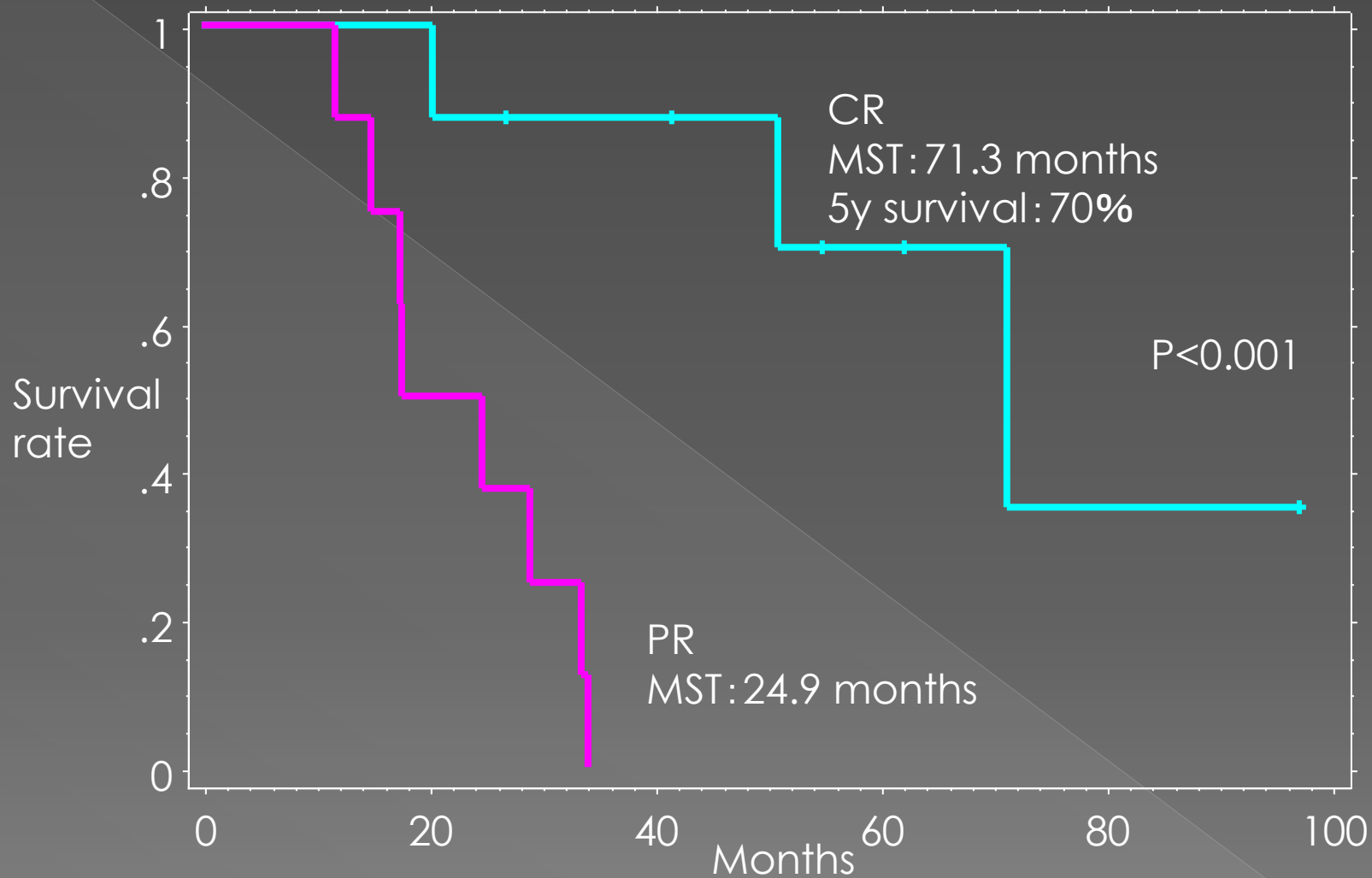


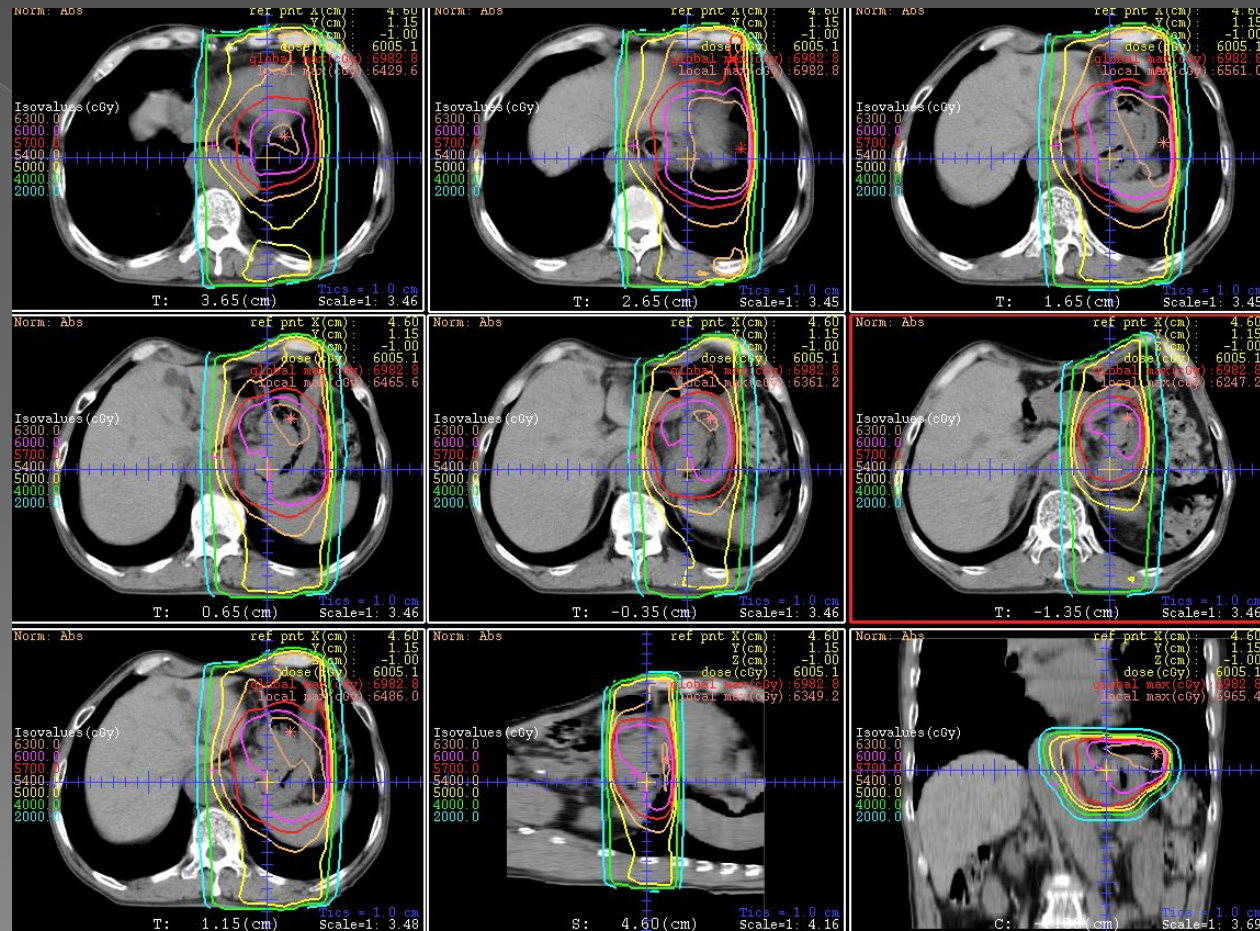
Fig. 3: Overall survival curve by local response

