Debbie's Dream Foundation
CURING STOMACH CANCER

제 8차 연례 위암 교육 심포지움

위암

미히르 나익 박사

플로리다 클리블렌드 클리닉
방사선 종양과

디스클로저

- 없음

위암의 역학

- 2017년 미국 28,000 새 케이스 10,960 사망
- 2 번째 암사망 원인 1위는 폐암
- 일본 – 만명당 70 케이스
- 미국 – 만명당 10 케이스
- 사회경제 정도와 반대로 연관

INT-0016 맥도날드 임상시험

INT-0016: MacDonald regimen

556 pts with resected GEJ or gastric adenoca (all stages)

<10% underwent D2 surgery

RANDOMIZE

No further treatment N=275

Post-operative chemoradiotherapy N=281

D1: 5FU+leuco
D28-63: 4500 cGy +5FU
D64 + 92: 5FU+leuco

TOTAL TIME: 3.5 mo

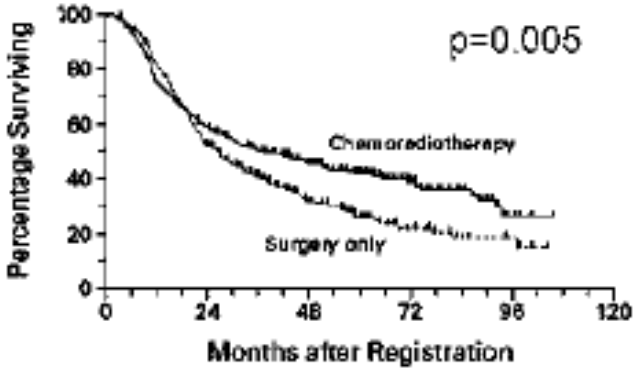


Figure 1. Overall Survival among All Eligible Patients, According to Treatment-Group Assignment.

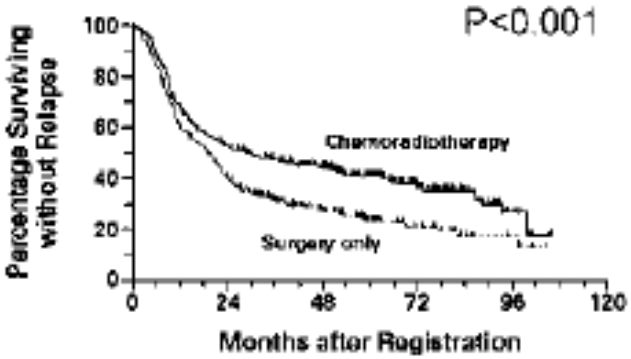


Figure 2. Relapse-free Survival among All Eligible Patients, According to Treatment-Group Assignments.

MacDonald, NEJM 345: 2001.

	Surgery – Chemo/XRT	Surgery	p = value
3 year OS	50%	41%	0.005
Relapse Free Survival (RFS)	48%	31%	< 0.001
Heme Toxicity	54% (≥ Grade 3)		
GI toxicity	33% (≥Grade 3)		

