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# Stage of Disease and Likelihood of Surgical Intervention in Colon Cancer Patients: An Exploratory Analysis of the SEER Database

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Rachel Denny  
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**Stage of Disease and Likelihood of Surgical Intervention in Colon Cancer Patients: An  
Exploratory Analysis of the SEER Database**

**Introduction/Objectives:** Colorectal cancer (CRC) remains as the third-leading cause of cancer-related deaths amongst both men and women in the United States. However, the mortality rate from CRC continues to drop, which has been attributed to increased surgical polyp removal. This study explored the association between disease stage and the likelihood of surgical intervention as primary treatment for the disease.

**Methods:** Retrospective cohort study analysis using de-identified patient data from the NCI's Surveillance, Epidemiology, and End Results (SEER) database from 1998-2015. Inclusion criteria included patients with colon cancer, over 18 years of age, with known disease in either the proximal or distal colon. Patients with rectal cancer were excluded given that surgery is not indicated for lesions in that site.

**Results:** Multivariate analysis results indicated that patients with regional disease are between 4-5 times as likely to receive primary surgical intervention in comparison to those with localized disease (OR=4.557, 95% CI=4.295, 4.835). Distant stage of disease was associated with a significantly decreased likelihood of receiving surgery in comparison to localized stage of disease (OR=0.118, CI=0.114, 0.122). Other factors significantly associated with an increased likelihood of surgical intervention (in descending order) included mucinous adenocarcinoma histology, papillary adenocarcinoma histology, having a partner, adenomatous polyps on histology, white ethnicity, female sex, and lesion location in the proximal colon.

**Conclusion:** It was found that stage at diagnosis was far more predictive of surgical treatment than any of the other variables examined. This finding highlights the importance of screening in order to identify operable disease.