



**Complicanze postoperatorie, tossicità acuta e cronica
in una casistica monoistituzionale
di pazienti trattati con radioterapia preoperatoria
short course e chirurgia non immediata**

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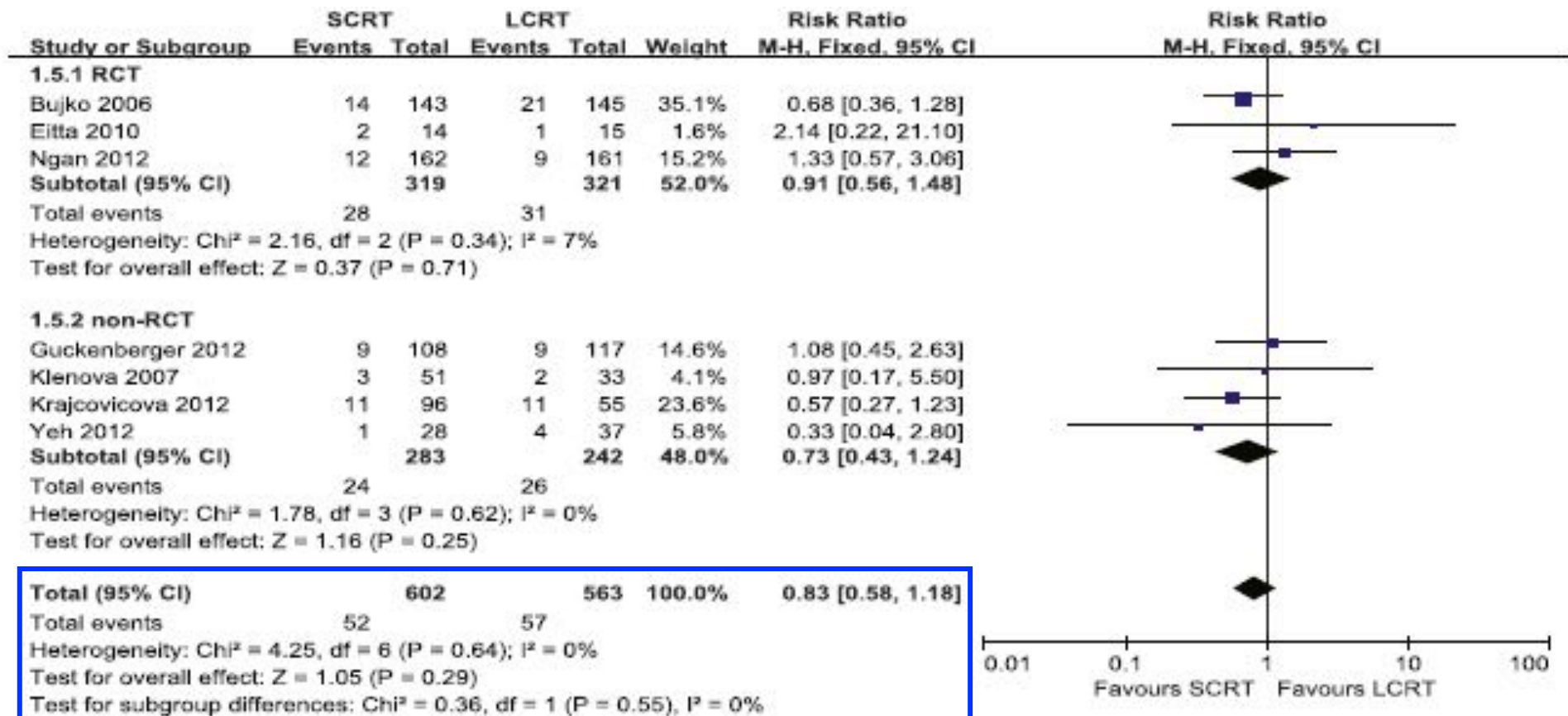


