

Colorectal Adenocarcinomas 2015

Retrospective Study at Truman Medical Center

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Introduction:

Colorectal cancer is the 4th most common cancer diagnosed in the US and 2nd most common cause of cancer death. It includes cancer originating the entire colon and the rectum. We reviewed all cases of colon and rectal cancers diagnosed and treated in 2012 at Truman Medical Center. We obtained the list of the patient and diagnosis from tumor registry database and then extracted the data from electronic medical records (CERNER). The goal of the study was to evaluate whether the patients were treated according to National Cancer Network (NCCN) Guidelines.

Study:-

A list of patients and site of their colorectal cancer were obtained from tumor registry database. We then conducted a retrospective chart review to abstract the pertaining data of the colorectal cancer as below:-

- Staging of disease
- If localized, whether patient received surgical resection
- Adequate number of LNs dissected
- KRAS testing and MSI/MMR testing if indicated
- Chest imaging at diagnosis
- Adjuvant chemotherapy and type
- CT scan and colonoscopy within 1 year of diagnosis
- CEA at presentation and during surveillance
- 3 year overall survival at the time of data collection Nov 2015

We then evaluated if all recommended treatment, surgery and surveillance was in accordance with NCCN guidelines. We also compared overall survival of disease compared with the national average with regards to the stage of the disease.

Data:-

Total of 19 patients were diagnosed with colorectal cancers in 2012. The gender distribution and site of colon cancer is depicted in Fig 1 and 2. Staging prior to initial surgical resection and final surgical staging is shown in Fig 3 and Fig 4. Among 19 patients, around 7 patients 37% had Stage IV disease and around 3 patients 16% had Stage III disease and rest of the patients had Stage 0 to II disease.

Outcomes:-

Out of 13 patients with presumed localized disease 10 underwent primary surgical resection. The 3 who did not, one did not follow up after recommendation for surgery and 2 did had intramucosal carcinoma and was excised by colonoscopy. 2 patients with metastatic colon cancer at the outset did undergo surgical resection at some point, both had liver metastases. Among the 12 patients that had surgical

resection, 4 had less than 12 LNs dissected but one of them was intramucosal carcinoma, one had no residual carcinoma and one was a Tis tumor.

Site of colon cancer	
Sigmoid colon	14
Hepatic flexure	1
Ascending colon	2
Transverse colon	1
Rectosigmoid region/Transverse colon	1

There were 6 patients with LN positive surgical specimen and all of them were recommended and received chemotherapy except for one who refused chemotherapy. 3 of them was Stage III disease, one of whom did not follow up for chemotherapy. Modified Folfox was the most widely used chemotherapy which is the standard of care per NCCN. One patient had rectal cancer and received neoadjuvant therapy prior to resection as per NCCN guidelines.

4 patients with Stage 0-II disease got MMR/MSI testing done all less than 70 years at diagnosis and all were MSI stable. 2 patients with Stage IIA disease with pT3 disease, MSI stability and high risk disease was offered adjuvant chemotherapy and 1 received chemotherapy.

KRAS testing was done in 12 out of 19 patients. Of the 7 patients where KRAS testing was not done, 3 were Stage 0-I disease, 2 had no surgical specimen, 1 was Stage IIA disease and only 1 was Stage IV disease. So only one indicated KRAS testing was not done (>90 percent compliance 12 out of 13).

CEA testing was done for 47% of patients at diagnosis which can be improved (Fig 6). CEA testing during surveillance was better with 70% of the patient who were indicated got it at 3-6 monthly intervals (Fig 7).

Chest imaging was done for 15 out of 19 patients around 79%. However, only 11 out of 15 got CT chest and 4 got chest X-ray (Fig 5)

Follow up CT scan within the first 12 months were done in 12 out of the 16 patients that needed it around 75% (Fig 9). Follow up colonoscopy within the first 12 months was completed on 6 out of 10 (60%) pf patients (Fig 10)

3 year overall survival was around 90% for Stage 0-II colon cancer disease, Stage III disease the vital status of one patient was unknown 3 year OS is between 33.33 to 66.66% and Stage IV disease is around 30% (Fig 10).

Conclusion:-

All recommended treatment was in accordance to NCCN guidelines.

