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Relation between Opiate Abuse and Colorectal Cancer Prognosis: A Retrospective Survey

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Abstract

Introduction: To evaluate any potential effect of narcotics (opioids) abuse on the natural course and mode of clinical presentation of colorectal cancer.

Method: By evaluating recorded DATA in a referral center during a 9 years period from 2004 to 2013 and dividing and comparing cases of colorectal cancer based on the history of opiate abuse.

Results: Overall 351 cases of colorectal cancer included. 79 cases diagnosed as colon cancer, 254 cases as rectal cancer and 18 patients as colorectal tumors. The median age of male and female patients were 60 and 56.1 year. 54.7% of patients were male (192 people). Most of the patients have been diagnosed between age 51 to 70 (43.58%). After dividing patients based on opiate addiction history, overall 28 patients located in group A as opiate abusers (7 with colon cancers (2%), 20 with rectal cancer (4.8%) and 1 with colorectal tumor (0.3%) and the rest of patients located in group B as non-opiate users (323 patients).

There was a significant difference in habituates such as smoking (P=0.0001) and sexual distribution while there was no meaningful demographic difference for viewpoint of age and family history. Although the average age of opiate abusers was lower than the control group but this difference was non-meaningful (P=0.105). The rate of distant metastasis and mortality were 7.14% and 25% in group A and 19.19% and 10.31% in group B respectively (P=0.113 and 0.389).

Comparison of pattern of clinical presentation between 2 groups revealed that not only the mode of presentation differed between two groups but also the relative distribution of clinical symptoms were also different. There was a meaningful difference in prevalence of melena as a presenting sign between 2 groups (P=0.046) while other differences were non-significant statistically (P>0.05).

Conclusion: Opium abusing can change the clinical picture of colorectal cancers and result in diagnosing delay. With considering its coactivities such as sigarrete smoking, it is highly recommended to discourage its abuse and warning general population about potential hazards.

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Introduction

Colorectal cancer as one of the most common malignancies can potentially invade to the adjacent organs or induce long distance metastasis [1]. Annually more than 1.5 million people diagnosed by these malignancies and the distribution between male and female is almost equal [2]. The prevalence has a gradually raising scale after age 40 to 50 and its most common incidence is after age 50 [2,3]. In IRAN the prevalence of these tumors is increasing probably due to changing of traditional nutritional style and evolving and accommodation into western type nutritional habits. Currently it is the 4th most common cancer among men and the fifth among women [3].

Management of these tumors in early stages is much easier and could be achieved by just surgery but unfortunately 45% of patients diagnosed as advanced stages 3 or 4 with a survival rate of less than 50% while survival rate could potentially raise up to more than 95% by diagnosing stage 1 patients [4] which further emphasize on the importance of early stage detection.

Opiate abuse and addiction is one of the social conflicts which can threat and challenge the general healthiness of population and could be a potential risk factor for inducing cancer and GI disorders [5]. Based on official reports of world health organization (WHO) and united nation organization (UN), there are more than 220 million addicted people worldwide, of them 9 to 12 million used to be addicted to Heroin or opioid derivatives [6].

Opioids are a group of narcotics which include Morphine, Codeine, semi synthetic derivatives such as Heroin and all of the agonists and antagonists that behave like Morphine i.e., Endorphins [7,8]. These drugs have property of numbness, analgesia, anesthesia, sedation and euphoria and by introduction of hypodermic syringe in early 1850's, their usage dramatically increased worldwide and resulted in significant growing of addiction [9]. The human bodies produce endogenous narcotics similar to exogenous opioids [8,10]. The scope of these endorphins is to minimize pain conception and their receptors are present in multiple organs including GI tract and rectum [7,9,10]. The exogenous opioids can affects these receptors and their detrimental effects of bladder, lungs, pancreas, stomach and other GI cancers have been elucidated [11-13]. The aim of this study is to investigate the relation between narcotics (opioids) abuse and colorectal cancer in a referral center during an 8 years period.

Method

By a survey in archive of Ahvaz Imam Hospital as a referral center in a 9 years period from 2004 to 2013, the DATA about colorectal cancer including stage of disease at the time of initial diagnosis collected and then the patients divided into 2 groups based on the history of opiate usage. In case of any deficiency in patients file, we tried to contact by phone call with patient (or his or her relatives in case of mortality). Then the collected DATA analyzed by our statistician by using Chi square test and SPSS software version 19 and we compared the different aspects of disease between two groups.

