

Age And Sex Variation in Occurrence of Colorectal Cancer in Guntur

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Abstract:

Introduction: Cancer is a disease characterized by the unchecked division and survival of abnormal cells. When this type of abnormal growth occurs in the colon or rectum, it is called colorectal cancer. Colorectal cancer (CRC) is a formidable health problem worldwide¹. It is the third most common cancer in men (663000 cases, 10.0% of all cancer cases and the second most common in women (571000cases, 9.4% of all cancer cases².

Methods: Medical records of histologically proven colorectal cancer patients registered at hospitals of Guntur from January2012 to December 2016, a period of 4 years were analyzed. Guntur is the medical hub for Guntur district, Krishna district, Prakasam district, Khammam district and Nalgonda districts .Information regarding age, sex, clinical presentation, anatomical site, histopathological type, stage of the disease and including metastasis, treatment modalities were recorded.

Results: There are 137 cases were identified during the study period. All the cases are conformed histologically and statistically analyzed. No significant differences in the male and female cases were observed.

Keywords: colorectal cancer, annual incidence rate, anemia

Date of Submission: 06 -11-2017

Date of acceptance: 16-11-2017

I. Introduction

Cancer is a disease characterized by the unchecked division and survival of abnormal cells. When this type of abnormal growth occurs in the colon or rectum, it is called colorectal cancer. Colorectal cancer (CRC) is a formidable health problem worldwide. It is the third most common cancer in men (663000 cases, 10.0% of all cancer cases)^{3 4}, and the second most common in women (571000cases, 9.4% of all cancer cases)^{2 5 6}. Almost 60% of cases are encountered in developed countries. The number of CRC-related deaths is estimated to be approximately 608000 worldwide, accounting for 8%of all cancer deaths and making CRC the fourth most common cause of death due to cancer. In 2017, there will be an estimated 95,520 new cases of colon cancer and 39,910 cases of rectal cancer diagnosed in the US. While the numbers for colon cancer are fairly equal in men (47,700) and women (47,820), a larger number of men (23,720) than women (16,190) will be diagnosed with rectal cancer. An estimated 27,150 men and 23,110 women will die from CRC in 2017. The highest incidence rates are seen in Australia, New Zealand, Europe and North America, and the lowest rates in Africa and Asia.^{7 8} Overall, 60% of the cancers are from developed countries, In India the annual incidence rates (AARs) for olon cancer and rectal cancer in men and women are 4.4 and 4.1 per 100000, respectively. The AAR for colon cancer in women is 3.9 per 100000. Colon cancer ranks 8th and rectal cancer ranks 9 among men. For women, rectal cancer does not figure in the top 10 cancers, where as colon cancer ranks 9th. In Indian population it is the one of the most common cancer, and constitutes 4% of cancer deaths (Mumbai, Chennai and Karnataka cancer registry). The geographical variation is attributed to differences in diet, particularly consumption of red and processed meat, fiber, alcohol, body weight and physical activity. The incidence of sporadic cancer increase dramatically above the age of 50 years in the western population. Age standardized incidence rate is less for women than for men in almost all the countries. The likelihood of colorectal cancer diagnosis increases after the age of 40, increases progressively from age 40, rising sharply after age 50. More than 90% of colorectal cancer cases occur in people aged 50 or older. The incidence rate is more than 50 times higher in persons aged 60 to 79 years than in those younger than 40 years⁹. However, colorectal cancer appears to be increasing among younger persons¹⁰.

II. Aims And Objectives

1. To study the occurrence of colorectal cancers in Guntur.
2. To study, age and sex distribution of colorectal cancers.

III. Methods

Medical records of histologically proven colorectal cancer patients registered at hospitals of Guntur from January 2012 to December 2016, a period of 4 years were analyzed. Guntur is the medical hub to Guntur district, Krishna district, Prakasam district, Khammam district and Nalgonda districts. Information regarding age, sex, clinical presentation, anatomical site, histopathological type, stage of the disease and including metastasis, treatment modalities were recorded. Descriptive data on the type of treatment, patterns of recurrence and metastasis, survival, and the coexistence of disease were not the focus of our study. The age of the patients were categorized into three different age groups, group- 1 less than 40 years, group- 2 between 40 and 55 years and group- 3 greater than 55 years. The stratification was arbitrary to simplify the analysis. The diagnosis of colorectal cancer was performed by colonoscopy, CT abdomen and pelvis, and confirmed by biopsy of the tumor. The specimens were cut along the ante mesenteric border. The biopsies and specimens received were kept for fixation for 12-24 hours in 10% formalin. The material received was subjected to elaborate gross and microscopic study. Gross features of the tumors with respect to the length of intestines, diameter of cut margins, size, shape, site, color, consistency, extent, appearance of cut section, were recorded. To know the extent of local spread, tumor was cut to the region of deepest penetration. The distance of tumor from resected margins was recorded. A thorough search was performed for presence of lymph nodes by palpation in pericolic fat and all the lymph nodes identified were subjected for Histo pathological study.

