ORIGINAL RESEARCH

Clinical profile of patients with colorectal cancer attending tertiary care hospital

[1]Dr. Shrishail Hanagandi, [2]Dr. Shashikala, [3]Dr. Rohit Dama

[1]Assistant Professor (Surgical Gastroenterologist), Department of General Surgery, BIMS, Belgavi, Karnataka, India
[2]HOD, Department of Biochemistry, Asian Institute Gastroenterology, Hyderabad, India
[3]Consultant, Surgical Gastroenterologist, Asian Institute Gastroenterology, Hyderabad, India

Corresponding Author
Dr. Shrishail Hanagandi
Assistant Professor (Surgical Gastroenterologist), Department of General Surgery, BIMS, Belgavi, Karnataka, India

Received: 02 Dec, 2023 Accepted: 25 Dec, 2023

Abstract
Many studies on Indian colorectal cancer patients have shown different type genetic Alterations compared to west and other parts of world. Blood samples were collected from 30 colorectal cancer patients admitted at department of surgical gastroenterology. One sample from each collected during preoperative period another sample on post-operative day 7.All the blood samples were collected in EDTA coated blood collection tubes. Stage wise distribution of our patients showed that 56.6% of our patients are of stage 3 followed by stage II, stage I, and stage IV respectively. In our study 93.3% patients underwent curative surgery remaining 6.7% patients underwent non curative resection. Among two patients of non-curative one had unresectable metastatic disease underwent diversion stoma another had locally advanced disease with obstruction though underwent resection, margin was positive.

Keywords: Colorectal Cancer, Clinical Profile, Stage of cancer

Introduction

Adenoma-carcinoma sequence initiated by mutations in Adenomatous polyposiscoli (APC) and beta-catenin (CTNNB1) genes, dysregulatedWnt pathway accounts formajority of colorectal cancer (CRC) in West.In Indian study by V,Sharanya*et al*[1] shown that Lesser prevalence of polyps in Indian patients(5.1%) suggestsdifferent mutational landscape and alternate pathways in Indian CRC. The prevalence of mutations in APC, CTNNB1, kRASand BRAF genes were 16.6, 14.28, 15.05 and 1.07%.Only 18.18% showed down regulation of APC, up-regulation of CTNNB1 and c-Mycgenestypical of canonical Wnt signaling and 34.27% of the tumors showed dysregulation in any two of APC, CTNNB1 and c-Myc. Interestingly, 47.61% of tumors showed up-regulation ofc-Mycwithout dysregulation of APC and CTNNB1 genes. Junction plakoglobin (JUP), a gene that is dysregulated in our study is known to directly up-regulate c-myc independent of canonical Wnt signaling.

Many studies on Indian colorectal cancer patients have shown different type genetic Alterations compared to west and other parts of world. Study by.NirajKumari*et al*[2] in their study shown KRAS mutation in 18.5% patients.Smitha*et al*[3] in her study shown KRAS mutation frequency of 18.75%. Sameer *et al*[4] in his study found that low frequency of b-catenin mutations in CRC patients from khasmiri valley.

H A patil[5]*et al* in his study shown that the KRAS tumour mutation rate was 23% NRAS mutations were observed in 2% and 5% of cases had PIK3CA mutations.

Jauhri*et al* [6] reported that KRAS mutated in 35.7%, BRAF mutations in 7.14%, NRAS in 6.25% CRC tumors, and a mutant form of TP53 was persistent in 39.3% CRC patients.

Methodology

Inclusion criteria

- Patients diagnosed with colon or rectum cancer attending department of surgical gastroenterology were included.
- Patients more than 12 years less than 75 years were included.

Exclusion criteria

- Patients having any other synchronous malignancy.
- Patients less than 12 years and more than 75 years old.

Study design: prospective case control study

Sample size:30 cases

Sample collection
Blood samples were collected from 30 colorectal cancer patients admitted at department of surgical gastroenterology. One sample from each collected during preoperative period another sample on post-operative day 7.All the blood samples were collected in EDTA coated blood collection tubes.

Blood samples were also collected from 10 matched healthy controls who are staff of institute of gastroenterology. They were centrifuged at 1500 rpm for 15 min. for plasma separation. Plasma was stored at -80°C for long time preservation.

Results
In our study age of patients ranged from 19 years to 71 years, median age was 53 years.

Table 1: profile of patients by Age

Profile of patients		n=30
Age (years)	Range	20-71
	Median age	53
	Inter quartile range	40-63

Profile of patients according to sex distribution showed 66.7% were males and 33.3% were females.

Table 2: Distribution of patients by Gender

Sex	no	%
Male	20	66.7
Female	10	33.3
Total	30	100

70% patients had left sided tumors 16.3%right and 6.6% transevese colon tumours.

Table 3: Distribution of patients by location of tumour

Location of tumour	No patients	Percentage
Right side	7	16.3%
Transeverse colon	2	6.6%
Left side	21	70%

Stage wise distribution of our patients showed that 56.6% of our patients are of stage 3 followed by stage II, stage I, and stage IV respectively.