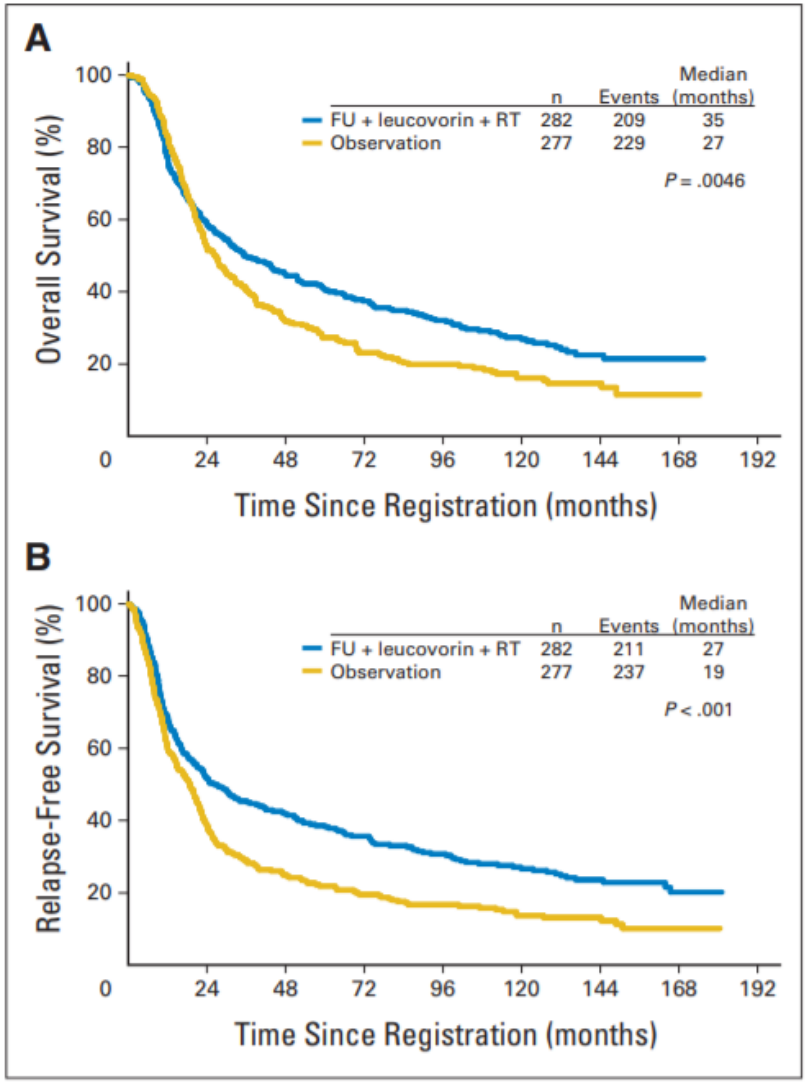


Fig 2. (A) Overall survival by arm; (B) relapse-free survival by arm. FU, fluorouracil; RT, radiotherapy.

Table 2. Patterns of Failure by Arm

Relapse Status	Radiochemo-therapy No.	Radiochemo-therapy %	Control (surgery alone) No.	Control (surgery alone) %	Total No.	Total %
No relapse*	135	48	67	24	202	36
Relapse*	147	52	210	76	357	64
Sites of relapse (% of those randomly assigned)*						
Local	7	2	21	8	28	5
Regional	62	22	109	39	171	31
Distant	46	16	49	18	95	17
Unknown site	32	11	31	11	63	11
Total	282		277		559	

*Indicates statistically significant comparisons. $P < .001$ for relapse *v* no relapse (χ^2); $P = .012$ for sites of relapse (among those with sites reported, χ^2 test for trend).

매직 임상시험

MAGIC: Medical Research Council on Adjuvant Gastric Infusional Chemotherapy

503 pts with resectable GEJ or gastric adenoca (≥Stage II)

42% underwent D2 surgery

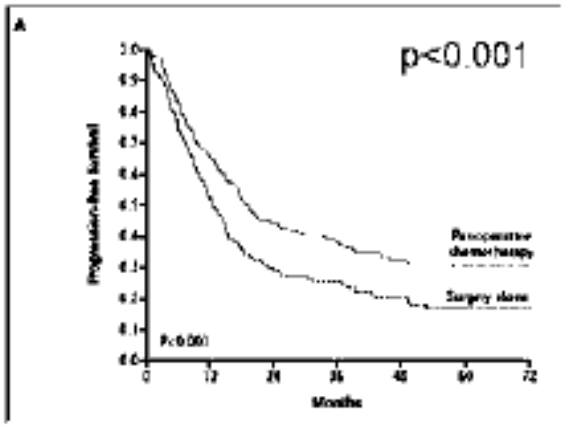
→ RANDOMIZE

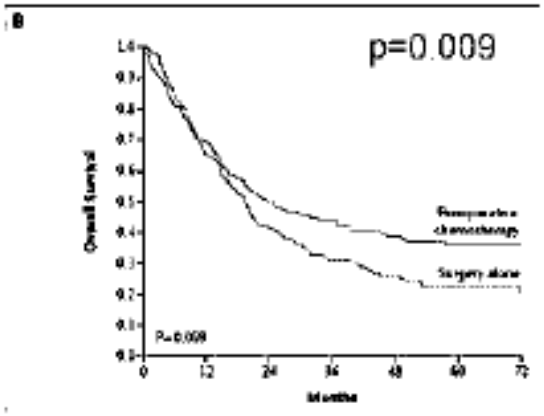
→ Surgery alone N=253

→ Surgery + Peri-operative chemo N=250

ECF: 3 cycles preop and 3 cycles postop

TOTAL TIME: 3.5 mo





Cunningham NEJM, 355: 2006.

