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Depression and Anemia

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Abstract:

Background: Depression exists in mild, moderate, and severe depressive attacks. Evidence suggests that depression is linked to anemia. Several studies have established a correlation between depression and anemia. In previous studies, a venous blood sample was normally used to analyze the average value of hemoglobin and parameters of erythrocytes. The current study examined full blood count (FBC) in different populations of erythrocytes in individuals with depression (DE) compared to a healthy control group (CON).

Material and Methods: All DE, *n*=24 were diagnosed with DSM-IV and ICD-10. CON, *n*=54 served as controls. A Percoll™ gradient was used to separate erythrocytes into different density fractions. In all fractions, FBC, i.e., red blood cell count (RBC), hemoglobin concentration (Hb), mean corpuscular hemoglobin (MCH), mean body hemoglobin concentration (MCHC) and mean body volume (MCV) were analyzed using a CELL-DYN 4000. As a comparison, a second blood sample was also taken, where the mean values of FBC were analyzed.

Results: When the mean value of FBC was analyzed, no significant difference was found between the groups. In contrast, when erythrocytes were separated by density, a lesser amount of Hb was found amongst the smaller erythrocytes, i.e. fractions nos. 8-17 ($p < 0.05$). No significant difference was found when measuring MCH and MCHC in the same density fractions.

Conclusion: The current study provides evidence that smaller erythrocytes that were divided by density have less hemoglobin. However, erythrocytes which were not separated by density i.e. mean values of hemoglobin showed no difference between the groups. For that reason, it may be of value to perform an extended analysis of erythrocytes and hemoglobin as a complement to the average value of hemoglobin. This may be of value when DE patients are investigated for anemia.

Keywords: anemia; depression; erythrocytes; hemoglobin

Introduction

Depression is a neurological condition that can be differed into severe, moderate, mild, and depressive episodes. The disease is common in several different populations, and the condition is more common in those suffering from chronic disease [1]. Several different studies confirm that depression is related to anemia [2-4]. However, a contrary notion exists, an earlier cohort study confirmed that no association exists between depressive disorders and hemoglobin levels or anemia status [2]. Another study showed that the connection with anemia is accounted for by physical health status and may mirror anemia of chronic disease [5]. Another additional study suggests that anemia is associated with depression in women but not in men [6].

Symptoms of low hemoglobin level (dizziness, fatigue, whiteness, shortness of breath during physical activity, higher heart rate at rest) also occur in depressive symptoms. A possible connection between low hemoglobin levels i.e. anemia and depression can probably be explained by an underlying poorer physical health status such as fatigue [7-9], lower levels of brain oxygen [10], deficiency of vitamin B_{12} [11] or elevated inflammatory levels [12-13]. However, previous studies show that depression may result in lower hemoglobin levels due to worse health behaviors, examples include malnutrition or high alcohol consumption [14-15]. The use of psychotropic treatments especially selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake

inhibitors (SNRIs) is connected to a higher risk of abnormal bleeding which could lead to anemia [16-17]. On the other hand, antidepressants may be able to decrease the risk of anemia by easing depressive symptoms and thereby improving health-related behaviors [14].

To our knowledge, previous studies regarding depression and anemia have focused on the analysis of whole blood, that is, a regular venous blood sample in which the average value of hemoglobin level and parameters of red blood cells have been analyzed. In this study, the aim was to analyze the full blood count in different populations of erythrocytes in individuals with major depression. These different population of red blood cells was then compared with the red blood cells of healthy participants in an adult population to determine whether depression is associated with anemia.

Material and Methods

Subjects

The current study included 24 patients with depression (DE), aged 50 ± 14 years (mean ± SD). Recruitment of patients took place in connection with care visits to the psychiatry clinic at the local hospital. All subjects included in the study were diagnosed with DSM-IV and ICD-10. As for DSM-IV, it is specifically described that the condition must have resulted in a change in the person's condition. The patients who verbally declined the study were excluded. The control group (CON) consisted of 54 healthy individuals aged 67 ± 4 years (mean + SD). All of the CON group were included in the study after requesting medical care at a nearby health center, all of whom were free of any depressive condition. Appropriate Ethics declarations are as follows: both patients and the control group gave informed consent. The study has been approved by the local ethics committee at Linköping University, Sweden (reg. number: 2012/269-32).

