

MRI-based 'Wait-and-see' policy in clinical complete responders to chemoradiation in rectal cancer: a promising alternative

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Objectives:

Neoadjuvant chemoradiation for locally advanced rectal cancer increasingly results in a complete response (ypT0N0, i.e. no residual tumour cells). For these complete responders surgery may safely be omitted and patients could undergo intensive follow up in stead: a 'wait-and-see' policy. In order to safely select patients for wait-and-see, it is essential that the response evaluation after chemoradiation is accurate enough to select the appropriate candidates. Furthermore the follow up tools need to be accurate enough to identify a tumour recurrence in an early phase so that patient can still undergo salvage surgery without compromising their oncological risk.

The purpose of this study was to determine whether patients can accurately be selected for a wait-and-see policy using MRI as the main selection tool. Furthermore we aim to test if patients that undergo 'wait-and-see' (and intensive follow-up with MRI) have a comparable prognosis as compared to patients with a pathological complete response (pCR) after surgery.

Methods

After chemoradiation patients underwent standard T2-weighted TSE sequences (in 3 orthogonal directions) at 1.5T to evaluate the response to therapy. When MRI indicated a complete response, patients underwent endoscopy + biopsies to confirm the MRI outcome. When both MRI and endoscopy indicated a complete response, patients were offered a wait-and-see policy, with intensive follow-up, consisting of 6-24 weekly MRI, endoscopy and laboratory examinations. The pCR-control group was identified from a multicenter prospective rectal cancer cohort-study.

Results

12 clinical complete responders (median age 63 yrs) were identified on MRI and offered a wait-and-see policy. Median follow-up for this group is 20 months (range 2-56). Two patients from the wait-and-see group had synchronous liver metastasis at diagnosis, treated with curative intent. 15 patients (median age 67 yrs) with pCR after surgery were identified from the control-group, with a median follow-up of 32 months (range 8-53).

One patient from the wait-and-see group developed recurrent liver metastasis and a possible local recurrence. In the pCR control-group one patient developed lung metastasis and one patient died of pneumonia. All other patients for both groups are disease-free and alive. Overall survival is 100% for the wait-and-see patients and 92,9% for the pCR-patients.

Conclusion

- Selection of complete responders after chemoradiation for a 'wait-and-see'-policy is feasible using MRI as the main selection and follow-up tool.
- MR-based wait-and-see policy thus constitutes a promising and potentially feasible alternative to standard surgical treatment.

<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>4th year</u>	<u>5th year</u>
2x visit	2x visit	2x visit	1x visit	1x visit
4x lab	4x lab	4x lab	2x lab	2x lab
2x CT	1x CT	1x CT	1x CT	1x CT
3x MRI	2x MRI	2x MRI	2x MRI	2x MRI
3x sigmo	1x sigmo	2x sigmo	2x sigmo	2x sigmo

Fig.1 The follow-up schedule in the wait-and-see group was more intensive than standard follow-up after surgery. This figure shows the standard follow-up after surgery + the additional diagnostics applied in the wait-and-see group (red box). MRI is one of the main follow-up parameters in the follow-up of wait-and-see patients.

Fig. 2 Results for the patients with a complete response on MRI (+ endoscopy) that underwent wait-and-see (cCR + W&S) as compared to the pathological complete responders from the control group that did undergo surgery (pCR after TME)