Results

Overall in this period 351 cases of colorectal cancer have been admitted in Imam Hospital of them 79 cases diagnosed as colon cancer, 254 cases as rectal cancer and 18 patients as colorectal tumors. The median age of male and female patients were 60 year (range 24 to 94) and 56.1 year (range 19 to 88) respectively. 54.7% of patients were male (192 people). Most of the patients have been diagnosed between age 51 to 70 (43.58%). After dividing patients based on opiate addiction history, overall 28 patients located in group A as opiate abusers (7 with colon cancers (2%), 20 with rectal cancer (4.8%) and 1 with colorectal tumor (0.3%) and the rest of patients located in group B as non-opiate users (323 patients) **(Table 1).**

Comparison of demographic and habitual characteristics of 2 groups revealed a significant difference in habituates such as smoking (P=0.0001) and sexual distribution while there was no meaningful demographic difference for viewpoint of age and family history **(Table 2).** Although the average age of opiate abusers was lower than the control group (53.9 y in comparison with 58.7 y) but this difference was also non meaningful (P=0.105). The rate of distant metastasis and mortality were 7.14% and 25% in group A and 19.19% and 10.31% in group B respectively (P=0.113 and 0.389).

Table 1 Distribution of patients between groups A & B based on opiate abuse history.

	Group A (opiate abusers)	Group B (No history of opiate abuse)
Colon cancer	7 (2%)	72 (20.5%)
Rectal cancers	20 (4.8%)	234 (66.7%)
Colorectal tumor	1 (0.3%)	17 (4.8%)
Total	28 (7.97%)	323 (92.02%)

Comparison of pattern of clinical presentation between 2 groups revealed that not only the mode of presentation differed between two groups but also the relative distribution of clinical symptoms were also different as for example the most common clinical symptom in opiate abusers include abdominal pain, melena and anorexia while in non-opiate users weight loss was among the most common symptoms (35.7%) **(Table 3).** There was a meaningful difference in prevalence of melena as a presenting sign between 2 groups (P=0.046) while other differences were non meaningful statistically (P>0.05) **(Table 3).**

Discussion

Colorectal cancer as one of the most common cancers among human being, have a deep impact on the health of communities and while are almost completely curable if diagnose at early stages, could bear a huge burden of economic pressure and accompany a high rate of morbidity and mortality in advanced stages [1-4,6]. Based on these facts, their public screening is highly recommended and beside screening, awareness and familiarity of not only health related staff but also general population with its usual modes of presentation is one of the necessities to elevate level of public health and decrease its economic pressure [14-16].

Environmental factors have closely related to the prevalence of colorectal cancers and although nutritional habits and traditions are among the most important ones, we should keep in mind other factors including recreational activities [17-19]. One of these activities is opiate abusing that potentially could have many social effects from a variety of aspects including decreasing level of physical activity as one of the cancer preventives [20]. In the current study, we investigated any potential role of opiate abusing on the mode of presentation, progression and severity of colorectal cancers as rate of morbidity and mortality.

Based on recorded DATA, the relative prevalence of clinical symptoms between two groups were different with most significant difference in the prevalence of melena as the presenting symptom **(Table 3).** These differences are partly because Opioids as broad spectrum analgesic agents, affecting a wide number of organ systems and influencing a large number

of body functions [21] and potentially could lead to delay in presentation and diagnosis of colorectal cancer same as any other malignancy [22,23].

Another important point is the coactivities that taking place in concordance with opium abusing. Other recreational habituates including smoking were significantly more prevalent among opium abusers (P=0.0001) and the detrimental effects of smoking on the course of colorectal cancer have been obviously cleared [24,25]. Our DATA about history of alcohol consumption was incomplete because in our region many patient are reluctant to verify their history of alcohol consumption due to religious and social prohibition.

Although statistically non-significant, average age of opiate abusers at the time of diagnosing with cancer was less than general population (56.8 in comparison with 60.4, P=0.105) and this difference should be interpreted cautiously specially when considering higher mortality rate (25% in abusers vs. 10.31% in general population). So it seems that these finding further highlights the importance of raising general awareness about potential hazards of opium addiction and discouraging its abuse.

Conclusion

Opium abusing can change the clinical picture of colorectal cancers and result in diagnosing delay. With considering its coactivities such as sigarrete smoking, it is highly recommended to discourage its abuse and warning general population about potential hazards.

Table 2 Demographic and habitual characters of 2 groups (NA: non accessible).

Character	Group A (Opiate abusers)	Group B (no opiate abuse)	Pearson Chi Square	P Value
Average Age	56.89 (33–81)	60.44 (19–93)	---	0.105
Sex (m/f)	25/3	167/155	14.568	<0.00001
Family history of colorectal cancer	5 (17.85%)	33 (10.21%)	1.558	0.212
Smoking	14 (50%)	30 (9.28%)	38.951	<0.00001
Alcohol drinking	1 (3.57%)	NA	NA	NA

Table 3 Clinical symptoms of colorectal cancer at presentation among 2 groups.

Symptom	Group A (opiate users)	Group B (non-opiate users)	P value
Melena	45.45%	19.49%	0.046
Abdominal pain	45.4%	49.1%	0.814
Anorexia	36.3%	23.72%	0.353
Weight loss	27.3%	38.98%	0.44
Nausea & Vomiting	18.2%	19.5%	0.916
Constipation	18.2%	16.1%	0.858
Rectorrhagia	45.4%	36.4%	0.593
Diarrhea	18.2%	26.3%	0.126

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