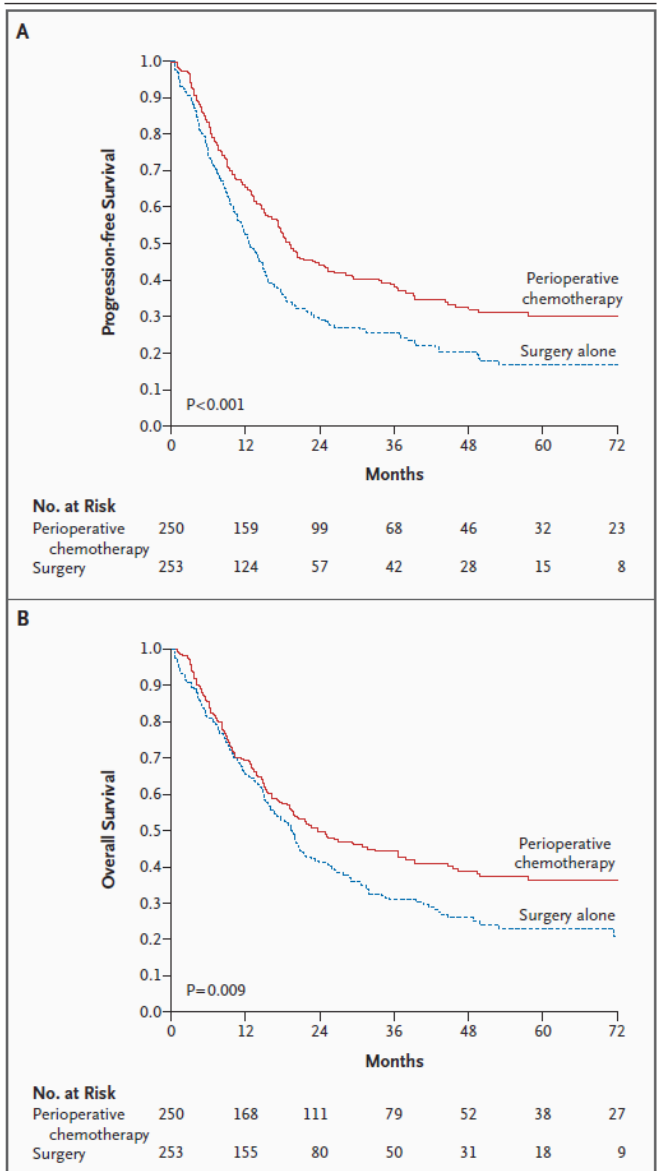


Figure 1. Kaplan–Meier Estimates of Progression-free Survival (Panel A) and Overall Survival (Panel B).

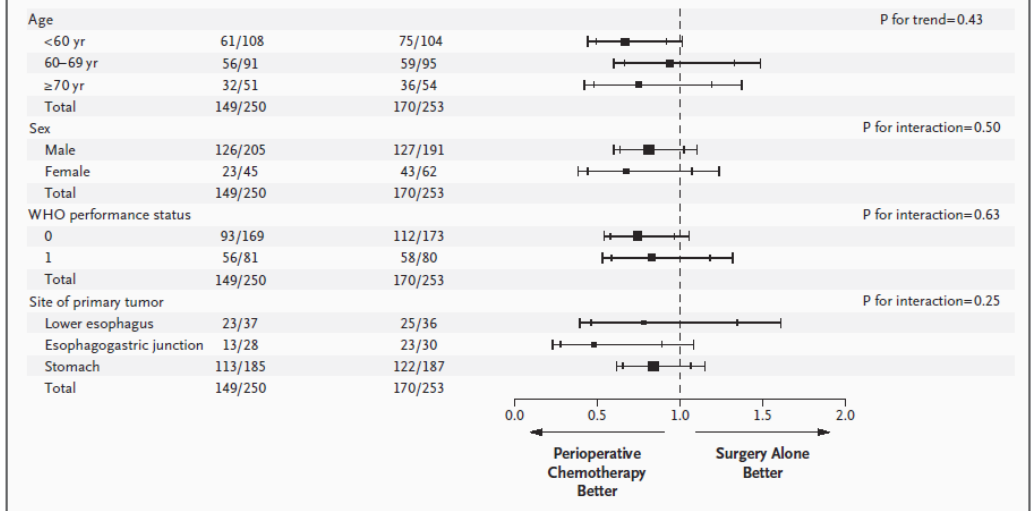


Figure 2. Tests for Heterogeneity of Treatment Effect According to the Baseline Characteristics of the Patients.
The hazard ratios show 95 percent (inner tick marks) and 99 percent (outer tick marks) confidence intervals.