Laboratory Investigations

From each subject, two blood samples were taken from the antecubital vein. Vacutainer™ tubes (Becton and Dickinson, New Jersey, U.S.A.) were used for this purpose. The blood of the first tube, containing 7.5 ml was anticoagulated by adding 2.5 ml of antiplatelet solution. This mix where then poured into a 50 ml tube containing a linear Percoll™ (GE Healthcare Bio-Sciences AB, Sweden) gradient covering the density range of 1.04–1.09 kg L. The gradient tube was then used to separate erythrocytes by density. The procedure has been described previously [18-20]. Briefly, the gradient tube was centrifuged at 2767 g for 1.5 hours. Next, the bottom of the tube was perforated so that 2 ml gradient fractions could be poured by gravity into smaller test tubes. In each of these fractions a Full Blood Count (FBC), i.e., red blood cell count (RBC), hemoglobin (Hb) concentration, mean corpuscular hemoglobin (MCH), mean body hemoglobin concentration (MCHC) and mean body volume (MCV) were analyzed using a CELL-DYN 4000 (Abbott Diagnostics, Illinois, USA). The second tube, containing 3,5 ml venous blood anti-coagulated with NaEDTA was used to measure mean values of FBC.

Statistics

Microsoft Excel®, ver. 12.0.6514.5000 was used for the statistical calculations. The unpaired Student's t-test was used to estimate quantitative data. p-values ≤ 0.05 were used to specify significance.

Results

The mean values of full blood count (FBC) between DE and CON are shown in table 1. There was no demonstrated difference between the groups.

Figure 1: The distribution of erythrocytes (x 10^{12}/L) in the gradient for depression patients and controls. Fraction no. 1 detains erythrocytes having the highest density.

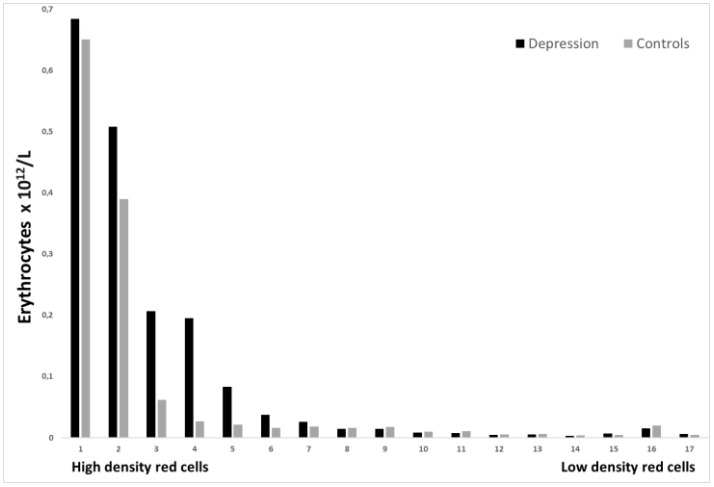

Figure no. 1 shows 17 different density fractions of red cells. Fractions nos. 1-17 showed no significant difference between the two groups.

Figure 2: The hemoglobin concentration (g/L) in 17 different erythrocytes population, is shown for depression patients and healthy controls. The densest erythrocytes are found in fraction no. 1.

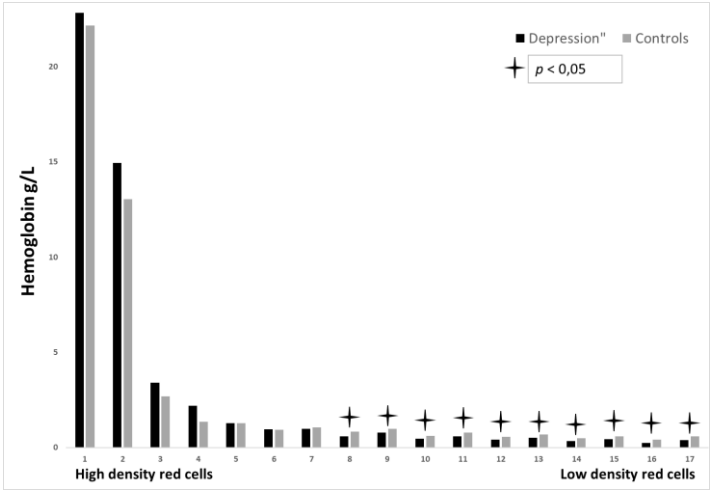

Figure no. 2 illustrates Hb-concentration in matching 17 different density fractions, no significant difference was found in fractions nos. 1-7, fractions nos. 8-17, on the other hand, showed a significant difference, $p<0.05$.

