

RETROSPECTIVE STUDY OF DISTRIBUTION OF COLORECTAL CANCERS IN NORTH COASTAL ANDHRA PRADESH

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ABSTRACT

BACKGROUND

Colorectal cancers are the third most common cancers in India. Indian data on epidemiological factors and site of distribution of colorectal cancers is very limited. Colorectal cancer is the fourth most common newly diagnosed cancer after ca prostate, ca breast, and ca lung. Age standardized incidence rate of colorectal cancer in developed countries is between 25 to 30 per 100,000 population.

In India it is 3 to 4 per 100,000 population. High ratios of colon to rectal cancer ($\geq 2:1$) prevail in high-risk areas such as North America. Ratios below 1 are often found in low-risk Asian and African populations. Temporal trends in western studies showed increase in proximal colon malignancies and decrease in distal colon and rectal malignancies. Western studies showed increase in rectal cancer in individuals less than 50 yrs. probably attributable to dietary changes. Screening Guidelines- Faecal occult blood test every 3 yrs, Sigmoidoscopy every 5 yrs., Colonoscopy every 10 yrs.

MATERIALS AND METHODS

This is a retrospective study of all diagnostic colonoscopies of patients aged 18 and above who presented to Department of Gastroenterology, KGH between 2007 and 2014. Data is drawn to age, sex and site of cancer and analysed.

RESULTS

1045 oncoscopies were done. 129 cases were diagnosed as colorectal malignancies and confirmed by biopsy. 52 cases were seen in rectum. 42 cases were seen in ascending colon. 10 malignancies in transverse colon, 12 in descending colon, 13 in sigmoid colon, 65 cases approximating 50% were seen in rectum and sigmoid colon.

CONCLUSION

Colorectal malignancies are not as frequent in India as in western world. Observational studies show increasing incidence of colorectal malignancies probably related to increased fatty diet and decreased fibre diet. Carcinoma rectum is more common than ascending colon cancers in India which is also found in studies done in other geographical regions. This could be attributed to genetics, environmental factors and dietary habits. Routine colonoscopy as a screening method for colorectal cancers need not be enforced in our geographical area. This observation needs to be confirmed by further studies.

KEYWORDS

Carcinoma Rectum, Carcinoma Colon, Colonoscopy Screening, Sigmoidoscopy Screening.

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BACKGROUND

Colorectal cancers are the seventh most common cancer in India.¹ Various Genetic and Environmental factors influence the site of Colorectal Cancer. Indian data on Epidemiological

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factors and site of distribution of colorectal cancers is very limited. CRC is the second most commonly diagnosed cancer in women and third most common in men.² Age standardized Incidence rate of Colorectal cancer in developed countries is between 25 to 30 per 100,000 population. In India it is 3 to 4 per 100,000 population. High ratios of colon to rectal cancer ($\geq 2:1$) prevail in high-risk areas such as North America.³ Ratios below 1 are often found in low-risk Asian and African populations. Temporal trends in western studies showed increase in proximal colon malignancies and decrease in distal colon and rectal malignancies.

Western studies showed increase in rectal cancer in individuals less than 50 yrs. probably attributable to dietary changes. Screening Guidelines⁴- Faecal Occult Blood Test

every 3 yrs., Sigmoidoscopy every 5 yrs., Colonoscopy every 10 yrs.

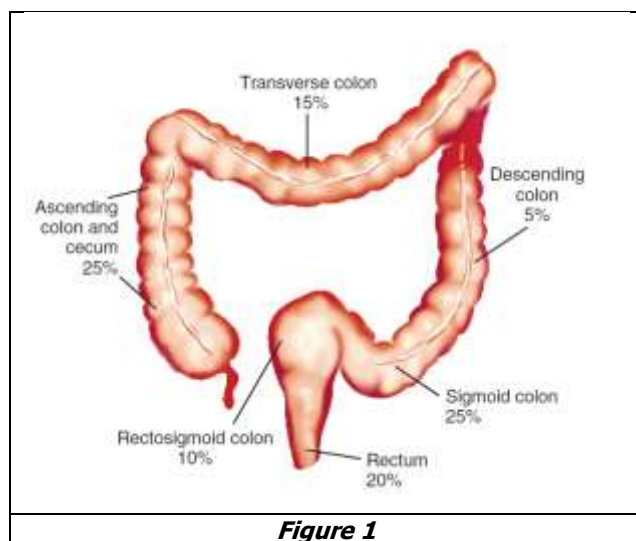


Figure 1

Incidence of CRC in men and women under the age of 50 has been steadily increasing at a rate of 2.1 percent per year from 1992 through 2012.⁵ CRC is diagnosed after the onset of symptoms, or through screening colonoscopy or faecal occult blood testing in the majority of patients. Screening has been shown to detect asymptomatic early-stage malignancy and improve mortality.

