RADIOLOGICAL ASSESSMENTS FOR SELECT PATIENTS IN NEOADJUVANT SETTING IN RECTAL CANCER: MONOISTITUTIONAL EXPERIENCE

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Background

Neoadjuvant radiochemotherapy (NCRT) reduces the risk of local recurrence in patients (pts) with locally advanced rectal cancer (LARC). Preoperative staging is important for distinguishing between patients who need only surgery and those who will be at high risk of local disease recurrence without preoperative therapy [1, 2]. The main issue is the accurate staging before and after NCRT and its predictive role for select responding patients.

Purpose

The aim of our study was to determine, by a retrospective analysis, the diagnostic accuracy of MRI (pelvic magnetic resonance imaging) and EUS (endoscopic ultrasound) imaging in patients with rectal carcinoma and compare post-chemoradiation MRI and EUS findings with the pathological specimens obtained after surgery.

Methods

From January 2010 to November 2014 71 consecutive pts with rectal cancer (stage II-III) received NCRT with capecitabine 825 mg/m² bid concomitant with 45-50 Gy conventional fractionation external beam radiotherapy followed by radical surgery (total mesorectal excision) at 12 weeks. All patients were staged with MRI; 65 of them performed also EUS before and after NCRT (table 1).

Median age	64years (36-84)
pts staged with MRI	71
pts staged with EUS	65
Lower tumor %	51%
Sphincter preservation %	55.5%
N+ detected with MRI %	95.6%
N+ detected with EUS %	73.5%

Table 1: Patient characteristics
Abr: pts: patients N+: positive lymph nodes

Response %	Patients (n=71)
Complete response	24%
Partial response	50%
Stable disease	21%
Disease progression	5%

Table 2: Response Rate

	T staging (%)			**N staging (%)**	
	MRI	EUS		MRI	EUS
T0-2	40.3	63.5	N0	73.0	29.8
T3	59.7	36.5	N1	27.2	70.2

Table 3: post-treatment RMI and EUS T and N staging

	T detection agreement (%)		**N detection agreement (%)**	
	MRI	EUS	MRI	EUS
All pts	39.0	41.5	53.0	66.0
pCR group	23.5	47.0	50.0	76.0

Table 4: MRI/EUS and T/N histological agreement

Results:

The mean age of patients was 64 years (range: 36-84). 51% pts had tumor in lower third of rectum and sphincter preservation was performed in 55,5% of patients (table 1). Pathological complete response (pCR) was observed in 24% of patients, partial response in 50%, no response in 21% and progression disease in 5% (table 1). Median follow-up was 22 months. At this time disease-free-survival was 81,7% and overall survival was 85,9%. Median time for restaging exams was 32 days (11-68) from the end of therapy. In the staging phase (before NCRT) there was concordance between EUS and MRI in 91,3 % of cases with regard tumor (T) stage and 70,9% for lymph nodes (N) stage; MRI is able to detect lymph node involvement increased by 20% compared to EUS. Postreatment staging performed respectively with RMI and EUS evaluating separately T (dived in T0-2 vs T3) and N is summarized in Table 3.
In the post-treatment phase pelvic MRI predicted pathological T stage in 39,0 % versus 41,5% for EUS and in 53,0 % versus 66,0 % respectively for N stage. For the subgroup of pts with pCR MRI predicted pathological T stage in 23,5 % versus 47,0% for EUS and in 50,0 % versus 76,5 % respectively for N stage (table 4).

Conclusions

MRI and EUS showed good performances for staging rectal cancer but nodal staging remains challenging. Both techniques appear to be inadequate in predicting response and especially in predicting the pathologic complete response after NCRT. It is necessary to improve diagnostic tools and develop predictive markers of response in order to be able, in the future, to select pts that may avoid surgery or adjuvant chemotherapy.

References

1. Valentini V et al (2008) Evidence and research in rectal cancer. Radiother Oncol 87:449–474
2. Iafrate F et al (2006) Preoperative staging of rectal cancer with MR imaging: correlation with surgical and histopathologic findings. Radiographics 26:701–714.

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