BETWEEN THE SHADOWS AND THE SCALPEL: UNMASKING DISCREPANCIES IN MRTRG RELIABILITY FOR RECTAL CANCER SURGERY

S.G Afridi[1], S. Hussain[1], S. Khan[1], I. Nasir[1], F. Shah[1]
[1]Shaukat Khanum Memorial Cancer Hospital and Research Centre, Radiation Oncology, Peshawar, Pakistan.

OBJECTIVE

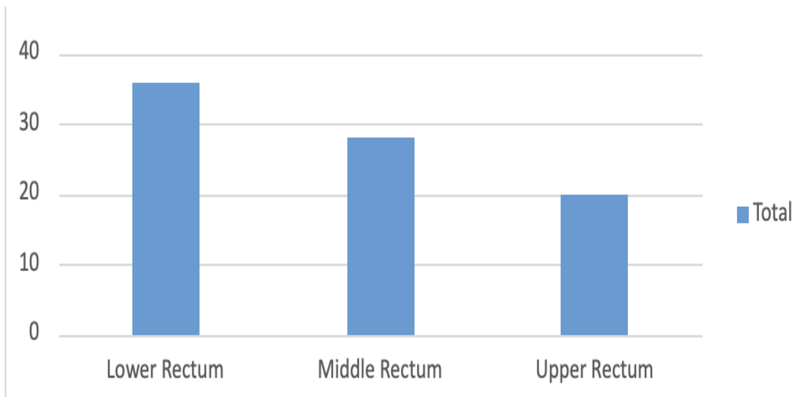
- To identify patients with a complete pathological response (pCR) following neoadjuvant treatment and retrospectively assess the correlation between pCR and the Magnetic Resonance Tumor Regression Grade (MR-TRG).
- To evaluate the diagnostic accuracy of MR-TRG in identifying patients with a complete clinical response (cCR) and assess its potential in guiding decisions to defer surgery in favor of active surveillance.

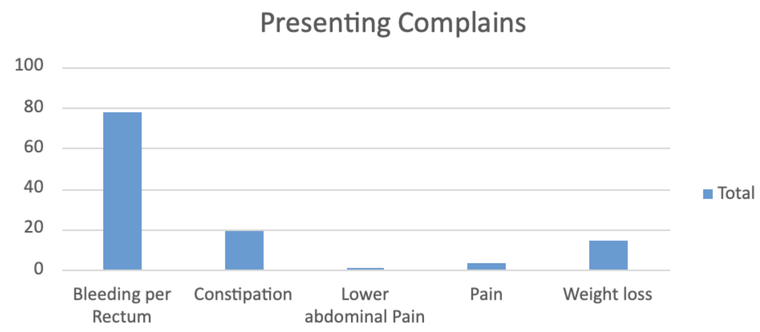
TREATMENT

All patients included in cohort with initial MR staging revealed that 1 patient had Stage 1 (T2N0) disease, 8 patients had Stage 2 (T3N0), and 74 patients had Stage 3 disease, with sub-stages including T2N1, T2N2, T3N1, and T3N2 and 1 patient had Stage 4 (T3N1M1) disease underwent Neoadjuvant treatment. 72 patients underwent chemoradiotherapy while 12 patients underwent chemotherapy alone.