Figure 3: The mean corpuscular hemoglobin (pg) is revealed for depression patients and healthy controls in 17 various erythrocytes populations.

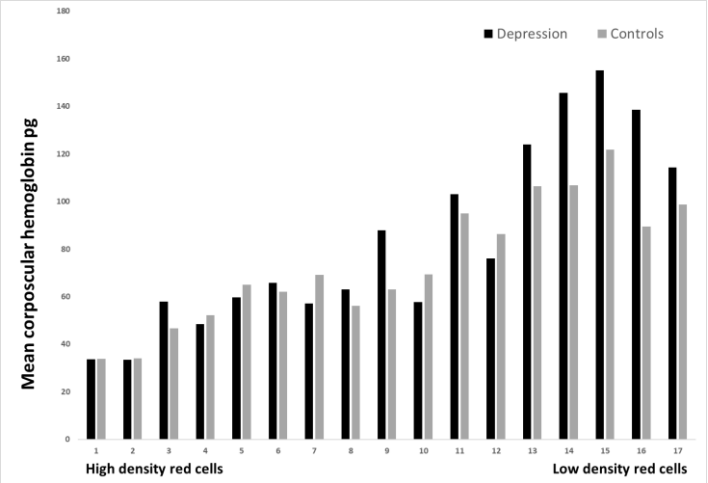

Figure no. 3 displays MCH measured in the same 17 different density fractions. Some of the fractions (fractions nos. 3, 9, and 12) showed a significant difference between the two groups, $p < 0.05$. At last,

Figure 4: The mean body hemoglobin concentration (pg) is demonstrated for depression patients and controls in 17 different erythrocytes populations.

hard, fixed mass arising cancer (also known as bowel cancer and colon cancer) respectively. Esophageal cancer is the 8th most common in the World and is ranked as the sixth most common cause of mortality among all other cancers. ESCC arises from the cells that line the upper part of the esophagus. EDC arises from epithelial cells that are present at the junction of the esophagus and stomach. The risk factors for esophageal cancers include alcohol, smoking, Achalasia, symptomatic gastroesophageal reflux, etc. [3]. Carcinoma of the stomach, also called gastric cancer, is the fourth-most-common type of cancer and the second most common cause of death from cancer (734 000 deaths annually) [4]. Adenocarcinoma of the stomach is a cancerous tumor defined as neoplasia of epithelial tissue with a glandular origin, glandular characteristics, or both. The risk factors associated with gastric carcinomas are alcohol consumption, diet, infections, e.g., Helicobacter pylori, Epstein-Barr virus, genetic factors (including many inherited syndromes), and pernicious anemia [5,6]. Colorectal cancer is the 4th most common in the World, with 1.3 million new cases each year. It is a disease in which malignant (cancer) cells form in the inner lining of the colon or rectum [1]. The risk factors predisposing to colorectal cancers include age and genetics mainly, while sedentary lifestyle, obesity, smoking, alcohol, and diet also play a role in the development of such cancers. The two most common inherited syndicates of colorectal cancers are familial adenomatous polyposis and hereditary non-polyposis colorectal cancer [7]. Gastric cancers were the main cause of death in the United States up to the mid-20th century, and now it is 3% of cancer deaths among people in the United States. Prevalence of gastric cancer is 7 to 8 times more in Chile and Japan than in the United States. The highest prevalence of gastric cancer is observed in Japan. Incident rates are highest in Japan (in men, 77.9 per 100000, and in women, 33.3) [6]. The Incidence of gastric cancer is 19.7 per 100000 people in Semnan province in Iran [1]. Cancer-related deaths are more common in gastric cancer, the fourth most commonly diagnosed cancer in the World. More than one million people have diagnosed with stomach cancer annually [7]. According to Globocan 2008, with an anticipated 102,040 new cases and 50,156 cancer fatalities in 2008, stomach cancer is the third most often diagnosed cancer and the second leading cause of cancer deaths in Japan. China accounts for 42% of all gastric cancer cases worldwide [8]. In 2010, the researcher estimated that 21,000 new cases of gastric cancer were diagnosed in the United States alone, and approximately 50% of affected individuals died from the disease [9,10]. According to the American Cancer Society's estimations, there will be 39,910 new cases of rectal cancer and 95,520 new cases of colon cancer in the United States in 2017. According to the world cancer report in 2003, Esophageal cancer is a relatively rare form of cancer, and around 80% of the cases worldwide occur in less developed regions. Still, some areas have a higher incidence than others, like China, Iran, India, Japan, and the region around the Caspian Sea [11]. The eastern part of the Caspian littoral area of Iran has the highest Incidence of Esophageal cancer in the World [12]. Approximately 15,560 new Esophageal cancer cases were diagnosed in the United States in 2007 [13]. The importance of conducting this research lies in the fact that in our country, there is a lack of research in the field, and most of the studies have been carried out in the Western World. Its population since that is where technology made its first stride and technical knowledge transpired. Researchers on the East Asia population conducted little to no studies because technology and associated knowledge showed up later in this part of the World, specifically Pakistan. There needs to be statistical proof of the side effects so that people truly are educated and become aware and move towards attaining a better quality of living. This research aims to spread awareness about the wide variety of risk factors causing the cancers mentioned above.