Most CRCs (70 to 90 percent in two contemporary series)^{6,7} are diagnosed after the onset of symptoms. Symptoms of CRC are typically due to growth of the tumour into the lumen or adjacent structures, and as a result, symptomatic presentation usually reflects relatively advanced CRC.

Typical symptoms/signs associated with CRC include haematochezia or melena, abdominal pain, otherwise unexplained iron deficiency anaemia, and/or a change in bowel habits.^{8,9,10} Less common presenting symptoms include abdominal distention, and/or nausea and vomiting, which may be indicators of obstruction.

Change in bowel habits was most common symptom followed by rectal bleeding.¹¹ Patients who are symptomatic at diagnosis typically have more advanced disease and a worse prognosis.¹² Tumours presenting with rectal bleeding (more commonly those involving the distal colon and rectum and at an earlier stage than proximal tumours) have a better prognosis.¹³ Once a CRC is suspected, the next test can be a colonoscopy, barium enema, or computed tomography colonography. However, examination of tissue is required to establish the diagnosis; this is usually accomplished by colonoscopy. Histopathologically, the majority of cancers arising in the colon and rectum are adenocarcinomas. Colonoscopy is the most accurate and versatile diagnostic test for CRC, since it can localize and biopsy lesions throughout the large bowel, detect synchronous neoplasms, and remove polyps. When viewed through the endoscope, the vast majority of colon and rectal cancers are endoluminal masses that arise from the mucosa and protrude into the lumen. The masses may be exophytic or polypoid. Bleeding

(oozing or frank bleeding) may be seen with lesions that are friable, necrotic, or ulcerated. Circumferential or near-circumferential involvement of the bowel wall correlates with the so-called "apple-core" description seen on radiologic imaging. A minority of neoplastic lesions in the gastrointestinal tract (both in asymptomatic and symptomatic individuals) are nonpolypoid and relatively flat or depressed. In one study, nonpolypoid colorectal neoplasms had a greater association with carcinoma than did polypoid neoplasms.¹⁴ colonoscopy has superior sensitivity in this situation than does barium enema or computed tomography (CT) colonography. For endoscopically visible lesions, methods for tissue sampling include biopsies, brushings, and polypectomy. For lesions that are completely removed endoscopically (with polypectomy, endoscopic mucosal resection, or endoscopic submucosal dissection), tattooing is important for subsequent localization if an invasive neoplasm is found, and additional local therapy is needed. If a malignant obstruction precludes a full colonoscopy preoperatively, the entire residual colon should be examined soon after resection. Nevertheless, screening for CRC using a flexible sigmoid scope is one of the few modalities that have been proven through randomized controlled trials to reduce CRC mortality and incidence.¹⁵ Flexible sigmoidoscopy is generally not considered to be an adequate diagnostic study for a patient suspected of having a CRC, unless a palpable mass is felt in the rectum. In such cases, a full colonoscopy will still be needed to evaluate the remainder of the colon for synchronous polyps and cancers. Non-completion rates for diagnostic colonoscopy in symptomatic patients are approximately 11 to 12 percent.¹⁶⁻¹⁷ Reasons for incompleteness include the inability of the colonoscope to reach the tumour or to visualize the mucosa proximal to the tumour for technical reasons (e.g. partially or completely obstructing cancer, tortuous colon, poor preparation) and patient intolerance of the examination. In this setting, CT colonography is useful for the detection of CRC and can provide a radiographic diagnosis, although it can overcall stool as masses in poorly distended or poorly prepared colons; it also lacks the capability for biopsy or removal of polyps.¹⁸⁻¹⁹

CT colonography (also called virtual colonoscopy or CT colography) provides a computer-simulated endoluminal perspective of the air-filled distended colon. The technique uses conventional spiral or helical CT scan or magnetic resonance images acquired as an uninterrupted volume of data, and employs sophisticated postprocessing software to generate images that allow the operator to fly-through and navigate a cleansed colon in any chosen direction. CT colonography requires a mechanical bowel prep that is similar to that needed for barium enema, since stool can simulate polyps.