Case : 70's Male T4N0P0M0, p/d adenoca

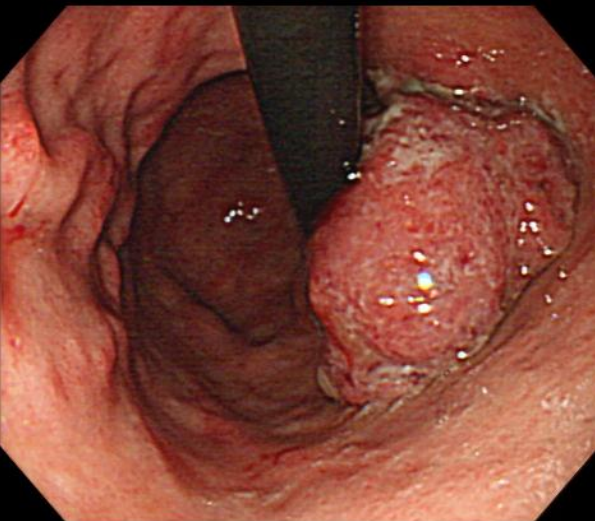
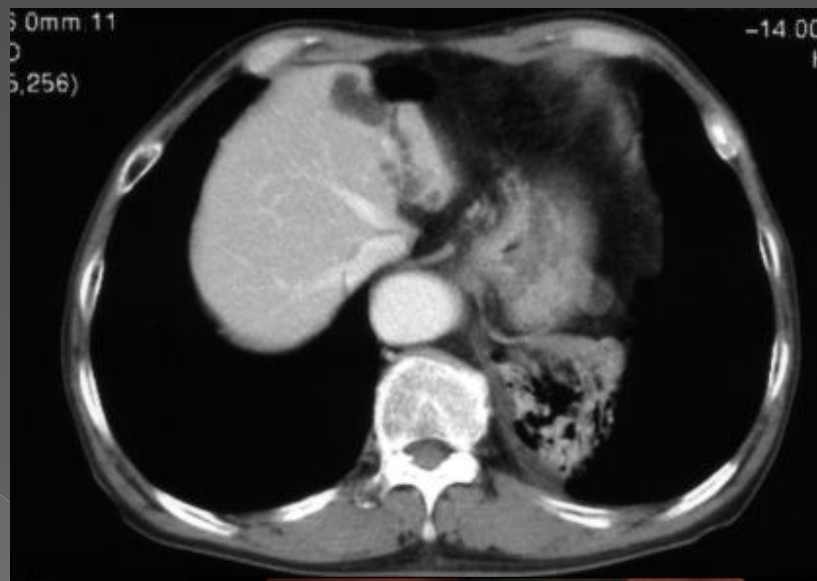
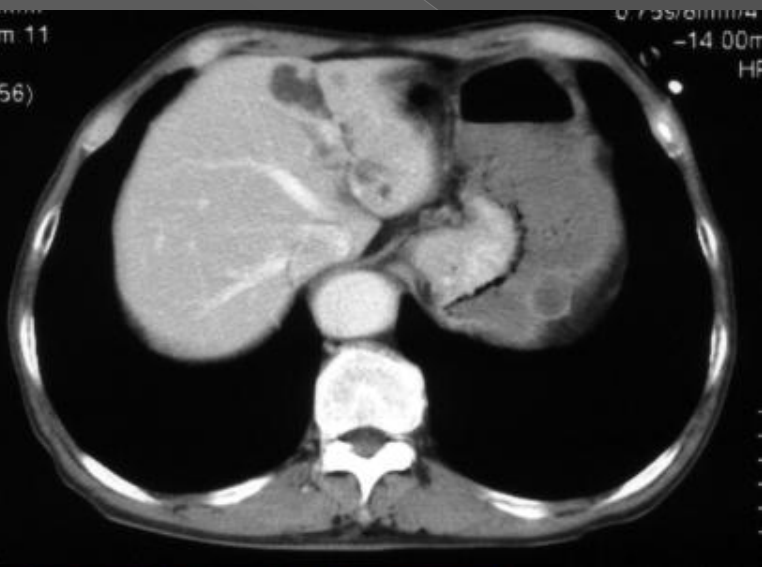
Radiotherapy
10MV X-ray
TD 60Gy/30fr

Hyperthermia
Thermotron RF-8
Electrode 30cm
RF output 1500 W
Time 50 min
Session 23

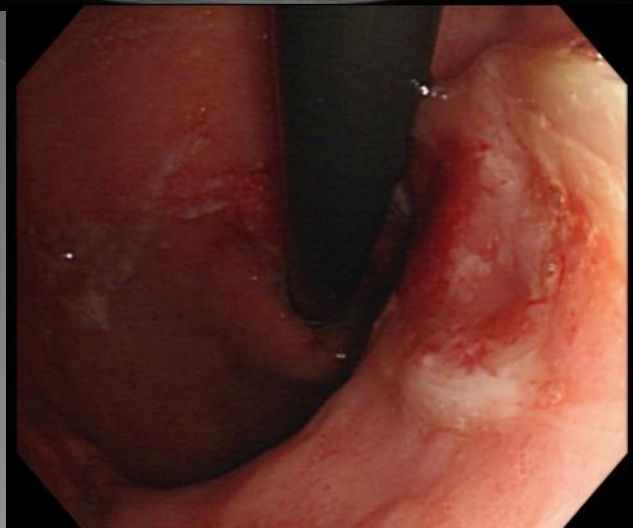
Chemotherapy
TS-1 80mg/CDDP 60mg
→ PAC 60mg/weekly
→ PAC 90mg/biweekly