Blocks were taken as following:

1. Three from the tumor proper.
2. One from the normal bowel adjacent to tumor.
3. Two one each from proximal cut margin and distal cut margin.
4. One section each from all the lymph nodes detected.

In case of polyps the larger polyps were blocked in such a way that head and stalk were included, while smaller polyps were embedded as a whole. Sections of 4-6 microns thickness were cut using an automated microtome and stained with Haematoxylin and eosin. Special stains and IHC were done wherever necessary. The histological features were studied under light microscopy and the tumors were classified according to WHO international classification of tumors of intestines.

IV. Results

There are 137 cases were identified during the study period FIG -1. All the cases are conformed histologically and statistically analyzed. Total no of small intestine cancers were 18, total no of large intestine cancers including rectum were 119. Below 40 years 23 cases were identified (males -13 , females -10), among 40- 55 age group 68 cases were identified (males-37 , females -31) and 46 cases were identified(males-24, females -22) in the age above 55 years FIG-2,3,4,5. No significant difference in male and female cases was observed. Higher incidence of colorectal cancer is observed in the ages of 40 and above groups. ¹¹

Fig: 1

S.NO	TYPE	TOTAL CASES
1	Total number of intestinal tumors	137
2	Total number of small intestine tumors	18
3	Total number of large intestine tumors	119

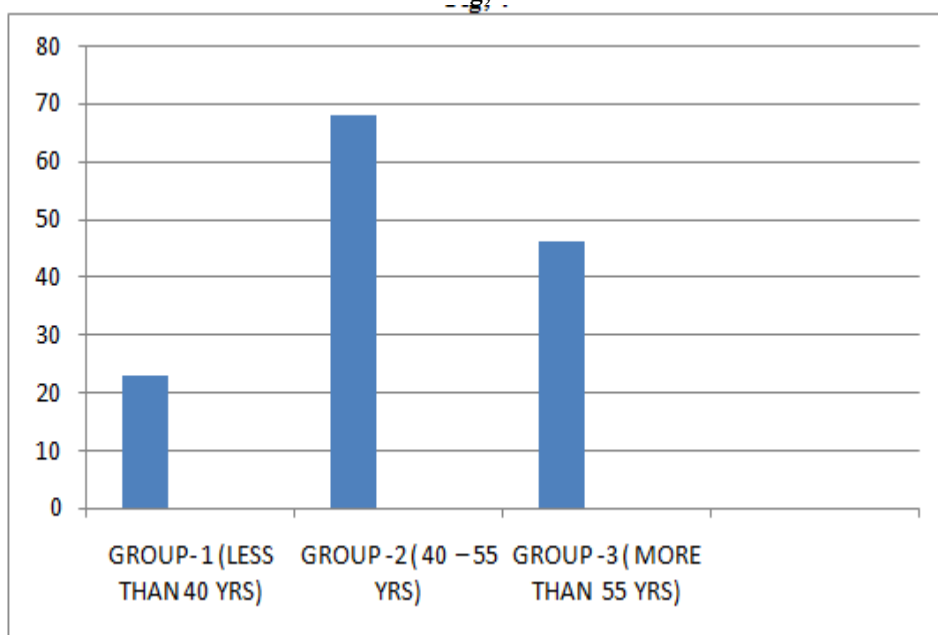
Fig: 2

S NO	NO OF CASES	PERCENTAGE
GROUP- 1 (LESS THAN 40 YRS)	23	16.78
GROUP -2 (40 – 55 YRS)	68	49.6
GROUP -3 (MORE THAN 55 YRS)	46	33.57