The diagnostic performance of CT colonography was directly compared with colonoscopy in the SIGGAR trial in which 1610 patients with symptoms suggestive of CRC were randomly assigned to colonoscopy (n = 1072) or CT colonography (n = 538).¹⁵ The primary endpoint was the

rate of additional colonic investigation after the primary procedure for detection of CRC or large (>10 mm) polyps. Detection rates for CRC and large polyps were 11 percent for both procedures. CT colonography missed 1 of 29 CRCs and colonoscopy missed none of 55. Colonoscopy is a better initial diagnostic test than CT Colonography. However CT colonography is indicated in patients with incomplete colonoscopy.

Aim of Study

- To Determine whether screening methods and guidelines in western countries apply to our circumstances.
- To Know the present trend in distribution of Colorectal Malignancies.

MATERIALS AND METHODS

A Retrospective study on all diagnostic colonoscopies of patients aged 18 and above presented to Department of Gastroenterology, KGH between 2007 and 2014.

Patients presented with Bleeding per rectum, Chronic constipation and Diarrhoea, Tenesmus, Abdominal pain, Carcinoma of unknown primary, Iron deficiency anaemia, Family history of colon malignancy were advised Colonoscopy

Colonoscopy was done with Olympus usually under local anaesthesia

Patients were advised to have a liquid only diet, the day before the procedure. Patient is advised to drink Poly ethylene glycol mixed in water or a drink the night before the procedure. Patients are advised not to eat or drink before 2hrs of procedure.

Colonoscope is passed from the anus and is passed forward along the rectum and colon. Walls are visualised. Caecum and distal ileum are also visualised unless the scope can't be passed.

Data is entered in a register in every patient with colonoscopy.

Data is drawn to age, sex, Symptoms, Diagnosis, Biopsy findings in excel format and is analysed.

Inclusion Criteria

- Age 20 and above.
- Symptomatic patients with indication for colonoscopy.

Exclusion Criteria

- Age <20.
- Incomplete Colonoscopy.
- Therapeutic Colonoscopy.
- Colonoscopy post colostomies.

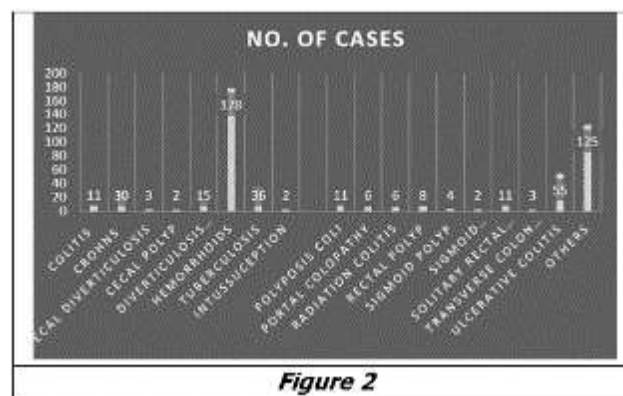
RESULTS

1045 colonoscopies were done.

537 cases had normal colonoscopic findings.

Colonoscopic Diagnosis	No. of cases
Colitis	11
Crohn's	30
Cecil Diverticulosis	3
Cecal Polyp	2
Diverticulosis Colon	15
Haemorrhoids	178
Tuberculosis	36
Intussusception	2
Normal Study	537
Polyposis Coli	11
Portal Colopathy	6
Radiation Colitis	6
Rectal Polyp	8
Sigmoid Polyp	4
Sigmoid Diverticulosis	2
Solitary Rectal Ulcer	11
Transverse Colon Polyps	3
Ulcerative Colitis	55
Others	125

