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Original Research Paper

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IDENTIFICATION OF RISK FACTORS AND RISK STATUS OF COLORECTAL CANCER AMONG PATIENTS WITH GI PROBLEM ATTENDING GASTROENTEROLOGY OPD IN SELECTED HOSPITALS IN KOLKATA.

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ABSTRACT One of the leading causes of deaths from cancer is colorectal cancer. 60% of the deaths can be prevented with regular screening, hence, it is the most preventable cancer in the world but least prevented. So a descriptive survey study was undertaken with the objective of identifying the risk factors and risk status of colorectal cancer among patients with GI problem and finding out the association between risk status and selected demographic variables. One hundred twenty four patients were selected by purposive sampling technique from the men and women patients who were attending Gastroenterology OPD of B.R.Singh Hospital, Eastern Rly, Sealdah , West Bengal and who understand Bengali or English. Face to face interview was carried out using interview schedule, physical assessment proforma , record analysis proforma and a standardized online screening tool 'Your disease risk' by Siteman Cancer Center. The finding of the study revealed that majority of the patients (60%) were at high risk of colorectal cancer among which 39% were found to have much above average risk, 15% had above average and 6% had very much above average risk. The most predominant risk factors present among the patients are low consumption of vegetables (62%), fruits (77%) and fibre diet (66%), physical inactivity (67%) and obesity (44%). It also revealed that significant association exists between risk status and gender but no association exists between risk status and educational status, occupation, income. So it can be concluded that assessment of risk factors is important to reduce the number of people to suffer from colorectal cancer.

KEYWORDS : Colorectal Cancer, Risk Factors, Risk Status

INTRODUCTION:

Nearly every family in the world is touched by cancer, which is now responsible for almost one in six deaths globally. But cancer no longer needs to be a death sentence, as the capacity exists to reduce its burden and improve the survival and quality of life of people living with the disease. According to WHO between 30% and 50% of cancer deaths could be prevented by modifying or avoiding key risk factors, including avoiding tobacco products, reducing alcohol consumption, maintaining a healthy body weight, exercising regularly and addressing infection-related risk factors.[1] The third most common cancer in the world is colorectal cancer.[2] This thesis has focused on risk factors and risk status of colorectal cancer. The American Cancer Society's estimates for the number of colorectal cancer cases in the United States in 2017 are 144,000 new cases and 50,260 deaths[3]. In India, the prevalence rate of colorectal cancer is 87 per 1000 population according to Globocan 2012 prevalence rate. In West Bengal, estimated incidence of colorectal cancer cases were 86628 in 2015[4]. Colorectal cancer, or colon cancer, could be running in the genes more prominently in eastern India than the rest of the country.

A study conducted by Sankarnarayan R at AIIMS New Delhi which shows that survival rate of colorectal cancer in India remain low compared with rising rates in East Asia. Another study conducted by Patil PS et al of Tata Memorial Hospital[5], a referral cancer centre in Mumbai which shows that colorectal cancer in India differs from that described in Western countries. We had more young patients and more patients presenting with an advanced stage. Another study conducted by Mallath Mk at TMC Kolkata despite of availability of a range of CRC screening test, a large population in India do not undergo regular screening. That's why this study was done to bring awareness among the patients about the potential risks of colorectal cancer and motivating them to adopt suitable measures for prevention.

These growths are called polyps which over the time turn into cancer. Adenocarcinoma [6] (cancers that begin in cells that form glands making mucus to lubricate the inside of the colon and rectum) is the most common type of CRC which begins as adenomatous polyps. As the tumor grows, the cancer invades and penetrates the muscularis mucosae eventually tumor cells gain access to the lymph nodes and vascular system and spread to distant site.[7] Since venous blood leaving the colon flows through the portal vein, the liver is a common site of metastasis. Cancer may spread to other sites that include lungs, bones, brain or other organs in the body.

Worldwide prevalence of colorectal cancer: GLOBOCAN 2012; WHO, 2015[8] described that in India the estimated age-standardized rate per 100,000 as 5.4 [9]

According to GLOBOCAN 2012 [9] Colorectal cancer is the third most common cancer in men (746,000 cases, 10.0% of the total) and the second in women (614,000 cases, 9.2% of the total) worldwide. Almost 55% of the cases occur in more developed regions. There is wide geographical variation in incidence across the world and the geographical patterns are very similar in men and women: incidence rates vary ten-fold in both sexes worldwide, the highest estimated rates being in Australia/New Zealand (ASR 44.8 and 32.2 per 100,000 in men and women respectively), and the lowest in Western Africa (4.5 and 3.8 per 100,000).