Background

LCRT vs SCRT

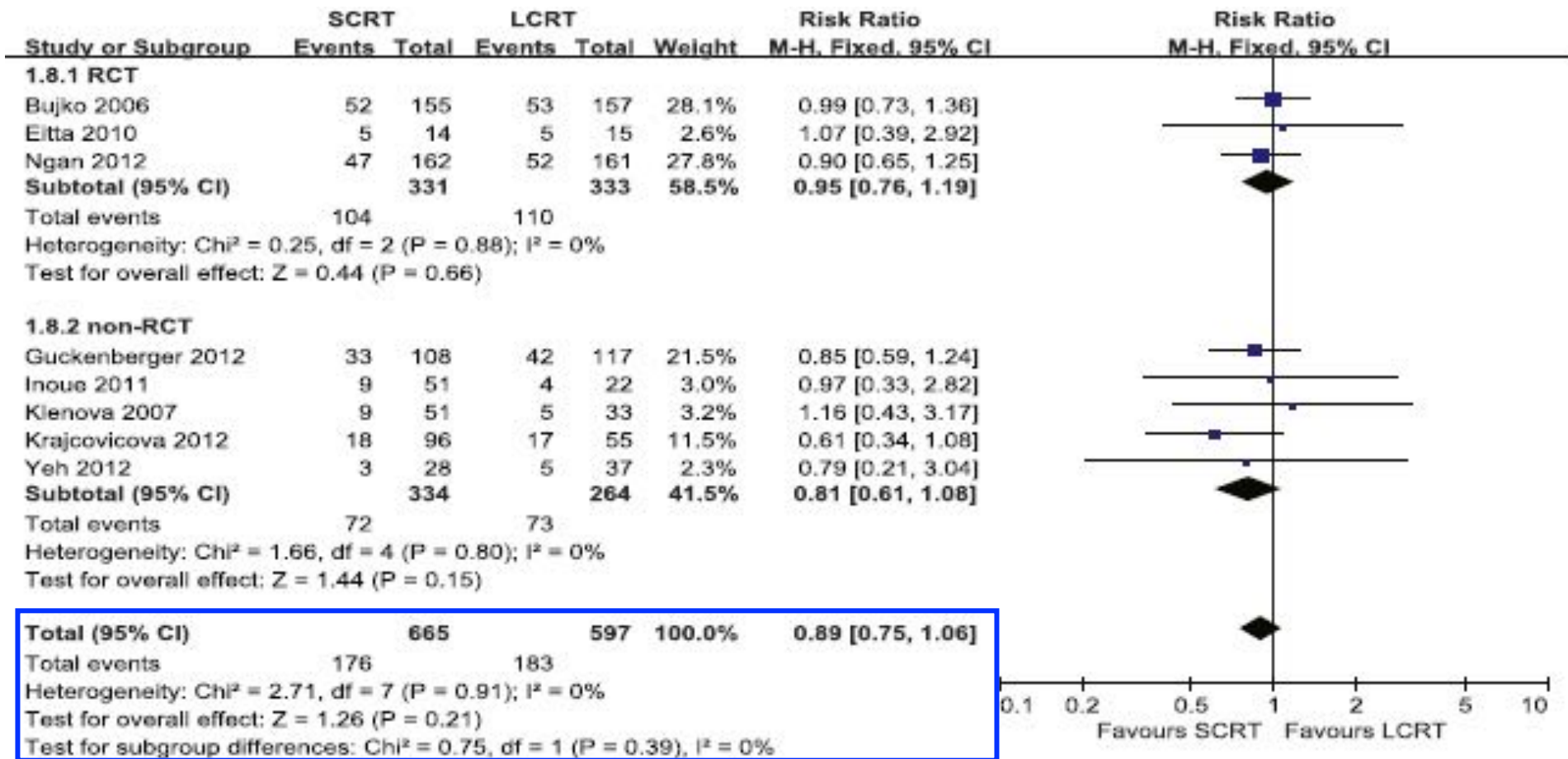
Meta-analysis of 12 trials, 2187 patients

Local Recurrence



Background LCRT vs SCRT Meta-analysis of 12 trials, 2187 patients

Overall Survival



70 pts with RC treated
with neoadjuvant RT
from 2010 to 2013
at San Donato
Hospital (Arezzo)

36 with CRT

34 with SC-RT

MDT evaluation

27 unfit for CT
4 "frail" at CGA
3 refused CT

End points

Primary end points:

- ✓ Local control
- ✓ Postoperative side effects of SCRT + moderately delayed surgery

Secondary end points:

- ✓ Acute toxicity
- ✓ Late toxicity
- ✓ Overall survival

| Characteristics | N |
|------------------------------|------------------|
| Age (median) | 75 (range 65-86) |
| Sex (M : F) | 14 : 10 |
| Tumour Height | |
| Low (< 6 cm) | 4 |
| Medium (6-10 cm) | 15 |
| High (> 10 cm) | 5 |
| Clinical Tumour Stage | |
| II A (T3N0) | 7 |
| III A (T2N1) | 2 |
| III B (T3N1-T3N2) | 15 |

Staging workup



DRE

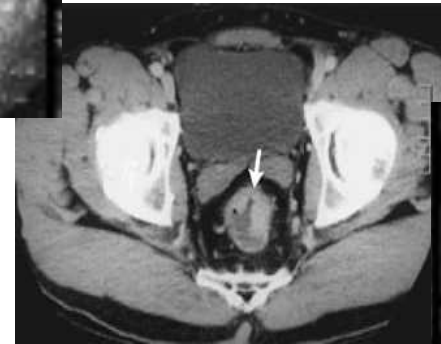


ENDOSCOPY

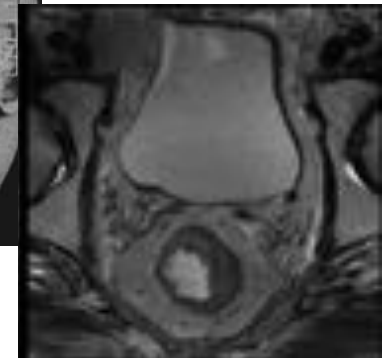


ERUS

Chest/abdomen CT scan

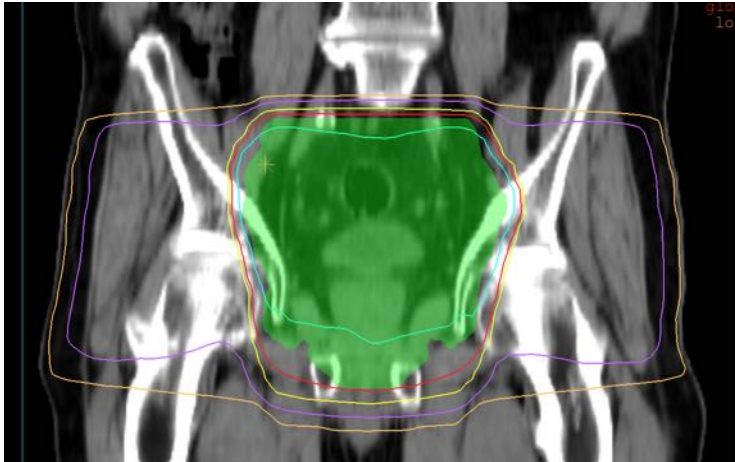


Pelvic MRI

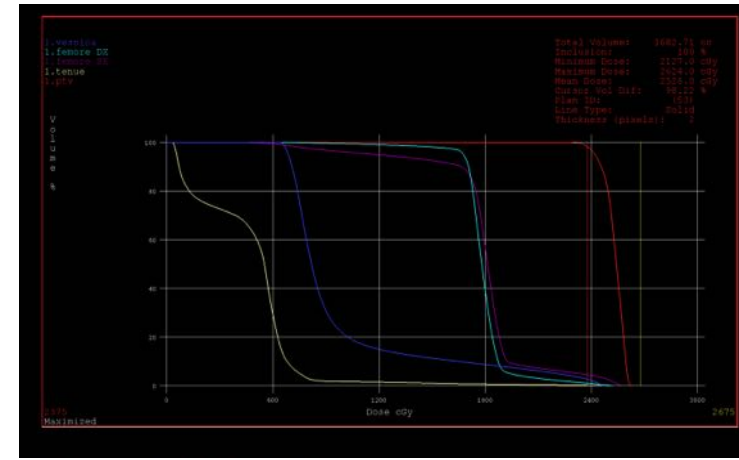
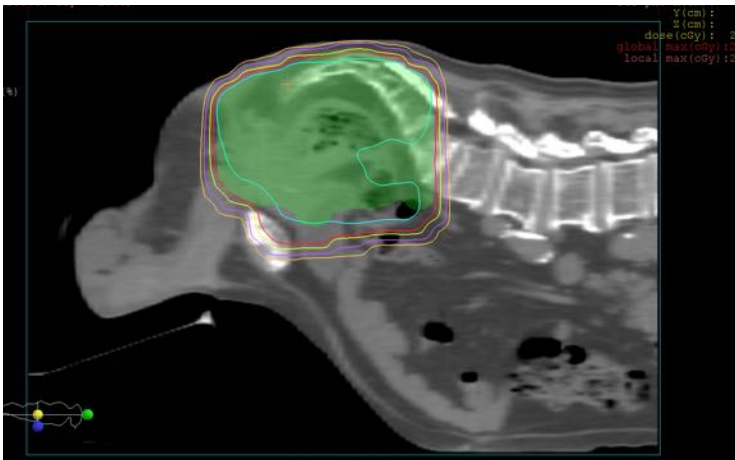
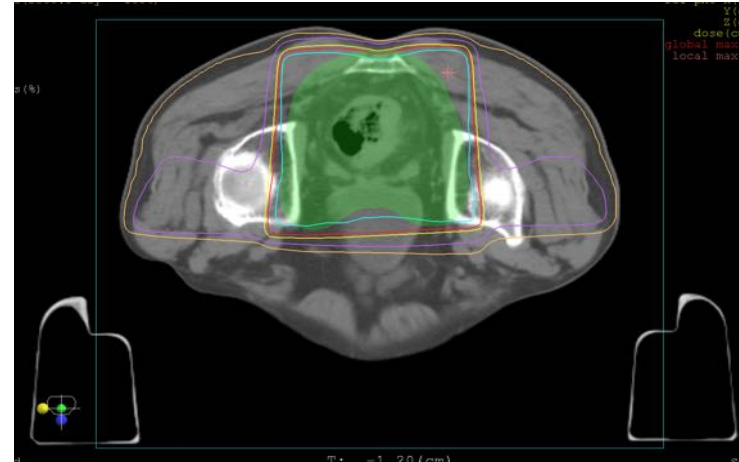