아티스트 임상시험

- 458 환자
- 무작위로 포스트 화학치료 대 화학 방사선 치료로 나눔
- 병기 1기 IA/B, 전이, R1/2 환자 제외
- D2 이상 제거한 모든 환자
- 화학치료 – 시스플라틴 / 카페세타빈 6번 화학
- 방사선 치료 – 시스플라틴 / 카페세타빈 2번 → 카페세타빈/방사선 → 시스플라틴 / 카페세타빈 2번

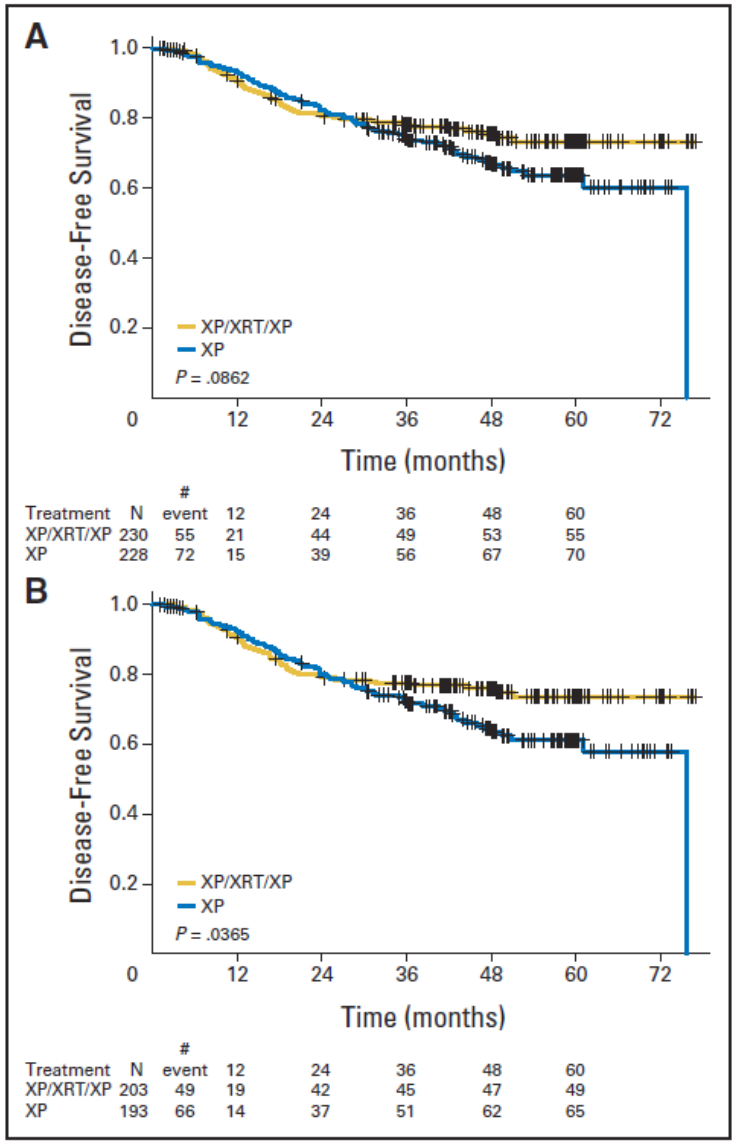


Fig 2. Disease-free survival in (A) all patients and (B) lymph node–positive patients. XP, capecitabine plus cisplatin; XRT, radiotherapy with capecitabine.

- 소그룹 분석: 장 그룹과 림프 양성 – XRT에서 효과
- 림프 양성 3년 질병없는 생존률: 79% vs 72% p = 0.004
- 장 그룹 소그룹: 3년 질병없는 생존률: 94% and 83%

크리틱스 임상시험

- 위암/ 위식도암 환자
- 무작위로
  - ECC x 3 → 위절제술 → ECC x 3
  - ECC x 3 → 위절제술 → CRT
- ECC: 에피루비신, 시스플라틴 / 카페세타빈
- CRT: 45 Gy, 카페세타빈과 25 fx