In the United States excluding skin cancers, colorectal cancer is the third most common cancer diagnosed in both men and women. Indian Council of Medical Research (ICMR)[10] published a consensus document for management of colorectal cancer in 2014 where it was stated that in India, the annual incidence rates (AARs) for colon cancer and rectal cancer in men 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 9th among men. For women, rectal cancer does not figure in the top 10 cancers, whereas colon cancer ranks 9th. In the 2013 report, the highest AAR in men for CRCs was recorded in Thiruvananthapuram (4.1) followed by Bangalore (3.9) and Mumbai (3.7). The highest AAR in women for CRCs was recorded in Nagaland (5.2)

followed by Aizwal (4.5).

In West Bengal, estimated incidence of cancer was 86628 in 2015 in which colorectal cancer holds a significant share.[11] Colo-rectal cancer presents more prominently in eastern India than the rest of the country. A study conducted by the ICMR[12] reveals that a substantial percentage of colon cancer patients in Bengal are suffering from Hereditary Non-polyposis Colorectal Cancer (HNPCC) or Familial Adenomatous Polyposis (FAP) - a genetic form of the disease those results from the mutation of MSH6 and MLH1/MSH2 genes. According to researchers, these two types of colon cancer are substantially higher in eastern states, including West Bengal, than other regions. While 8.9% of all cancer patients in the state suffer from colon cancer, the figure is less than 1% in other regions.

Colorectal cancer is a formidable health problem, being the third most commonly diagnosed cancer and the fourth cause of cancer death worldwide [12].

Population based time trend studies show a rising trend in the incidence of CRC in India. It is found that the incidence rates of CRC in Indian immigrants to the United Kingdom and USA is much higher, suggesting that life styles and dietary habits are important in the causation of the CRC. But the fact is that colorectal cancer can be successfully treated in over 90% of cases, if diagnosed early.

Ignorance leads to lack of health maintenance. The fundamental problem of health maintenance is inability to motivate people to adopt a healthy lifestyle. In order to change the lifestyle of people, it is necessary that they know their risk status and about the cause and risk factors of colorectal cancer. That's why the investigator felt the need to explore the risk factor that is closely related to risk status. So if we are able to find out the common risk factors that mainly cause colorectal cancer it can help in early detection. Hence, a study was undertaken on Identification of risk factors and risk status of colorectal cancer among patients with GI problem attending Gastroenterology OPD in selected hospitals in Kolkata.

OBJECTIVES OF THE STUDY:

The objectives were to identify the risk factors of colorectal cancer, to determine the risk status of developing colorectal cancer among the patients with GI problems and to find out the association between risk status and selected personal characteristics of the subjects.

METHODOLOGY:

A cross-sectional descriptive survey was conducted to investigate the risk factors, risk status and demographic characteristics of the subjects. The participants were 124 purposively selected adult men and women attending the G.I. OPD of B.R.Singh Hospital, Eastern Railway, Sealdah,West Bengal who were willing to participate and could be communicated with English or Bengali. The persons with already diagnosed with colorectal cancer, who were acutely ill or impaired mental status were excluded from the study.

The researcher interviewed the participants face to face in the Gastrointestinal OPD. Sample characteristics and the risk factors were assessed by using separate interview schedule. Bio physical measurement was done for assessing BMI which then recorded in the physical assessment proforma, medical record books were checked and put into a record analysis proforma. On the basis of the risk factors the risk status of each subject was calculated by using a standardized tool; the online risk assessment tool "Your disease risk" introduced by iteman Cancer center. The subjects, who had high risk were informed about their status and asked verbally to attend oncology OPD thereafter.

ETHICAL CONSIDERATION:

Ethical clearance was taken from the Institutional Ethics Committee, Medical College& Hospital, and Kolkata. Informed consent was taken before interviewing the subjects. Confidentiality and anonymity of information was maintained.

RESULTS:

Data were calculated using SPSS version 16. As per the objectives, results were organized as: sample characteristics, risk factors of colorectal cancer, risk status subjects of developing colorectal cancer and association between risk status of colorectal cancer and sample characteristics.