Radiotherapy

3D-CRT: 25 Gy/5 fx



Prone position on a belly board device



Constraints

Time-corrected linear quadratic model
for SCRT

$$\text{BED} = Nd(1 + d/\alpha - \beta - K(T - T_{\text{DELAY}}))$$

if $\alpha/\beta=5 \rightarrow \text{BED} = 40 \text{ Gy}$

SMALL BOWEL
12.3 Gy < 150 cm³

BLADDER
15 Gy < 50%

FEMORAL HEADS
Dmax < 18 Gy

ACUTE RT-related toxicity

| GI toxicity (RTOG scale) | N (%) |
|--------------------------|-----------|
| G1 | 5 (20.8%) |
| G2 | 0 |
| G3 | 0 |
| GU toxicity (RTOG scale) | |
| G1 | 7 (29.2%) |
| G2 | 2 (8.3%) |
| G3 | 0 |


LATE toxicity

| GI toxicity (RTOG scale) | N (%) |
|--------------------------|-----------|
| G1 | 3 (12.5%) |
| G2 | 1 |
| G3 | 0 |
| GU toxicity (RTOG scale) | |
| G1 | 0 |
| G2 | 0 |
| G3 | 0 |

Surgery

Median Time To Surgery: 14 days (range 7-62)

| Type of Surgery | n=24 |
|-------------------------------|------|
| Anterior resection +TME | 17 |
| Abdominoperineal resection | 7 |