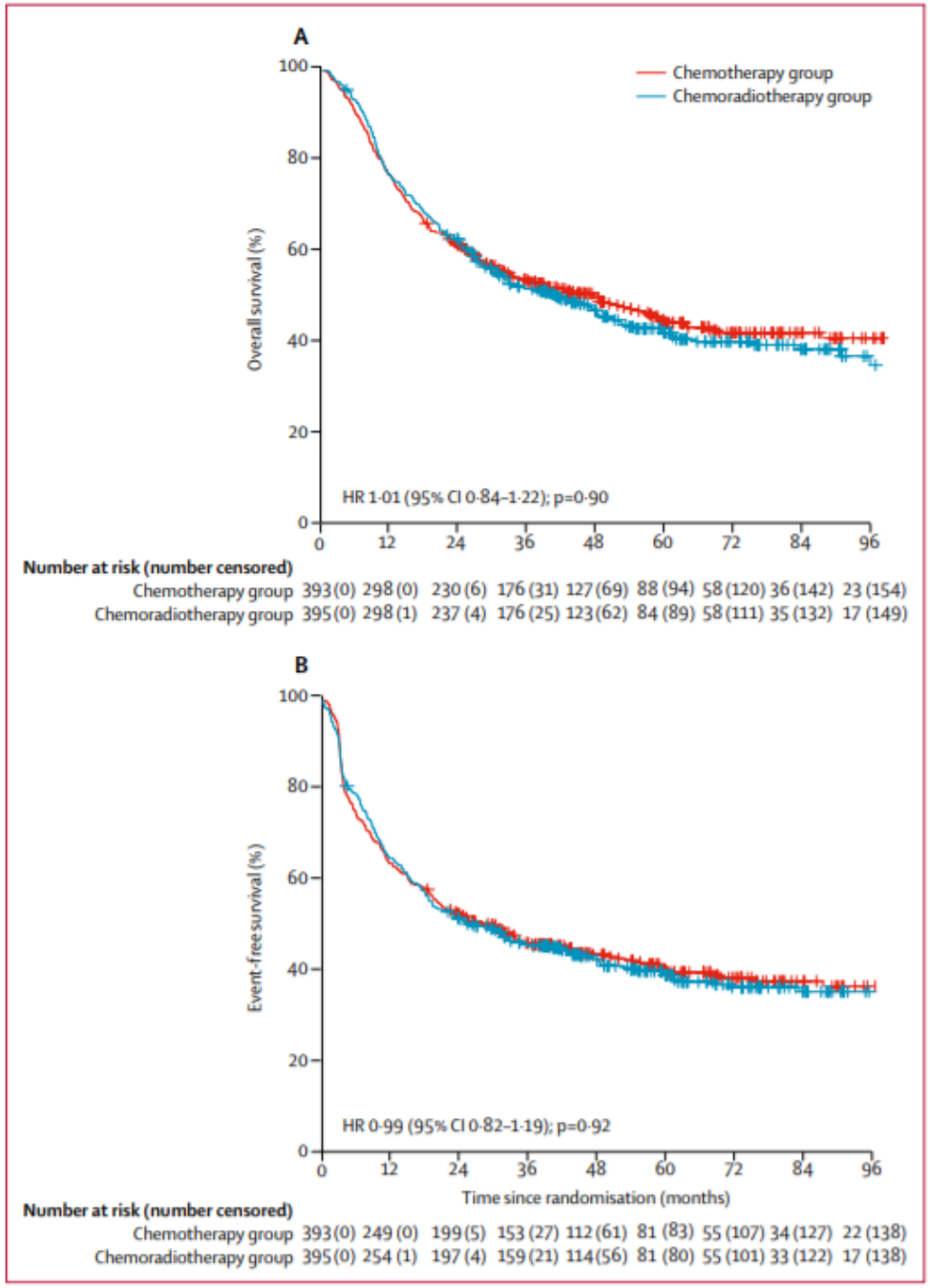


Figure 2: **Overall survival (A) and event-free survival (B)**
HR=hazard ratio.

	CT	CRT
5 year OS (%)	40.8	40.9
Median OS (yrs)	3.5	3.3

	CT	CRT
5 year PFS(%)	38.5	39.5
Median PFS (yrs)	2.3	2.5

Naik M et al.