Treatment results



NED after 5 year

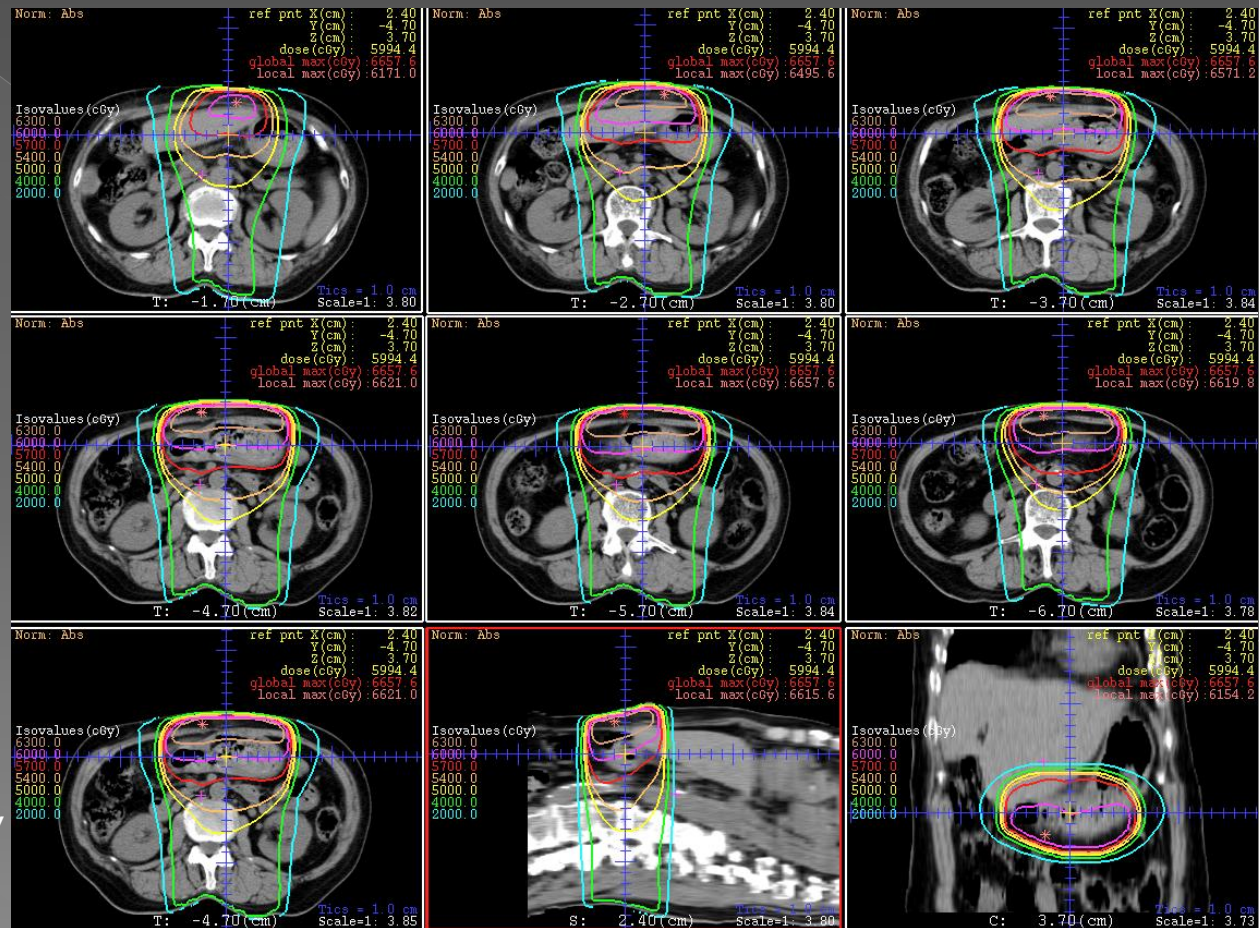


Case : 76y Female T3N0P0M0, p/d adenoca

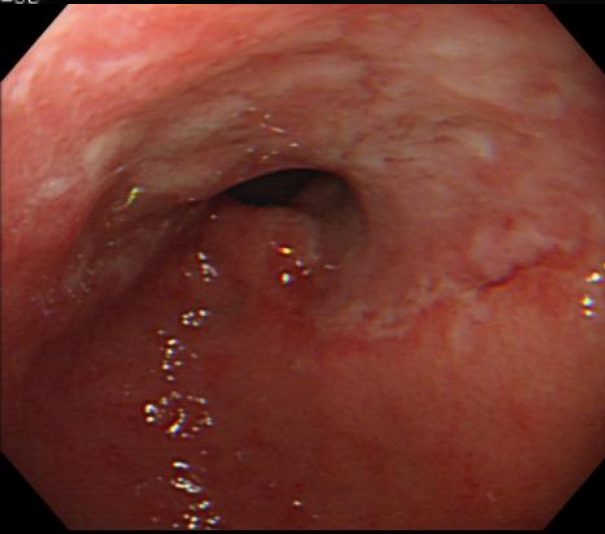
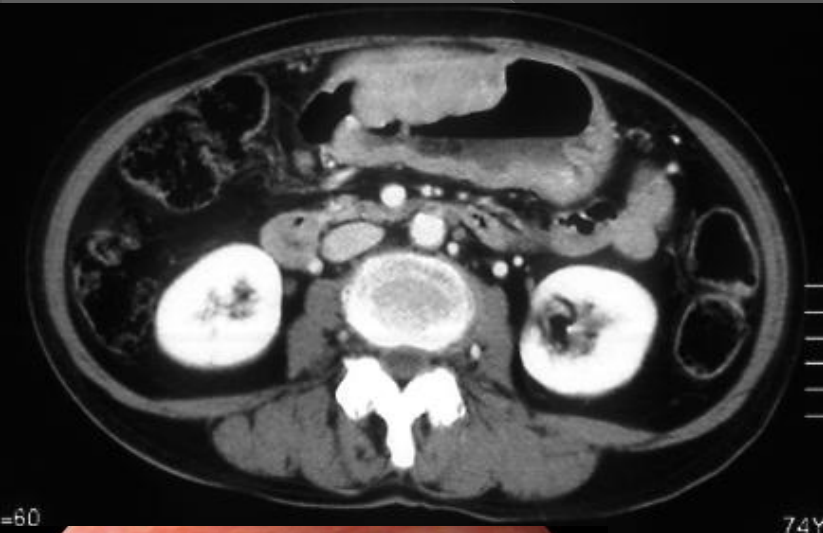
Radiotherapy
10MV X-ray
TD 60Gy/30fr

Hyperthermia
Thermotron RF-8
Electrode 30cm
RF output 1200 W
Time 50min
Session 19

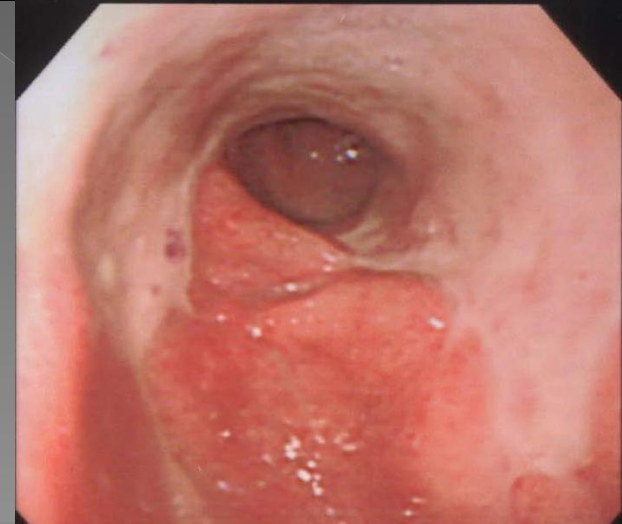
Chemotherapy
S1 80mg/ alternate day
→ S1 80mg/CDDP 60mg
→ S1 80mg/ alternate day



Treatment results



NED after 5 year



Results

- Good responses (8 CR and 8 partial PR) was shown in all patients (Table 1). This data was superior to the previous reports (Table 2).
- Median survival time was 33.7 months and 5 years survival rate was 33.3% (Fig. 1). No significantly difference was shown in overall survival curve by primary lesion and lymph node metastases after surgery (Fig. 2). Overall survival was significantly better in CR group than PR, and in the cases with CR, 5 years survival rate was 70.0% (Fig. 3).
- Two cases treated with chemo-radiotherapy plus HT and HBO are shown.

Discussion

- Recent meta-analysis showed a statistically significant 5 years survival benefit with the addition of radiotherapy in patients with resectable gastric cancer.
- Poorly differentiated adenocarcinoma was known as high radio-sensitivity conventionally. For locally advanced primary gastric cancer or locally lymph node metastases after surgery, the curative chemo-radiotherapy should be considered, if the pathological type is poorly differentiated adenocarcinoma.
- Both HT and HBO might be potentially valuable due to their actions as chemo-sensitizers. This study may indicate that multidisciplinary therapy including chemotherapy, radiotherapy, HT and HBO is important to raise complete response rate for non-operative treatment of advanced gastric cancer.

Conclusion

- Chemo-radiotherapy plus regional HT and HBO could contribute to a better clinical outcome for locally advanced or post-operative loco-regional recurrence of gastric carcinoma.