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Younger Patients have a Higher Incidence of Advanced Stage Rectal Adenocarcinoma at Time of Diagnosis S. Sujatha-Bhaskar,* A. Dosch, S. Mills, J.C. Carmichael, A. Pigazzi, M.J. Stamos, M.D. Jafari. *University of California Irvine Medical Center, Orange, CA.*

Background: Recent studies have highlighted the growing incidence of rectal cancer in younger patient demographics (age < 50). Due to the absence of standardized screening modalities for younger age groups, we hypothesize that these patients are at a higher risk for advanced disease at time of diagnosis. **Methods:** The National Cancer Database from 2006-2014 was reviewed for this study. Inclusion criteria consisted of patients diagnosed with rectal adenocarcinoma who underwent neoadjuvant chemoradiation, surgical resection, and adjuvant chemotherapy. Study cohorts were stratified by age into the following groups: < 35 years, 35-49, 50-64, and > 65 years. Pathological outcomes were reviewed in each cohort using multivariate analysis with Cox proportional hazard modeling and Kaplan-Meier curves to estimate overall survival. **Results:** Of 13,808 patients were identified who met our inclusion criteria, 2.6% (365) were in the < 35 year group, 22.5% (3,119) in the 35-49 group, 48% (6,597) in the 50-64 group, and 27% (3,727) in the > 65 group. Pathological Stage III disease was present in 41% of the < 35, 37% of the 35-49 group, 32% of the 50-64 group, and 32% of the > 65 group. Incidence of Stage III disease was significantly higher in the < 35 group and 35-49 group when compared to the > 65 group, $P < 0.01$. Younger age groups had a higher incidence of pathological N2 disease with the < 35 at 18%, 35-49 at 13%, 50-64 at 9.4%, and >65 at 9.5%. An R0 resection was obtained in 88% of the < 35 group, 91% of the 35-49 group, 93% of the 50-64 group, and 92% of the > 65 group. Multivariate analysis demonstrated significantly low rates of overall negative margin for the < 35 group compared to 50-64 group (OR 0.52, 95 % CI 0.41-0.95, $P = 0.02$). **Conclusion:** Younger patients with rectal adenocarcinoma have higher rates of nodal involvement and are diagnosed at a later stage. Given a quarter of patients diagnosed with rectal cancer in our study are under 50 years, further investigation should be performed into expanding screening criteria for younger patients at risk.

Clinical and Pathological Characteristics of Age Groups

| | < 35 years N = 365 | 35-49 years N = 3,119 | 50-64 years N = 6,597 | > 65 N=3,727 |
|-------------------------------|-----------------------|--------------------------|--------------------------|-----------------|
| Pathological T-Stage, % | | | | |
| pT0 | 9.6 | 10 | 10 | 11 |
| pT1 | 6.6 | 5.1 | 5.4 | 4.6 |
| pT2 | 21 | 24 | 25 | 26 |
| pT3 | 48 | 46 | 43 | 44 |
| pT4 | 4.1 | 3.9 | 4.3 | 2.8 |
| Pathological N-Stage, % | | | | |
| pN0 | 51 | 52 | 56 | 56 |
| PN1 | 24 | 25 | 24 | 24 |
| pN2 | 18 | 13 | 9.4 | 9.5 |
| Overall Pathological Stage, % | | | | |
| Stage 1 | 18 | 19 | 21 | 21 |
| Stage 2 | 19 | 21 | 23 | 23 |
| Stage 3 | 41 | 37 | 32 | 32 |
| Overall Clinical Stage, % | | | | |
| Stage 1 | 2.5 | 4 | 3.9 | 5 |
| Stage 2 | 25 | 30 | 35 | 38 |
| Stage 3 | 59 | 55 | 50 | 44 |