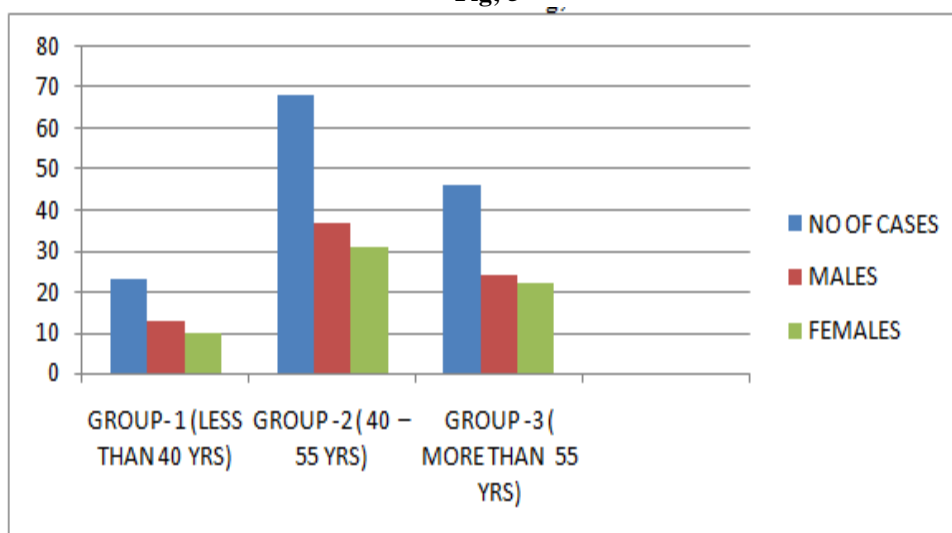
Fig: 3

S No	No Of Cases	Males	Percentage	Females	Percentage
Group- 1 (Less Than 40 Yrs)	23	13	9.48	10	7.299
Group -2 (40 – 55 Yrs)	68	37	27	31	22.62
Group -3 (More Than 55 Yrs)	46	24	17.5	22	16.05

Fig; 4



Fig; 5



V. Discussion

CRC usually begins as a noncancerous growth called a polyp, over a period of 10 to 20 years. An adenomatous polyp, or adenoma, is the most common type. Adenomas arise from glandular cells, which produce mucus to lubricate the colorectum. About one-third to one-half of all individuals will eventually develop one or more adenomas. Although all adenomas have the potential to become cancerous, fewer than 10% are estimated to progress to invasive cancer. The likelihood that an adenoma will become cancerous increases as it becomes larger. Cancer arising from the inner lining of the colorectum is called adenocarcinoma and accounts for approximately 96% of all CRCs. Early CRC often has no symptoms, which is why screening is so important. As a tumor grows, it may bleed or obstruct the intestine. In some cases, blood loss from the cancer leads to anemia causing symptoms such as weakness, excessive fatigue, and sometimes shortness of breath. CRC signs include: Bleeding from the rectum, Blood in the stool or in the toilet after having a bowel movement, Dark or black stools. Cramping or discomfort in the lower abdomen, Constipation or diarrhea that lasts for more than a few days, Decreased appetite, Unintentional weight loss. Though diagnosis is become easy, cases are identified in the late stages due to asymptomatic nature of the CRCs. The researchers concluded that tumors of the colon and rectum can be grouped together. The study identified a set of 24 genes mutated in a significant number of cases. In addition to genes found through prior research (e.g. APC, ARIDIA, TP53, KRAS, and PIK3CA), the researchers identified new genes such as SOX9, FAM123B/WTX, ERBB2, and IGF2¹². These genes were

involved in regulating cell proliferation and can therefore serve as potential therapeutic drug targets. In this study it is observed that small intestine tumors are significantly (18) lower than large intestine tumors (119).there was no statistically significant differences in male and female ratio. In our study group-1 Below 40 years 23 cases were identified (males -13 , females -10),group-2 among 40- 55 age group 68 cases were identified (males-37 , females -31) and group-3 above 55 years 46 cases were identified(males-24, females -22) in the age above 55 years. Higher incidence of colorectal cancers in the ages 40 and above observed may be due to CRC s are asymptomatic for about 10 to 20 years¹³ Two types of risk factors modifiable and non modifiable observed in the CRC. Modifiable are alcohol consumption¹⁴, smoking ¹⁵ , obesity, consumption of meat ^{16 17 18}. Non modifiable are hereditary.

VI. Conclusion

Colorectal cancers are increasing in Indians because of westernization of habits. To decrease the incidence in CRC s 1) thorough screening of younger generation is advised 2) cigarette smoking and alcohol consumption to be avoided, 3) awareness campaigns should be arranged. 4) physical activity and 5) modification in dietary habits are advised.

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*Dr.K.Nageswararao. "Age And Sex Variation in Occurrence of Colorectal Cancer in Guntur."
IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) 16.11 (2017): 48-51