Table C-19. Reported data: MRI versus ERUS for preoperative primary rectal staging changes in management

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| **Study** | **Type of Cancer, Number of Patients** | **Design** | **Results** | **Conclusions** |
| Yimei et al. 201293 | Rectal cancer,  69 had MRI, 60 had ERUS | For each patient, 3 treatment strategies were designed: S-1 was based solely on MRI or ERUS staging; S-2 was based on MRI or ERUS staging plus any other clinical information available and was the actual treatment performed; S-3 was based on the pathological results after surgery (the reference strategy). | Compared with the reference strategy, MR1 based strategy would have undertreated 3/69 cases and overtreated 11/69, with accurate treatment of 55/69, vs. ERUS based strategy would have undertreated 4/60 and overtreated 10/60 with accurate treatment of 46/60.  The actual treatment (S-2) using MRI plus clinical would have undertreated 2/69 and overtreated 2/69 vs. ERUS plus clinical would have undertreated 2/60 and overtreated 2/60. | The actual treatment accuracy using MRI plus clinical information was 94.2% vs. 91.7% for ERUS plus clinical information; the treatment accuracy using MRI alone was 76.7% vs. 66.7% for ERUS. |
| Brown et al. 2004125 | Rectal cancer, 98 | Treatment strategies were devised based on MRI or ERUS staging; the patients were then treated using all available information; and histopathology was used to define the “correct” treatment that should have been used. | Compared with the reference strategy, MRI based strategy would have undertreated 11/98 and overtreated 1/98 patients with accurate treatment of 86/98, vs. ERUS based strategy would have undertreated 32/98 and overtreated 19/98 with accurate treatment of 47/98. The majority of errors with ERUS were understaging locally advanced (T4) cancers as T3 and overstaging T1/T2 as T3. | The treatment accuracy using MRI was 87.8% vs. 48.0% for ERUS |

ERUS=Endorectal ultrasonography; MRI=magnetic resonance imaging.