

Background

- INT 0116 study showed a 10% absolute survival improvement at 3 years with postoperative radiochemotherapy for radically resected gastric cancer
- Acute toxicity of this regimen is substantial with 41% grade 3 and 32% grade 4 toxic effects in chemoradiotherapy arm
- Critical organs of low radiation tolerance (kidneys, liver) are in or near radiation field treated to 45 Gy/25 fractions
- Data on late toxicity of this regimen are not available

Objectives

- To characterize late clinical and biochemical toxicity of radiochemotherapy for radically resected gastric adenocarcinoma
- To investigate correlation between toxicity and dose-volume histograms (DVHs)

Methods

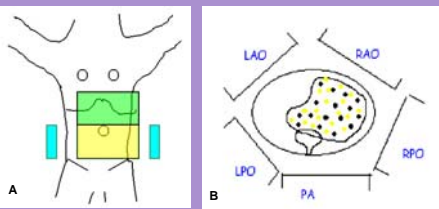
- Retrospective chart review of 88 consecutive patients
- Survival, late clinical toxicity, and biochemical markers of renal or hepatic toxicity were collected (CTCAE v.3)
- Dose-volume parameters were reviewed
- Overall (OS), disease-free (DFS) and event (death or late toxicity) -free (EFS) survival were determined

Material

- DVH available for 80 of 88 cases
- 53 (66%) males, 27 (34%) females
- Mean age 58 (22-75) years

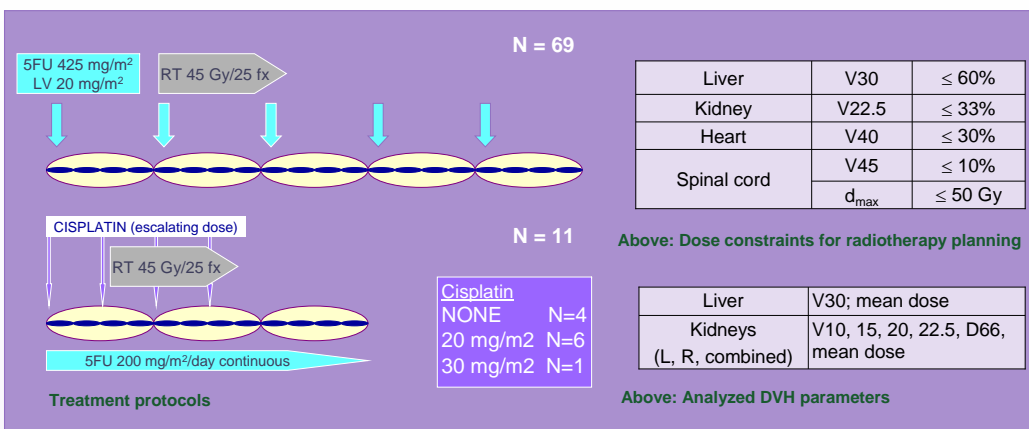
Stage Distribution

- IB – 13 (16%)
- II – 32 (40%)
- IIIA – 24 (30%)
- IIIB – 4 (5%)
- IV – 7 (9%)



Radiation techniques – A. junctional for 31 patients: anterior posterior fields for upper and 3-field for lower with junction move after 10 fractions (junction above kidneys); and B. 5 field conformal coplanar for 49 patients

Methods



Results

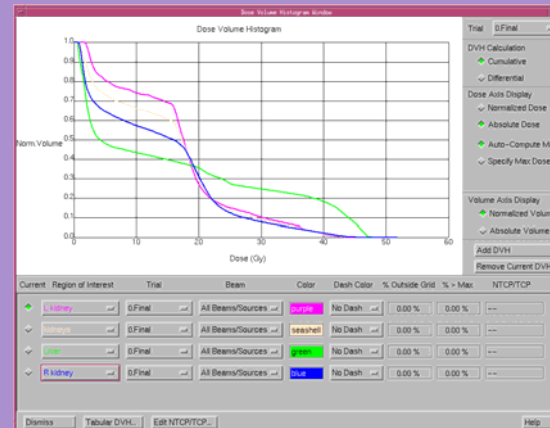
Marker (n)	Grade 1	Grade 2	Grade 3
ALP (48)	15	1	-
AST (52)	14	-	-
ALT (50)	8	1	-
Albumin (46)	10	2	1
Bilirubin (51)	1	-	-
Creatinine (48)	8	-	-

Biochemical markers. Number in brackets shows number of patients for whom each marker was available. Abnormalities were observed 9 days to 55 months after radiotherapy.

In the analyzed group the following late toxicity was observed:

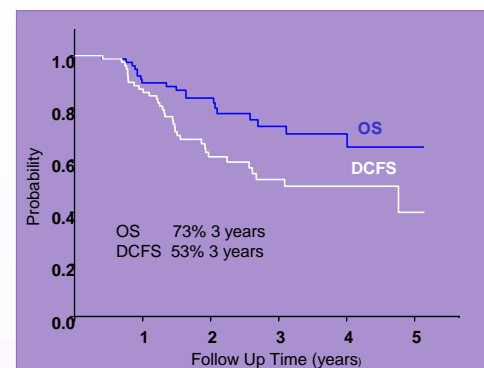
- Bowel obstruction/perforation N=2 (2.5%)
- Anastomotic stricture (GEJ) N=4 (5%)

Both complications were classified as Grade 3 toxicity and appeared 1-2 years after radiotherapy in the full dose (45 Gy) volume. No clinical renal or hepatic toxicity was reported



Sample DVH for the liver and kidneys

Results



Overall survival (OS) and disease and complication free survival (DCFS) where event was defined as death or late toxicity in the analyzed cohort of patients.

Clinical late toxicity and biochemical abnormalities were correlated with DVH parameters and no relationship was detected. A grade 3 albumin decrease was observed in a patient who died from neutropenic sepsis. All grade 2 toxicities and the grade 1 bilirubin elevation were observed at the time of distant cancer recurrence.

Conclusions

1. The most common late complications were small bowel obstruction/perforation and anastomotic stricture
2. No clinical renal or hepatic toxicity was observed
3. In the analyzed sample biochemical renal and hepatic changes were not related to clinical late toxicity or dose delivered