Materials & Methods

This study was conducted on a cross-sectional basis across three hospitals; 2 in Peshawar and 1 in Abbottabad. Samples of Cancer patients were taken from two locations in Peshawar, i.e., Hayatabad Medical Complex (HMC) and Irnum Hospital Peshawar, and from INOR, Abbottabad.

Research conducted is a descriptive cross-sectional study based on patients with the following 4 Gl cancers: Esophageal Squamous Cell Carcinoma, Esophageal Adenocarcinoma, Gastric Adenocarcinoma, and Colorectal Carcinoma.

The sampling size was 60, with the Sampling Technique of Non-probability purposive sampling. The study sample included three hospitals, two from Peshawar and one from Abbottabad. The study was performed for six months, from November 2021 to April 2022, during which, Data collection, Analysis, Results, and recommendations based on study findings, were carried out.

Results

Shows-the-Gender-of-the-participants-

Figure 1: Shows the Gender of the participants

Figure 1 shows that 34 patients out of 60 were male(57%) and 26 were female(43%).

Shows-distribution-of-Gastrointestinal-cancers-in-participants.
Figure 2: Shows distribution of Gastrointestinal cancers in participants.
Figure 2 shows that colorectal cancer is the most common Gastrointestinal cancer among the three with the highest percentage of 37%(22 participants out of 60), followed by gastric carcinoma with the percentage of 33%(20 participants out of 60), leaving behind esophageal cancer with the lowest percentage of 30%(18 participants out of 60).

Shows-the-frequency-of-occurrence-of-colorectal-carcinoma-on-a-gender-basis.-
Figure 3: Shows the frequency of occurrence of colorectal carcinoma on a gender basis.
Figure 3 shows that among the patients with colorectal cancer, 45%(10 out of 22 participants) are males while 55%(12 out of 22 participants) are females.

Shows-the-relationship-between-colorectal-carcinoma-and-family-history.
Figure 4: Shows the relationship between colorectal carcinoma and family history.
Figure 4 shows that in patients with colorectal carcinoma, 18%(4 out of 22 participants) patients have positive family history while 82%(18 out of 22 participants) show a negative family history of colorectal carcinoma.

shows-the-relationship-between-smoking-and-colorectal-carcinoma.
Figure 5: shows the relationship between smoking and colorectal carcinoma.
Figure 5 shows that 5%(1 out of 22 participants) of patients with colorectal carcinoma are smokers while 95%(21 out of 22 participants) are non-smokers.

Shows-the-relationship-between-protein-intake-and-colorectal-carcinoma.
Figure 6: Shows the relationship between protein intake and colorectal carcinoma.
Figure 6 explains that among patients with colorectal carcinoma 55%(12 out of 22 participants) have high protein content in their diet while 45%(10 out of 22) have low protein intake.

