Epidemiology of Colorectal Cancer in Oklahoma

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Introduction and Background

In the state of Oklahoma, between 1998 and 2012, there were 25,781 cases of Colorectal Cancer state wide. Colorectal cancer is a cancer of the large intestine and the last few inches of the colon. The cancer starts out as polyps and then will form into clumps of cancerous cells (American Cancer Society). Colorectal cancer is the third leading cancer in both males and females (Wonder CDC). Colorectal cancer is the only cancer that can be prevented. This prevention can start by getting yearly tests, such as colonoscopies, to help detect early development of polyps (NCI Story of Discovery). Because it is preventable, men and women are implored to be screened if they are 50 years or older (CDC). It is recommended to talk with a physician to find the best source of screening for the individual because each test has advantages and disadvantages (NCI Test to Detect). We used the statistics from the Oklahoma Central Cancer Registry at the Oklahoma State Department of Health to see how this affected males versus females, where they lived, by their race and by their primary insurance payer.

Hypothesis

As a person’s age increases, the chance of being diagnosed with colorectal cancer also increases. Residents in Metro and Urban areas will more likely have insurance rather than residents in rural areas. Patients are found to be diagnosed at the localized and regional stages most often. As the years progressed higher percentages were being diagnosed in the localized stage than the regional stages. Most often. As the years progressed higher percentages were being diagnosed in the localized stage than the regional areas. Patients are found to be diagnosed at the localized and regional stages most often. As the years progressed higher percentages were being diagnosed in the localized stage than the regional stages.

Methods

We used the data base from the Oklahoma Central Cancer Registry at the Oklahoma State Department of Health to get our statistics. We then put the data into excel and made multiple bar graphs and line graphs to clearly portray our data results. We used this method to see the difference or the comparison of the population that was affected with cancer. We used this data to compare with our hypothesis to see if what we thought was true. We made graphs for age of when they were diagnosed, the primary payer, the area where they lived at and what stage the cancer was in at the time of diagnoses. We only evaluated data between 1998 and 2003 on the stage at diagnosis because after 2003 there was a change in formatting that caused many cases to be miscoded leaving many unknowns. We then took that data and used it to find out some odd ratios between the primary payer and gender, the area they lived and payer, the gender and time of diagnoses, etc. We completed multiple odds ratios. We comparing metro/urban and rural areas to primary payer being private insurance, to female cases, and to the age of diagnosis <65. We also did odds ratios of the SEER stage of direct versus regional in the year 2003.

Results

The age specific Incidence rates show across genders that the number of cases for colorectal cancer increases as age increases. Our research also shows that females also start higher than males in the cases, but as time passes they decrease to a point where males have a higher case count. In the age adjusted rate, we can see females being slightly higher than males until around 2003 that they receive a significant decrease as time passed while males were had an increase, and then decreased through the years 2008-2012. Around the years 2004 and 2005 is where we see a shift in the percent of cases by gender. From 1998-2003, we can see that people who had colorectal cancer had it at localized and regional areas the most, with regional having a slight advantage over localized. These areas were consistent throughout the years due to the increased screening catching more cases before it reaches distant. When reviewing we found several significant odds ratios with a 95% confidence interval. A metro/urban resident is 56% more likely to have insurance than a rural resident OR=1.56 (CI=1.31,1.86). A metro/urban resident is 20% more likely to be diagnosed before the age of 65 OR=1.2 (CI=1.04,1.39). A non-significant result with 95% confidence is the date of diagnosis in year 2001 with the Direct Seer stage showing that the stage does not change significantly across the years. OR=1.021 (CI=0.86,1.22).

Conclusion

Our hypothesis is supported by many of the results we found. With the older age, the incidence of colorectal cancer increases. Based on the data, if we could improve screening in metro/urban areas of Oklahoma, we could decrease the incidence rates of colorectal cancer due to the large Oklahoma population in that area. A good study for this would be to see if work place effected chances of receiving colorectal cancer. We ran into some problems with the coded data being displayed as unknown. This could be attributed to a change in, or different coding methods.

References