RESULTS

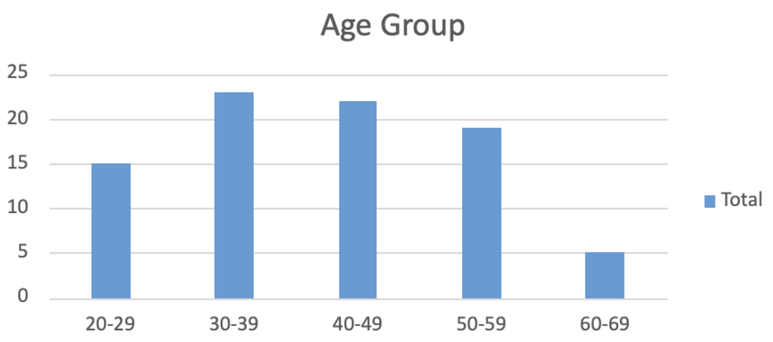
The patient cohort consisted of 37% females and 63% males, with an average age of 42.15 years. The youngest patients were 23 years old, while the oldest was 69 years old. Most patients (68%) presented with rectal bleeding, 17% with constipation, 14% with weight loss & 1% with lower abdominal. Baseline CEA levels averaged 9.35, median value of 3.5 with values ranging from 0.8 to 89.24% of the tumors were in upper rectum, 33% in the middle rectum and 36% in the lower rectum. Histologically, 53% of tumors were moderately differentiated adenocarcinomas, 20% were poorly differentiated, 7% were well differentiated, 10% were signet ring cell adenocarcinomas, and 4% were mucinous adenocarcinomas. Initial MR staging revealed that 1 patient had Stage 1 (T2N0) disease, 8 patients had Stage 2 (T3N0), and 74 patients had Stage 3 disease, with sub-stages including T2N1, T2N2, T3N1, and T3N2. Additionally, 1 patient had Stage 4 (T3N1M1) disease. In terms of ASA scores,96% of patients were classified as ASA Score 2, and 10% were ASA Score 3. Surgical interventions included abdominoperineal resection in of 45% patients, low anterior resection in 32%, and ultra-low anterior resection in 13% while Hartman in 1%. Post-surgery, all patients were classified as T0N0M0. However, the retrospective mrTRG grading system correlation revealed a complete response in only 18 patients, near-complete response in 17, moderate response in 12, and slight response in 7. Additionally, this cohort of 84 patients was followed till Sep 2024, 63(75%) patients remained disease-free and alive, including the one who initially presented with metastatic disease. However, 20(23%) patients died.2% patients were loss to follow up.

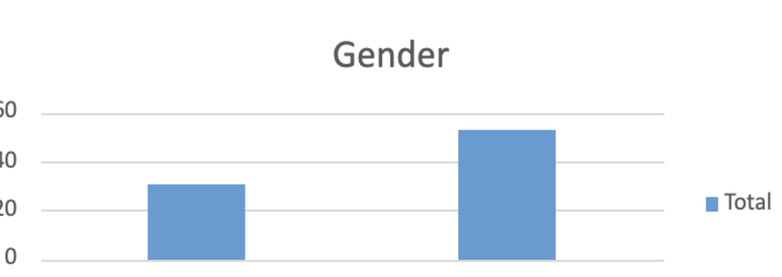




METHODS

MRI and pathologic data from 84 registered patients who underwent neoadjuvant treatment and total mesorectal excision from May 2018 to Jan 2024 were retrospectively analyzed. Clinical features such as presenting complaints, ASA score, baseline CEA and tumor location in the rectum along with histopathological features were studied. Tumor regression grading was performed by institutional radiologist employing the most widely used Brown et al proposed mrTRG system at T2-weighted MRI.





Histopath Report	Sum of People	percentages
Moderately differentiated adenoarcinoma	46	53%
Mucinous adenoarcinoma	4	5%
Poorly differentiated adenoarcinoma	20	23%
Signet ring cell adenoarcinoma	10	11%
Well differentiated adenocarcinoma	7	8%
Grand Total	87	100%

CONCLUSION

Despite the widespread recommendation of the mrTRG system for assessing treatment response and potentially deferring surgery, its reliability in our setup has not been particularly impressive. This suggests that while the system could have indicated a possible deferral of surgery for 63(75%) patients based on their response, the remaining 22 (23%) of patients would still have required surgical intervention. Therefore, further research is warranted to improve the accuracy and applicability of the mrTRG grading system in determining the need for surgery and optimizing treatment strategies.

SHAUKAT KHANUM MEMORIAL
CANCER HOSPITAL & RESEARCH CENTRE

7-A Block R III, Johar Town, Lahore, Pakistan

www.shaukatkhanum.org.pk