Shows-the-relationship-between-predisposing-conditions-for-colorectal-carcinoma-and-colorectal-carcinoma.
Figure 7: Shows the relationship between predisposing conditions for colorectal carcinoma and colorectal carcinoma.
Figure 7 shows that among patients with colorectal cancer, the patients with a history of polyps are on the top with a percentage of 64%(14 out of 22 participants), second in line are those with a history of Inflammatory bowel disease(IBD) having a percentage of 27%(6 out of 22 participants). At the bottom of the list are patients with no history of predisposing conditions for colorectal cancer having a percentage of 9%(2 out of 22 participants).

Shows-the-frequency-of-occurrence-of-gastric-carcinoma-on-a-gender-basis.
Figure 8: Shows the frequency of occurrence of gastric carcinoma on a gender basis.
Figure 8 shows that among patients with gastric carcinoma,60%(12 out of 20 participants) are males and 40%(8 out of 20 participants) are females.

Shows-the-relationship-between-gastric-carcinoma-and-family-history.
Figure 9: Shows the relationship between gastric carcinoma and family history.
Figure 9 shows that in patients with gastric cancer, 10%(2 out of 20 participants) have positive family history while 90%(18 out of 20 participants) have a negative family history of gastric carcinoma.

Shows-the-relationship-between-gastric-carcinoma-and-smoking.
Figure 10: Shows the relationship between gastric carcinoma and smoking.
Figure 10 shows that in the case of gastric carcinoma patients,40%(8 out of 20 participants) are smokers while 60%(12 out of 20 participants) are non-smokers.

Shows-the-relationship-between-protein-intake-and-Gastric-carcinoma.
Figure 11: Shows the relationship between protein intake and Gastric carcinoma.
Figure 11 shows that in patients with gastric carcinoma,90%(18 out of 20 participants) have high protein content in their diet while 10%(2 out of 20 participants) have low protein intake.

Shows-the-relationship-between-predisposing-ulcer-and-gastric-carcinoma.
Figure 12: Shows the relationship between predisposing ulcer and gastric carcinoma.
According to Figure 12, the percentage of patients with predisposing peptic ulcers is 55%(11 out of 20 participants), while the percentage of those with a predisposing duodenal ulcer is 30%(6 out of 20 participants). The percentage of patients having no ulcer is 5%(3 out of 20 participants).

Shows-the-relationship-between-H.-pylori-infection-and-gastric-carcinoma.
Figure 13: Shows the relationship between H. pylori infection and gastric carcinoma.
Figure 13 shows that among the total patients with gastric carcinoma questioned, only 40%(8 out of 20 participants) had a positive H. pylori infection history while 60%(12 out of 20 participants) showed negative results.

Shows-the-frequency-of-occurrence-of-esophageal-carcinoma-on-gender-basis.
Figure 14: Shows the frequency of occurrence of esophageal carcinoma on gender basis.
According to Figure 14, among the patients with esophageal carcinoma 70%(12 out of 18 participants) are males while 30%(6 out of 18 participants) are females.

Shows-the-relationship-between-family-history-and-esophageal-carcinoma.

Figure 15: Shows the relationship between family history and esophageal carcinoma.
According to Figure 15, among the total individuals with esophageal cancer questioned, 9%(2 out of 18 participants) had positive family history while 85%(16 out of 18 participants) had a negative family history of esophageal cancer.

Shows-the-relationship-between-smoking-and-esophageal-carcinoma.
Figure 16: Shows the relationship between smoking and esophageal carcinoma.
Figure 16 shows that in patients with esophageal cancer, 31%(6 out of 18 participants) are smokers while 65%(12 out of 18 participants) are non-smokers.

Shows-the-relationship-between-Hot-beverages(-Coffee-or-Tea)intake-and-esophageal-carcinoma.
Figure 17: Shows the relationship between Hot beverages(Coffee or Tea)intake and esophageal carcinoma.
According to Figure 17, among the total esophageal cancer patients surveyed, 89%(16 out of 18 participants) consume coffee/tea while 19%(2 out of 18 participants) don't.