Table. 1: Sample characteristics n = 124

Gender	Male	55%
	Female	45%
Religion	Hindu	62%
	Muslim	31%
	Christian	5%
	Others	2%
Education	Illiterate	5%
	Primary	52%
	Secondary	26%
	Higher Secondary	12%
	Graduate & above	6%
Occupation	Service	45%
	Home maker	43%
	Business	7%
	Unemployed	5%
Marital status	Married	82%
	Unmarried	4%
	Widow/Widower	12%
	Divorcee	2%
Monthly family income	Below Rs. 5000	0%
	Rs. 5000 – 10,000	0%
	Rs. 10,001- 20,000	28%
	Rs. Above 20,000	72%

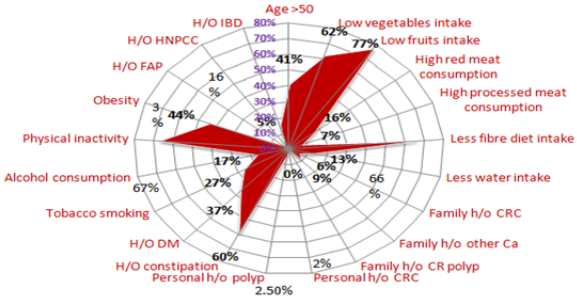

Fig 1. Depicting the risk factors of colorectal cancer

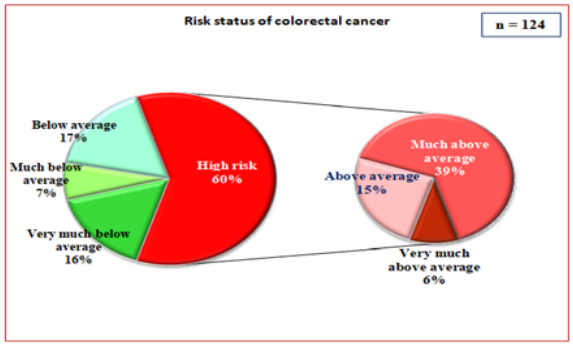

Fig 2: Pie diagram showing percentage distribution of respondents according to the 10 years risk status of colorectal cancer

Table 2: Association between demographic variables of respondents and risk status of colorectal cancer

Sample Characteristics	Risk Status		Chi square	df
	Below average	Above average		
Gender				
Male	26	40	5.082*	1
Female	12	46		
Monthly Family Income				
Below Rs.20,000	12	21	0.293	1
Rs.20,000& above	38	53		

RESEARCH HYPOTHESES:

Based on the results the following two hypotheses were developed:

H1: Significant association exists between genders of the people and the risk status of the colorectal cancer at 0.05 level.

H2: No significant association exists between risk status of colorectal cancer and income (0.293 at df 1), religion, educational status, at 0.05 level (chi2 value = 0.382 and 0.550 at df 2 respectively).

DISCUSSION:

The present study reveals that colorectal cancer risk status has statistically significant association with gender (chi square =5.082, p =0.05 at df= 1). It is supported with the study findings of Brandsted J, Wangefjord S, Nodin B, Gaber A, Manjer J, Jirstrom who conducted a study to find association with gender, anthropometric factors and risk of colorectal cancer in 584 incident colorectal cancer cases from a Swedish prospective population-based cohort including men and women. The results in that study depicted that risk of Colorectal Cancer differs according to gender, location, and tumor stage.

The present finding of the study reveals that there is no significant association present between educational status, income, occupation and risk status of colorectal cancer. It is not supported with the study findings of Hoverstad KN who conducted a prospective cohort study to find out the association between colorectal cancer incidences with socioeconomic status in a Norwegian population which showed a negative social gradient associated with incidence of colon cancer.

LIMITATIONS OF THE STUDY:

As the setting lacked diverse population, it limits the generalization of findings beyond the study population.

RECOMMENDATIONS:

Based on the findings the areas recommended for future study are: research on a large sample, at different settings, Case control study, on preventive strategy using various teaching strategies, quality of health care services provided to prevent the risk of colorectal cancer.

CONCLUSION:

On the basis of the findings it was concluded that the risk factors of colorectal cancer were prominently present among the patients attending Gastroenterology OPD with GI problem. The most predominant risk factors among them were low consumption of vegetables, fruits and fibres, physical inactivity, and obesity. A large number of the subjects (60%) were identified with high risk of developing colorectal cancer. Among these high risk people maximum (39%) were found to have much above average risk, 15% had above average risk and 6% of the subjects were identified with very much above average. Risks of colorectal cancer were found dependent on gender but was neither dependent on education nor on income, religion, education.

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