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**Article:**

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<https://doi.org/10.1016/j.clon.2021.12.004>

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## Short course radiotherapy for rectal cancer: Landmark studies

SCRT (-I): SCRT with immediate surgery

SCRT (-D): SCRT with delayed surgery

1990

### 1996 Swedish Rectal Trial [8]

Pre-op SCRT (-I) + surgery vs surgery alone.

*Resectable tumours*

MRI use not stated

Reduced local recurrence SCRT arm ( $p < 0.001$ ).

Long-term results: better OS and CSS also.

### 1993 Frykholm et al [13]

Pre-op SCRT (25.5Gy) (-I) + surgery vs surgery + post-op RT (60Gy).

*Duke's B and C*

MRI use not stated

Reduced local recurrence pre-op arm ( $p = 0.02$ ).

No OS difference between arms.

2000

### 2006 Polish Trial [14]

SCRT (-I) + TME vs LCRT + TME

Optional adjuvant 5-FU chemotherapy

*T3/4 resectable tumours*

MRI used to exclude T1/2

No significant difference local control/OS

Better pCR & rate of negative CRM with LCRT

No significant difference in within trial late toxicity

### 2001 Dutch TME Trial [5]

SCRT (-I) + TME vs TME

*Resectable tumours*

MRI use not stated

Better local control (SCRT arm)

No DFS/10 year OS difference

2010

### 2012 TROG-01.04 Trial [15]

SCRT (-I) + TME vs LCRT + TME *Resectable tumours (T3 N0-2)*

Majority staged with MRI and/or endorectal US

No significant difference local control/OS

Better downstaging/pCR with LCRT

### 2009 MRC CR07 & NCIC-CTG C016 Trial [7]

SCRT (-I) plus TME vs TME plus post-op LCRT if R1

*Resectable tumours*

MRI staging used in 60% patients

Reduced local recurrence in SCRT arm.

### 2017 Stockholm III [9]

SCRT (-I) + TME vs SCRT (-D) + TME vs LCRT + TME

*Resectable tumours*

Majority staged with MRI

No difference distant metastases

No difference local control

Surgical morbidity better if SCRT(-D) versus SCRT (-I)

### 2016 Polish 2 Trial [19]

SCRT (-D) + FOLFOX x3 + TME vs LCRT + TME

*Fixed T3/4/recurrent disease*

MRI used in 66% patients

No significant difference R0/pCR rate

Extended follow up: no sig difference DFS/OS

2020

### 2021 TREC (Feasibility trial) [43]

SCRT (-D) + TEM vs TME

*T1/2N0*

MRI mandated

70% organ preservation, 30% pCR and significantly reduced severe toxicity in SCRT arm versus TME alone

### 2020 RAPIDO [20]

SCRT (-D) + CAPOX x6 + TME vs LCRT + TME

*T4/EMVI/N2/CRM positive*

MRI mandated

Significantly reduced disease related treatment failure & distant metastases, better pCR for SCRT arm

Increased local recurrence for SCRT arm (not significant)