관리/요약

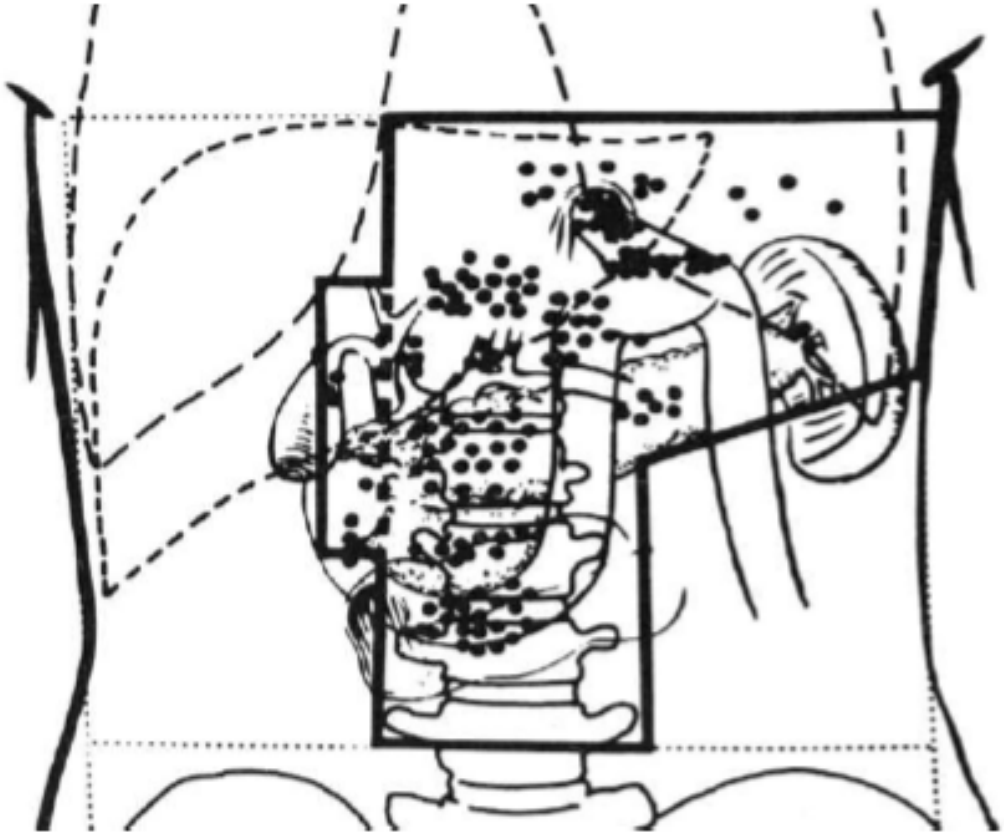
- 부수 화학 방사선 치료 나 수술 전후 화학치료가 위암 치료에 적합

위암 임상시험 2상 수술전 임상시험

임상시험	N	Induction Chemo	ChemoRT	Path CR	R0	Median Survival
여러 병원	34	5-FU/LV/cis X2	45 Gy + 5-FU	30%	70%	34 m
엠디 엔더슨	41	5-FU/ cis/ paclitaxel X2	45 Gy + 5-FU/paclitaxel	20%	78%	NR at 36 m
RTOG 9904	49	5-FU/LV/cis X2	45 Gy + 5-FU/paclitaxel	26%	77%	23 m