Improvements

- Increase percentage of Chest CT on newly diagnosed colon cancer (Category 2A NCCN recommendation)
- Increase the percentage colonoscopy within 12 months of follow up and CEA at clinic visit during surveillance
- MMR/MSI testing now has to be considered in almost all patients less than 70 years of age and especially in the Stage II-III disease who are borderline for chemotherapy
- KRAS testing in all Stage IV patient, only one patient with Stage IV disease did not have KRAS testing in 2012

Barriers

- Patient do not follow up as recommended and often did not get recommended labs.
- Better transition between inpatient and outpatient setting
- High risk disease lost to follow up without any adjuvant chemotherapy
- Patient education on screening colonoscopy and diagnosis of colon cancer as a high percentage of our colon cancer were Stage IV cancer

3 year overall survival for both early stage and metastatic colon cancer are above the median national survival.

Recommended Interventions:-

- CEA testing done in the clinic in the same day of visit for surveillance
- CT chest to be done after initial diagnosis of colon cancer and first oncology visit if not done
- Education to providers about referring patient for colonoscopy at 50 years or earlier if family history
- Education about symptoms of colon cancer and follow up with provider
- Coordinating with pathology for MMR/MSI testing for all patients <70 yrs old and KRAS testing at least on all Stage IV disease and Stage III with high risk of recurrence.