Surgey not performed in 12 pts  Distant PD in 5
Contraindication to surgery
in 7

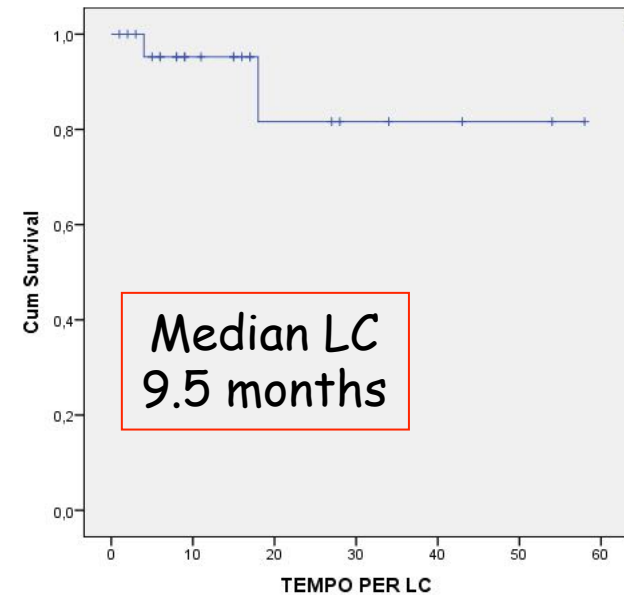
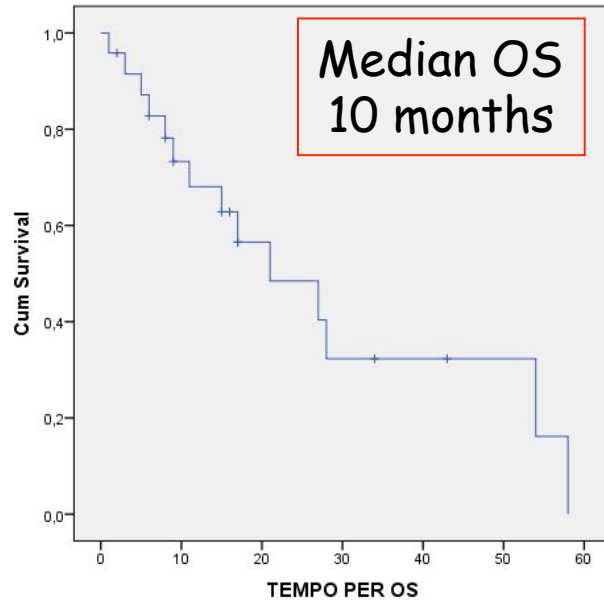
Pathological outcome

| pSTAGE | N |
|---------------|----|
| ypT0N0 R0 | 1 |
| ypT1N0 R0 | 1 |
| ypT2N0 R0 | 4 |
| ypT3N0 R0 | 6 |
| ypT2N1 R0 | 2 |
| ypT3N1 R0 | 7 |
| ypT3N2 R0 | 3 |
| TRG (Dworack) | |
| TRG 0 | 16 |
| TRG 1 | 1 |
| TRG 2 | 4 |
| TRG 3 | 2 |
| TRG 4 | 1 |
| pCRM | |
| Negative | 24 |
| Positive | 0 |

→33.3%

→100%

Clinical outcome



| STATE | N (%) |
|-----------------------------------|-----------|
| Alive without evidence of disease | 16 (66.6) |
| Alive with disease | 2 (8.3) |
| Dead of RC | 3 (12.5) |
| Dead of other causes | 3 (12.5) |

| SITE OF RELAPSE | N (%) |
|------------------|----------|
| Sincronous LR+DM | 3 (12.5) |
| DM only | 2 (8.3) |
| Liver | 1 |
| Liver+ lung | 1 |

Postoperative complications

Median time from surgery of 14 days

| Type | N=3 (12.5%) |
|---------------------|-------------|
| Presacral abscess | 2 |
| Bowel obstruction | 1 |
| Postoperative death | 0 |

Factors related to postoperative complications and late toxicity

| | p value |
|-------------------|---------|
| Age | 0.33 |
| Tumour Height | 0.23 |
| RT acute toxicity | 0.57 |
| Surgery type | 0.07 |

Postoperative complications related to late GI toxicity (p= 0.007)

Preoperative short-course radiotherapy with delayed surgery in primary rectal cancer

D. Pettersson¹, T. Holm¹, H. Iversen¹, L. Blomqvist¹, B. Glimelius^{2,3} and A. Martling¹

G3 acute toxicity 5.4%, postoperative complications 38.4%

Tumour regression in the randomized Stockholm III Trial of radiotherapy regimens for rectal cancer

D. Pettersson¹, E. Lörinc², T. Holm¹, H. Iversen¹, B. Cedermark¹, B. Glimelius^{2,3} and A. Martling¹

pCR 11.8%, Dworak TRG4 10.1%, positive CRM 6.3%

Short-course preoperative radiotherapy with delayed surgery in rectal cancer – A retrospective study

Calin Radu^{a,*}, Åke Berglund^a, Lars Pahlman^b, Bengt Glimelius^{a,c}

G3-4 acute toxicity 8.7%, R0-1 resection 92%

Conclusions

- ✓ SCRT followed by moderately delayed surgery is well tolerated both in term of acute and late side effects.
- ✓ SCRT has considerable anti-tumour activity and can result in radical surgery without increasing postoperative complications rate.
- ✓ The best interval between SCRT and surgery is still not clear as well as predictive factors of response.



Thanks for your attention!