Ajani, JCO, 2004
Ajani, JCO 2005
Ajani, JCO, 2006

위암 – 유 민 2차
재발 유형



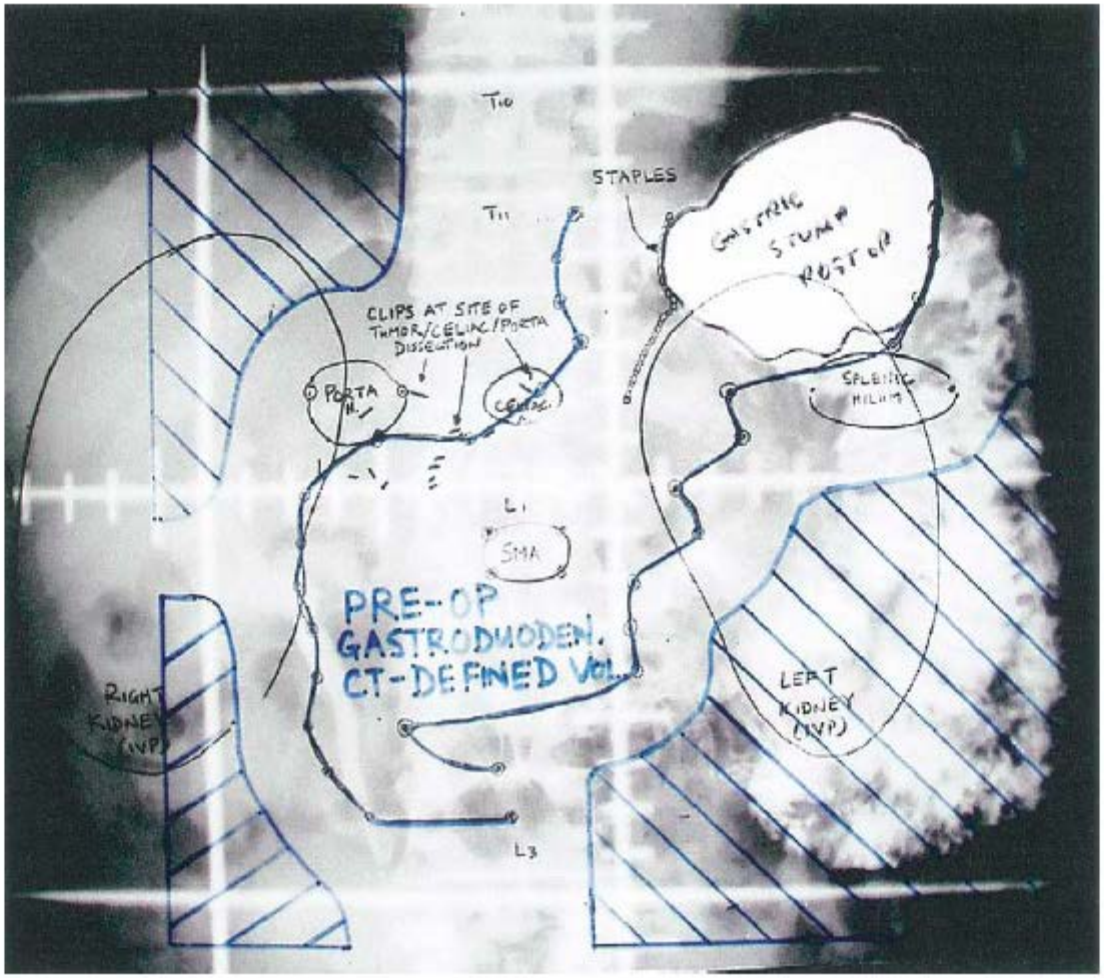


Fig. 1. Simulation film for T3 antral tumor with two of five peritumoral lymph nodes metastatically involved. Simulation film shows areas at risk of locoregional relapse. Preoperative tumor bed is identified by preoperative CT scan; staple lines help locate duodenal stump and area of gastric transection. Regional lymphatics are identified from CT scans. Splenic nodes are included with tolerable kidney volumes. Note proximity of splenic hilar nodes to residual stomach and perigastric nodes.