Table 1



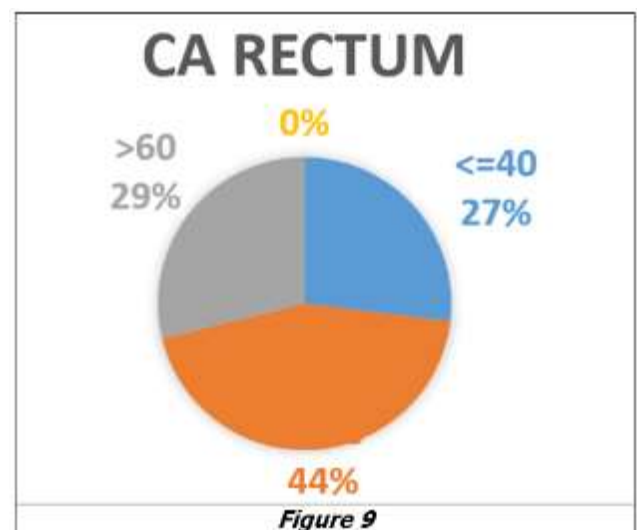
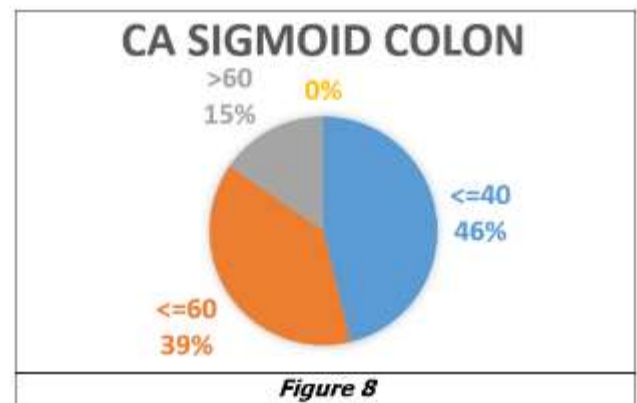
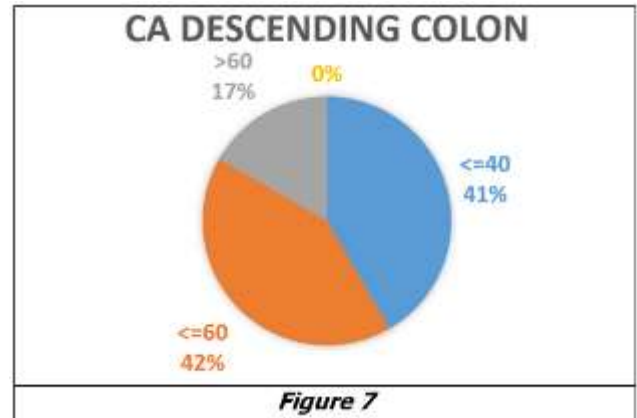
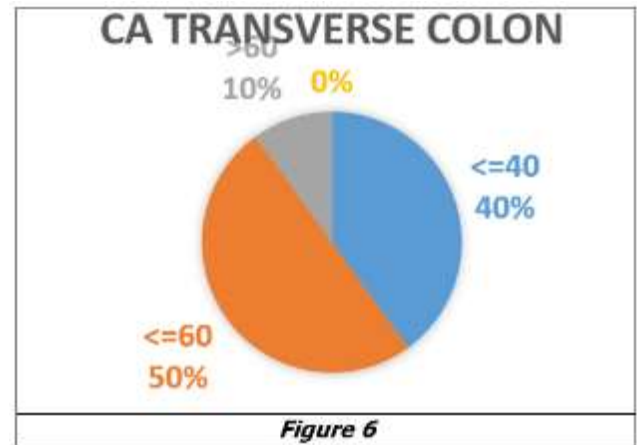
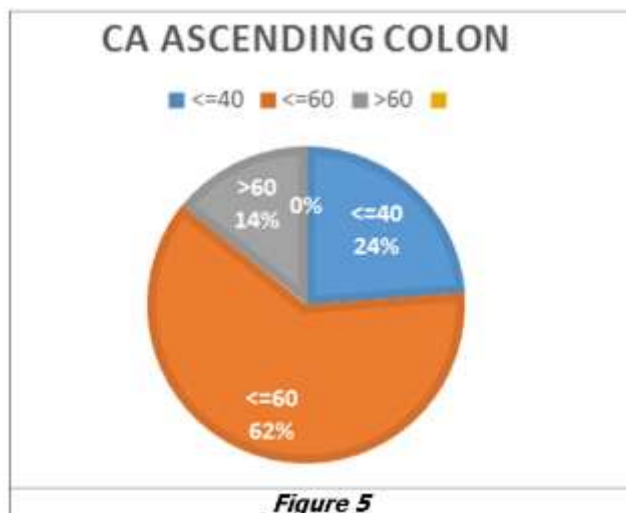
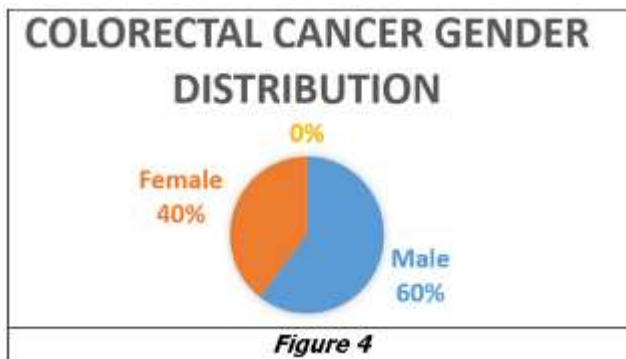
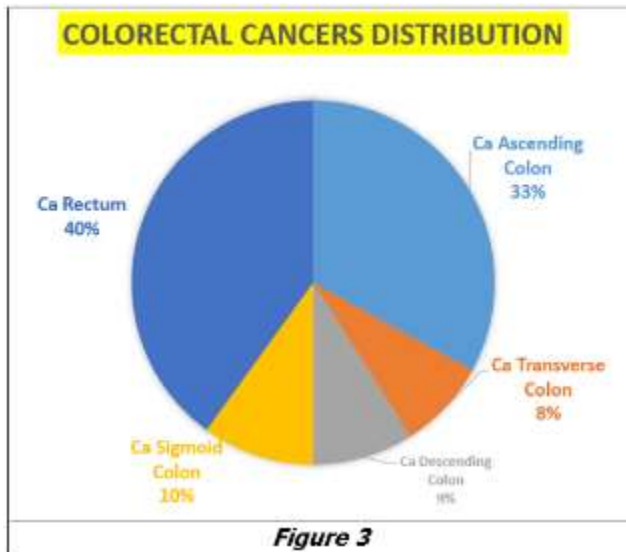
129 cases were diagnosed as colorectal malignancies and confirmed by biopsy. 52 cases were seen in Rectum.42 cases were seen in Ascending Colon.10 malignancies in transverse colon, 12 in Descending colon, and 13 in sigmoid colon. 65 cases approximating 50% were seen in rectum and sigmoid colon. Apart from malignancies we can infer that Ulcerative colitis is more common than Crohn's disease in the present study. Ulcerative colitis is seen in 55 cases, Crohn's disease is seen in 30 cases and 11 cases had nonspecific colitis. Tuberculosis is seen in 36 cases which is a close differential for IBD.