Shows-the-relation-between-Frequency-of-Hot-Beverages-intake-and-Esophageal-Carcinoma.
Figure 18: Shows the relation between Frequency of Hot Beverages intake and Esophageal Carcinoma.
Figure 18 shows among the study group, the highest percentage is secured by patients consuming hot beverages more than 3 times a day with a value of 47%(9 out of 18 participants), followed in line by those whose intake equals to less than thrice a day with a percentage of 37%(7 out of 18 participants) , leaving behind patients who do not drink hot beverages at all with a percentage of 9 %(2 out of 18 Participants).

Shows-the-relationship-between-the-predisposing-esophageal-diseases-and-esophageal-carcinoma.
Figure 19: Shows the relationship between the predisposing esophageal diseases and esophageal carcinoma.
Figure 19 describes that patients with no esophageal diseases dominate with the highest percentage of 32%(6 out of 18 participants) followed by patients having GERD with the percentage of 27%(5 out of 18 participants). Following in line are patients with achalasia and GERD with a percentage of 21%(4 out of 18 participants) and those with achalasia alone with a percentage of 16%(3 out of 18 participants).

Discussion

The main objective of our study was to identify the three most common risk factors for Common Gl cancer; Colorectal, Gastric, and Esophageal cancer. Many risk factors, both modifiable and nonmodifiable, were studied for each tumor in an effort so that we can continue to understand what we have about these cancers and the risks that lead to their development and to provide better information on which individuals are most susceptible and would best benefit from screening practices. Our research is based on each cancer with a specific set of risk factors.

Stomach cancer:

The results of our study indicate that most patients with Gastric carcinoma have a positive family history of gastric carcinoma. Thus result shows a strong connection between the family history of stomach cancer and the emergence of the disease. These findings were consistent with many other studies, such as Palli D et al., which concluded that a good family history of Gastric cancer was a significant risk factor in the development of gastric carcinoma [14]. Another study by Zhou XF, L.al, found that when relatives of Gastric carcinoma patients develop their cancer, most of the cancer is naturally (87% of all tumors were Gastric cancer)[15]. This research further shows that gastric cancer may have different genetic and environmental etiologies in other families, and a specific subtype may be inherited in a female-influenced fashion.

Our study found that among patients with stomach cancer, the highest proportion of patients (40%) smoke cigarettes regularly. Compared to smoking prevalence in the general population, this is a significantly more significant percentage of smokers. So it shows a positive link between smoking and stomach cancer. These findings are similar to other studies as established by meta-analyses, such as that conducted by Tre'Daniel J et al., who also concluded that there is a clear positive relationship between smoking and the risk of stomach cancer [16].

Our data analysis reveals that more than half (55%) of patients with stomach Cancer had a predisposed peptic ulcer, more common than those without ulcers(5%). Thus this analysis indicates a clear positive relationship between Peptic ulcers and stomach cancer in our study, which is in line with research conducted by Sawyer RB et al. that reported a threefold increase in the incidence of stomach cancer among patients with peptic ulcers and concluded that gastric ulcers have a direct risk possible [17]. The link between peptic ulcers and stomach cancer is still controversial, even though the growing evidence points to a positive relationship between the two. We hope our research will help bridge gaps in understanding the relationship between peptic ulcers and stomach cancer. Our study showed a small percentage of gastric carcinoma; surprisingly, Patients who had H. Pylori positive (40%), although estimated to be 50% Global population is H.Pylori positive. Thus our study shows the complete link between H.Pylori and gastric cancer was not found in our research. This is in stark contrast to many other studies, like that of Wroblewski L.E et al., which means that H.Pylori infection is the most potent risk factor for stomach cancer [18].

Colorectal cancer:

The most important variable of colorectal carcinoma studied in our study was advancing age. Most studies establish positive relationships between colorectal carcinoma and the progression of age. Family history of colorectal cancer and its effects on the risk of colorectal cancer have been published for a long time; Our study found that 18% of colorectal Carcinoma cases had a first relative with such cancer. This number is almost identical to many other studies, which say that the family pattern of colorectal carcinoma accounts for about 20% to 25% of all cases. However, there have been studies about the increased risk of colorectal cancer in the first relatives of patients with the disease, ranging from no increased risk as high as eight times the risk reported to