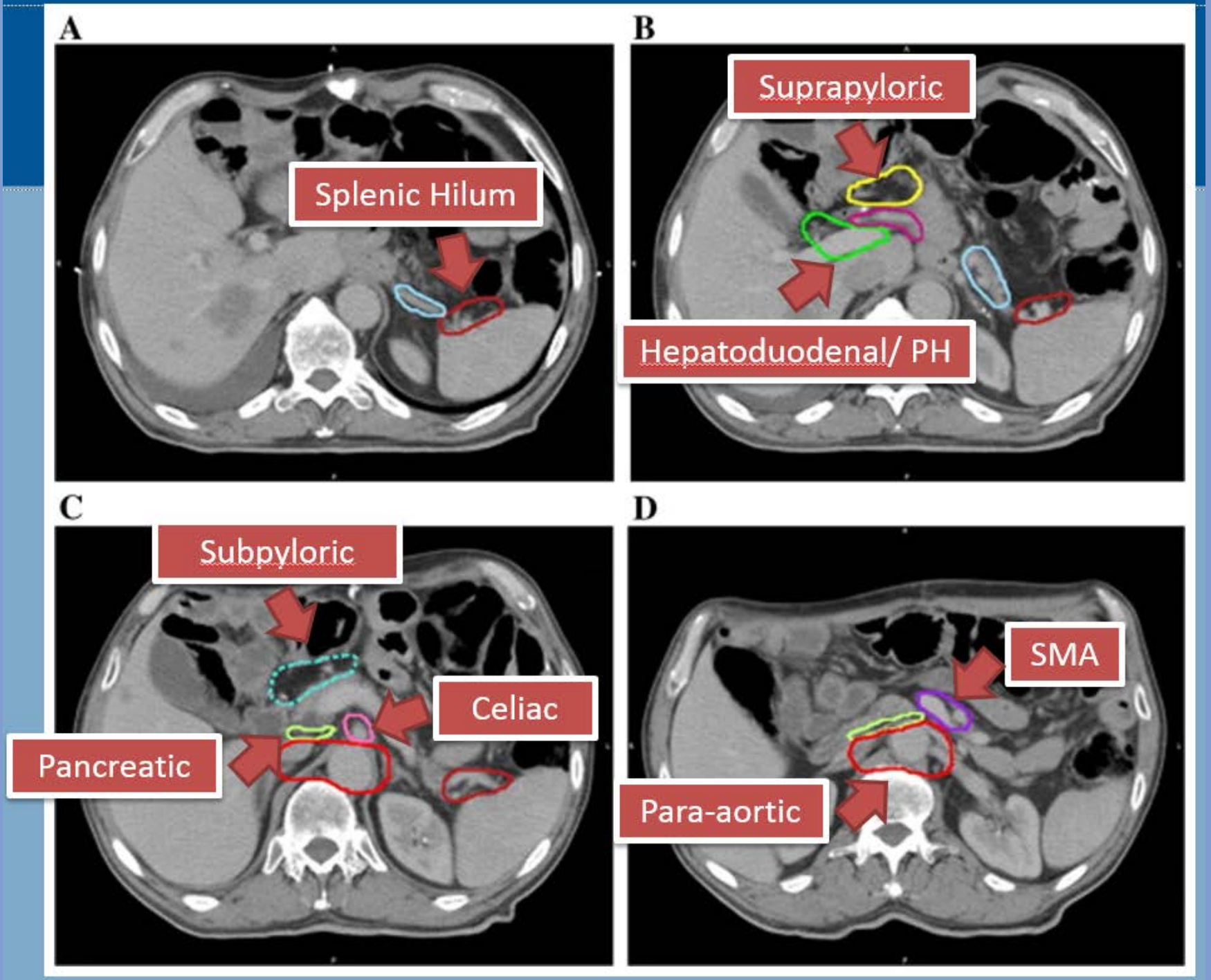
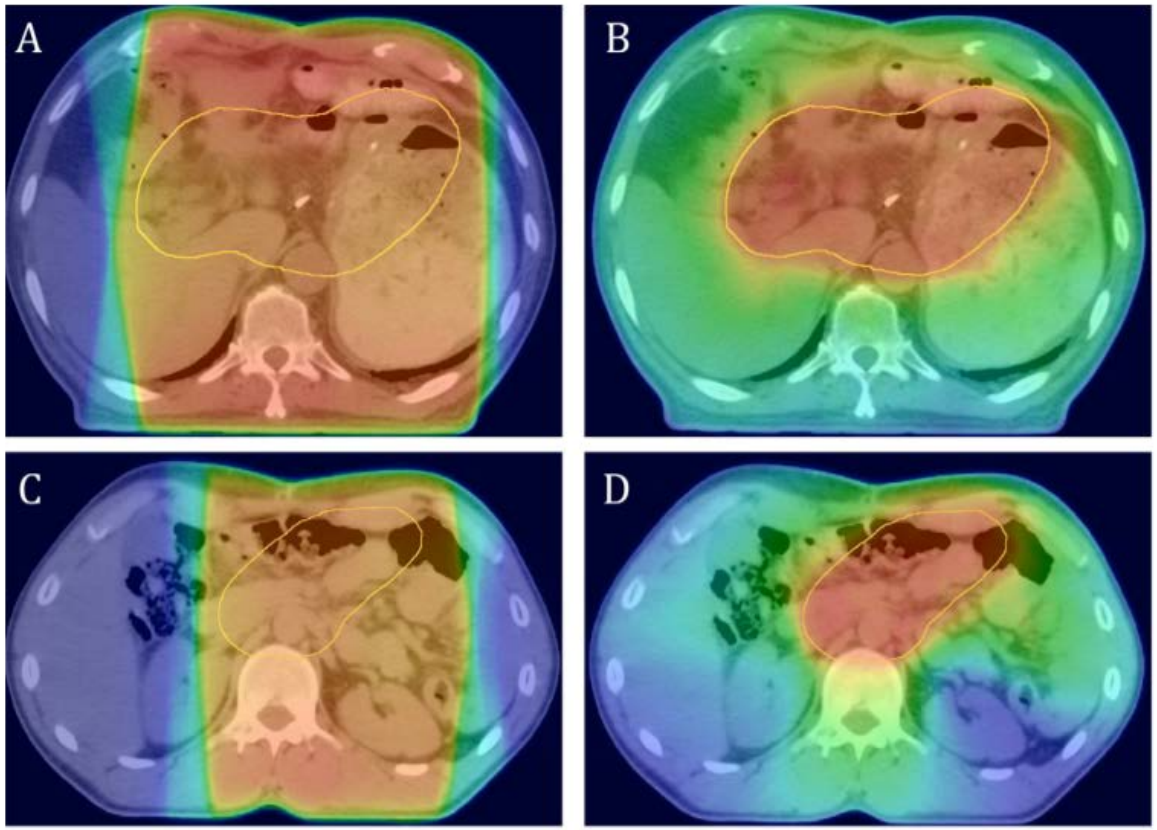

A
Splenic Hilum
B
Suprapyloric
Hepatoduodenal/ PH
C
Subpyloric
Celiac
Pancreatic
D
SMA
Para-aortic

FIGURE 2: Dosimetric Colorwash Comparison of Conventional Radiotherapy and Volumetric Modulated Arc Therapy (VMAT)



Two patients, each with resected pT3N3M0 adenocarcinoma of the stomach, were treated with 4500 centigray (cGy) in 180 cGy fractions prescribed to the planning target volume (yellow line) with concurrent capecitabine. Conventional plans (A,C) are shown in the left column; VMAT plans (B, D) are shown in the right column. There is substantial liver-sparing in the first patient (top row) and kidney-sparing in the second patient (bottom row) with VMAT.

Repka et al. Role of Radiotherapy in management of Gastric Cancer