Fig 1: Gender

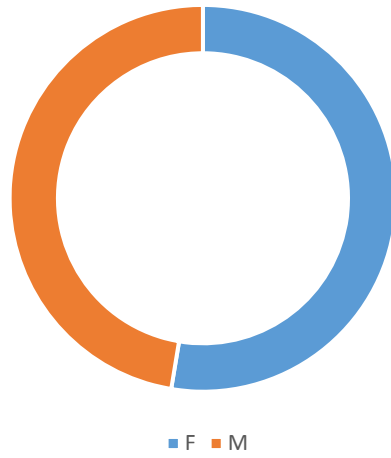


Fig 2: Site of colon cancer

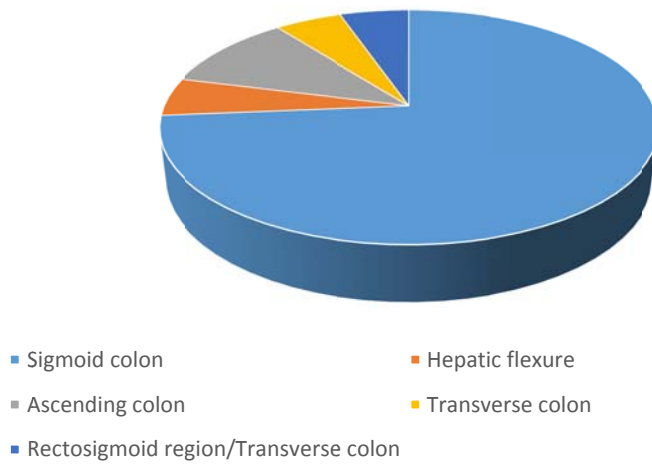


Fig 3 : Staging prior to initial therapy

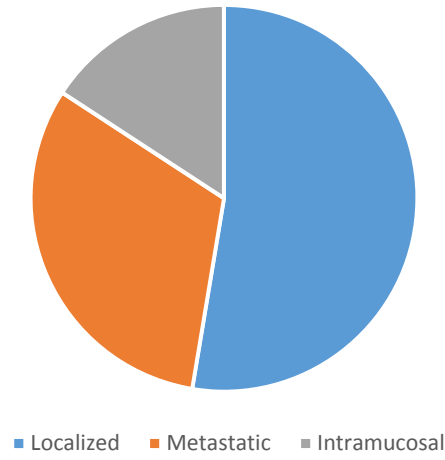
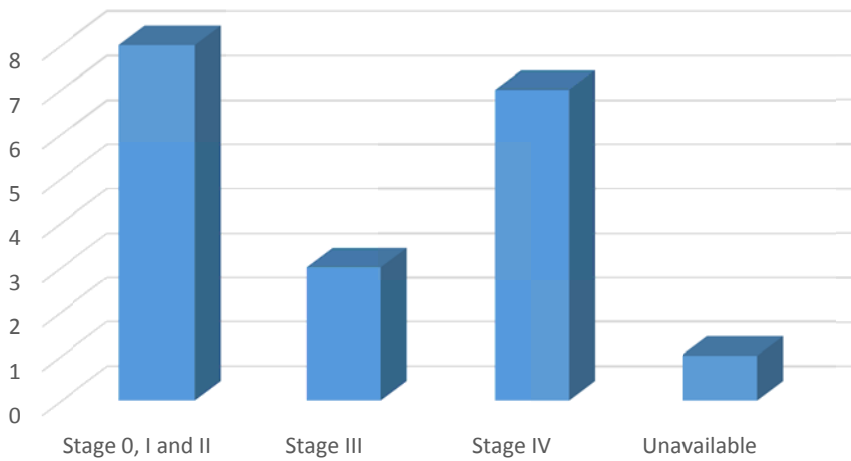
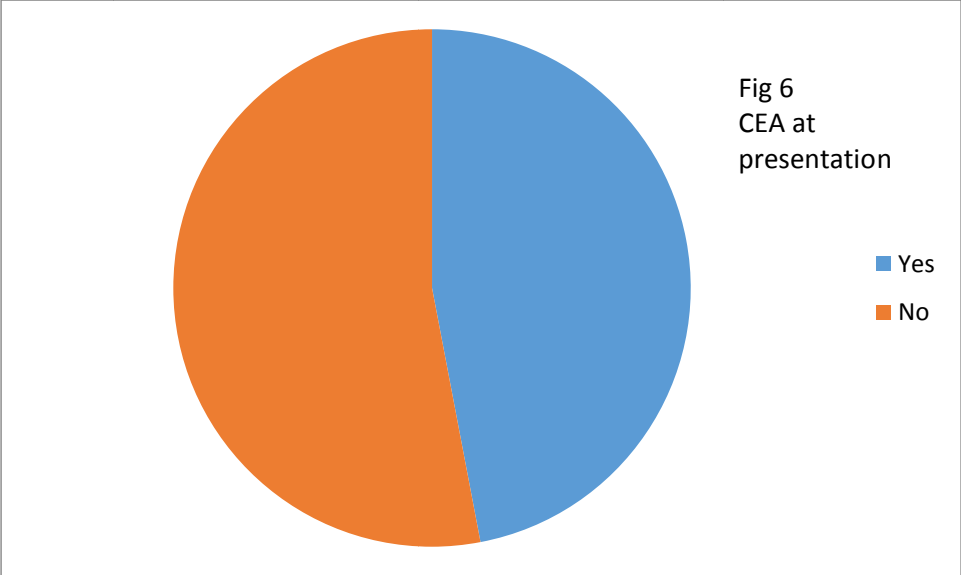
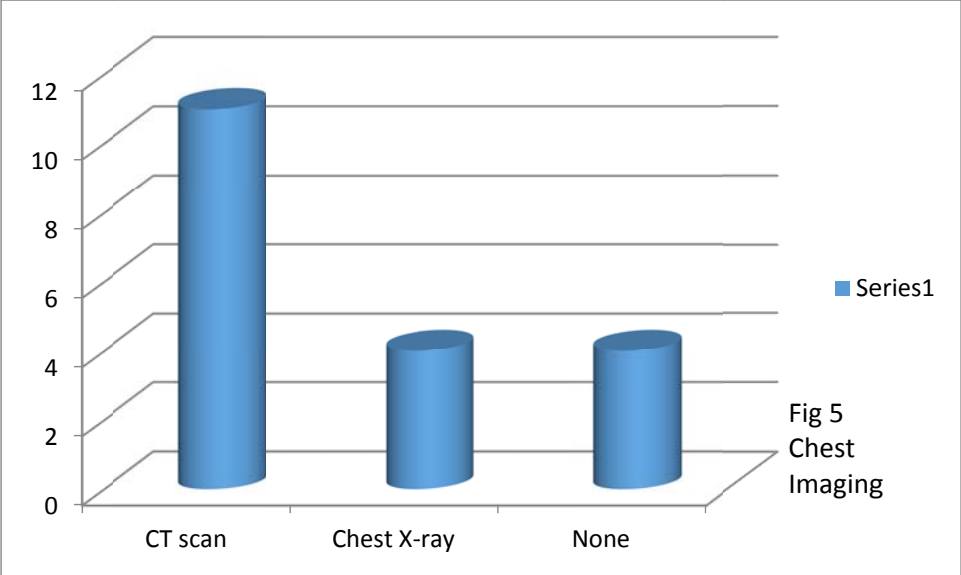