Mean Age of Diagnosis

- Ca Ascending colon is 49.3
- Ca Descending colon is 46
- Ca Rectum is 51
- Ca Sigmoid colon is 43
- Ca transverse Colon is 45.5

Site	No. of Cases	%
Ca Ascending Colon	42	33
Ca Transverse Colon	10	8
Ca Descending Colon	12	9
Ca Sigmoid Colon	13	10
Ca Rectum	52	40

Table 2



DISCUSSION

Colorectal Malignancies are not as frequent in India as in western world. Observational studies show increasing incidence of colorectal malignancies probably related to increased fatty diet and decreased fibre diet. Carcinoma

Rectum is more common than ascending colon Cancers in India which is also found in studies done in other geographical regions. This could be attributed to genetics, Environmental factors and Dietary habits.

	Yousuf Bafandeh et al¹⁷	Qin Zhou et al.¹⁸	Rosato FE et al¹⁹	My Study
Ca Ascending Colon	14.7	11.62	25%	33%
Ca Transverse Colon	3.5%	7.22	15%	8%
Ca Descending Colon	9.1%	4.90	5%	9%
Ca Sigmoid Colon	30%	20.91	25%	10%
Ca Rectum	42.6%	41.75	20%	40%

Table 3

Most of the cases are diagnosed in the middle age (40-60). With Growing Incidence of Colorectal Malignancies we need to design screening guidelines for our region.

CONCLUSION

As Most of the CRC are in Rectum, Screening with Sigmoidoscopy might be required in our country. This needs further supportive evidence. Next most common site being ascending colon, Screening with Faecal occult blood test or Colonoscopy might be required. With the Current data Screening is ideal to start in the middle age. Frequency of screening must be determined by further studies. Further studies are required to determine the cause for varied distribution.

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