Table 4: Distribution of patients by stage of cancer

Stage	No patients	%
I	4	13.3
II	8	26.6
III	17	56.6
IV	1	3.3
Total	30	100

In our study 93.3% patients underwent curative surgery remaining 6.7% patients underwent non curative resection. Among two patients of non-curative one had unresectable metastatic disease underwent diversion stoma another had locally advanced disease with obstruction though underwent resection, margin was positive.

Table 5: Distribution of patients by type of surgery

Surgery type	No	%
curative	28	93.3
non-curative	2	6.7
Total	30	100

Discussion
This prospective case control study was conducted at Asian institute of gastroenterology from April 2017 to March 2018.our studycomprised of 30 patients, age distribution of patient ranged from 19 to 71 years.40% patients were between 40 to 60 years with mean age of 53 years. It is consistent Indian studies by MusthafaChalikandyPeedikayil*et al*[7] and Gupta S *et al*.[8]

In our study 66.6%patients were males, and 33.3% were females. There was male preponderance in study group. It is consistent Indian studies by

MusthafaChalikandyPeedikayil*et al*[7] and Gupta S *et al*.[8]

In present study most patients are of advanced stage 59.9% stage III and stage IV, this observation consistent with other Indian study by Gupta S *et al*[8.]

In our study 70% had left sided tumours, 16.3% right and 6.6% transeverse colon tumours this observation consistent with study Ye *et al.*[7]

Studies from various parts of world have shown different pattern of expression of miRNAs in colorectal cancer patients, to best of our knowledge there are no studies from India about Circulating miRNA-1290 in colorectal cancer patients. In our study based on study by H.Imoaka*et al*[9]we wanted to validate expression miRNA-1290 in Indian patients and to examine whether miRNA-1290 can be used as biomarker forIndian colorectal cancer patients.[10]

Conclusion

- 70% patients had left sided tumors 16.3%right and 6.6% transevese colon tumours.
- In our study 93.3% patients underwent curative surgery remaining 6.7% patients underwent non curative resection. Among two patients of non-curative one had unresectable metastatic disease underwent diversion stoma another had locally advanced disease with obstruction though underwent resection, margin was positive.

References

1. V,Sharanya UASteffieSandhyaSinghG.V.RaoPradeepRebalaSundeepLakhtakiaNageshwarD.ReddyMitnalaSasikala VV RaviKanth Fewer Beta-catenin and APCMutations Coupled With c-Myc Up-Regulation Independent of WNT Activation Associate With Lesser Prevalence of Polyps and Alternate Pathways in Indian Colorectal Cancer,GastroenterologyVolume 150, Issue 4, Supplement 1, April 2016, Page S367.
2. NirajKumari, NarendraKrishnani, Balraj Mittal, Ashok Gupta; KRAS Mutation in Colorectal Cancer and its Histological Correlation in Indian Population, American Journal of Clinical Pathology, Volume 140, Issue suppl_1, 1 September 2013.
3. Smitha, C.S., Suresh, B.M.C., Linu, J.A. *et al*. Indian J SurgOncol (2017) 8: 511.
4. Sameer AS, Shah ZA, Abdullah S, Chowdri NA, Siddiqi MA. Analysis of molecular aberrations of Wnt pathway gladiators in colorectal cancer in the Kashmiri population. Human Genomics. 2011;5(5):441-452. doi:10.1186/1479-7364-5-5-441.
5. H.A. Patil, C. Barrow, R.K. Kanwar, J.R. Kanwar, A. Kapat; 168P Clinicopathological correlation with mutation profiling of colorectal cancer for KRAS, BRAF, NRAS and PIK3CA genes in Indian patient cohort, Annals of Oncology, Volume 26, Issue suppl_9, 1 December 2015, Pages ix51.
6. MayankJauhri, AkankshaBhatnagar, Satish Gupta, Manasa BP, SachinMinhas, YogenderShokeen, and ShyamAggarwal Prevalence and coexistence of KRAS, BRAF, PIK3CA, NRAS, TP53, and APC mutations in Indian colorectal cancer patients: Next-generation sequencing–based cohort study Tumor Biology (2017).
7. MusthafaChalikandyPeedikayil ·Prem Nair · S. M. Seena · Lakshmi Radhakrishnan Shine Sadasivan · V. A. Naryanan · V. BalakrishnanColorectal cancer distribution in 220 Indian patients undergoing colonoscopy Indian J Gastroenterol 2009(November–December):28(6):212–215.
8. Gupta S1, Bhattacharya D, Acharya AN, Majumdar S, Ranjan P, Das S. Colorectal carcinoma in young adults: a retrospective study on Indian patients: 2000-2008.Colorectal Dis. 2010 Oct;12.
9. H. Imaoka,Y. *et al* Circulating microRNA-1290 as a novel diagnostic and prognostic biomarker in human colorectal cancer Ann Oncol (2016) 27 (10): 1879-1886.
10. van Kouwenhove M, Kedde M, Agami R, MicroRNA regulation by RNA-binding proteins and its implications for cancer.Nat Rev Cancer 2011; 11: 644–656.