Fig 4 : Surgical staging





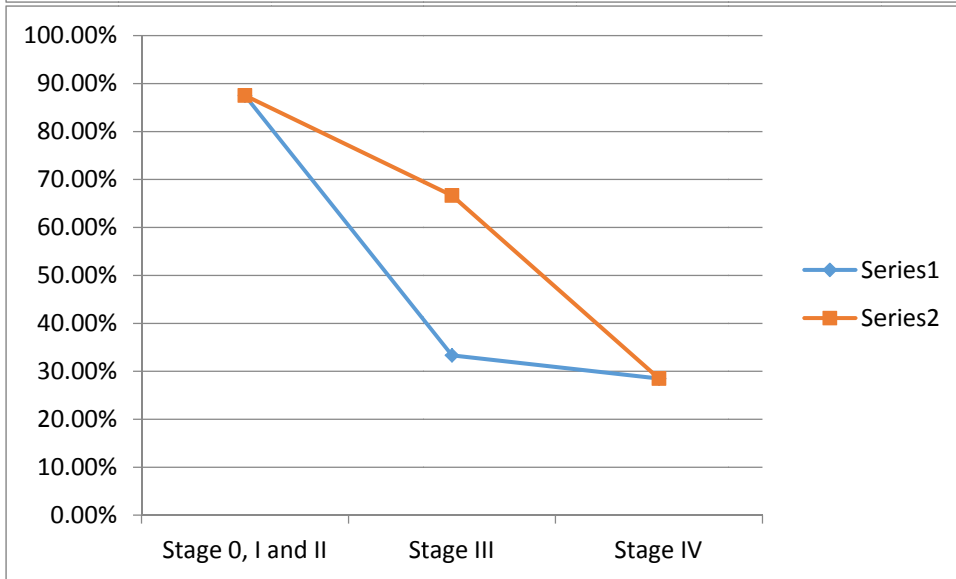
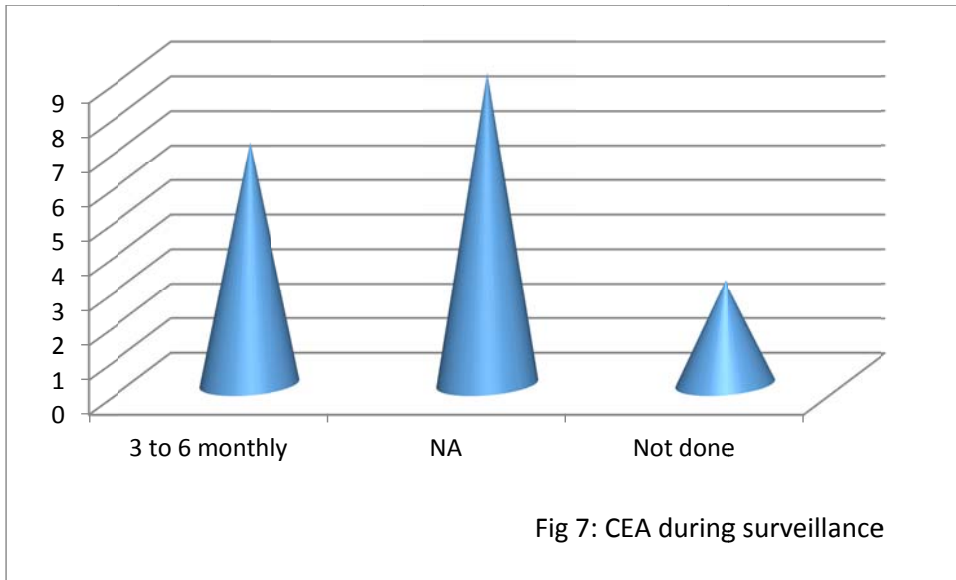


Figure 8: 3 year overall survival