first relatives by Razen. P. et.al [19]. The relationship between family history and the risk of cancer requires further research to gain a clear understanding of the relationship between these two. Findings in our study indicate that only 1 in 20 people suffering from colorectal carcinoma were smokers. Such a small number cannot prove a good relationship. These findings contradict many published studies, such as Fagunwa IO et al., which show an important, modest, positive relationship between smoking and the risk of colorectal carcinoma, even establishing a clear dose-response relationship between smoking and cancer risk [20]. One possible reason why our study could not establish a positive relationship is that significantly fewer people in our study demographic smoke cigarettes. Most of the cigarettes used are chewing tobacco or hookah and sheesha, which are not considered part of our study. This, combined with the already modest correlation between smoking and the risk of cancer, may have contributed to our results being unable to show a positive relationship. Our study also found that many patients reported a high-protein diet, including plenty of red meat several times a week. 55% of patients reported a high protein diet, indicating positive correlations between dietary factors such as meat consumption and carcinoma risk. These findings are consistent with various epidemiological studies where meat consumption is associated with an increased risk of colorectal cancer.

Esophageal cancer:

Our analysis also revealed that only 9% of respondents have a good family history of Esophageal cancer. The low number thus indicated a lack of positive correlation, but many other studies have shown otherwise. Chen T et al. and many others have repeatedly shown a strong positive relationship between the family history of esophageal cancer and the risk of developing it [21]. Researchers like those of Preet KD et al. in the United States showed an evident lack of family history of digestive cancer with any esophageal carcinoma [22]. Our analysis revealed that only 31% of people with throat cancer smoked cigarettes. These numbers are too low to establish a definite relationship between smoking and Esophageal cancer. Other studies, such as those conducted by the General Physician Of the United States, have explicitly included tobacco in the etiology of esophageal adenocarcinoma. Our study does not consider the use of hookah, sheesha, and chewing tobacco that may impact cancer growth. Our study reported that the vast majority (9 out of 10 patients) drank tea or coffee daily. About half of these drink hot beverages more than three times a day. So many hot drink buyers among patients with esophageal cancer show transparent, strong positive relationships. Such connections are indicated by many studies similar to that of Andrici J et al. [23].

Our study shows that the majority of cases (68%) of esophageal carcinoma have at least one of the two hypothetical diseases included in our study; such a high prevalence shows a clear positive link exists between esophageal diseases, such as GERD and Achalasia, and the risk of esophageal carcinoma. This is in line with the proven facts that endless GERD can lead to the development of Barret's esophageal sphincter. Gastroesophageal reflux disease (GERD) emerges, along with obesity, as one of the most vital risk factors for adenocarcinoma of the esophagus. Chow et al. found a two-fold to four-fold increase in the risk of esophageal adenocarcinomas. Our findings were consistent with previous research and helped to expand our knowledge of the epidemiology of Esophageal cancer in our region.

Conclusions

From statistical analysis and the result of our research, it can be concluded that GI Cancer is a prevalent problem requiring concern and action. Even in a small sample size of 60, a significant proportion suffered from risk factors leading to GI Cancers. GI Cancers primarily affect people around 50 years of age, with males at a higher risk than females. Among all three types of Gl Cancers, Colorectal Carcinoma is the most common one. It is most prevalent in females, while esophageal and gastric carcinomas are on the top in males. Most patients lacked a significant family history of GI Cancers, indicating a weak association between family history and the type of GI Carcinoma. Also, the majority of the patients were found to be nonsmokers. Still, some male patients were Ex-Smokers who smoked for longer in their past life and developed GI Cancers in their old age. It was also found that frequent hot beverages, including coffee, etc., especially by male patients, increase the risk of developing GI Cancers. Excessive consumption of red and processed meat also appears to be deleterious. Among predisposing ulcers, patients with peptic ulcers were more to create Gastric cancers in the very elderly age. Also, patients with Gastroesophageal reflux diseases and Achalasia suffered more from GI Cancers than those lacking these conditions. The two major risk factors for GI cancers, but from our analyzed data, none of the patients were found to be alcoholic or obese. As Pakistan is a Muslim country, the use of alcohol is banned in our country, and hence no association can be established between chronic alcoholism, obesity, and GI cancers. H Pylori infection was also reported positively from a relatively smaller proportion of respondents. Patients with a short history (<3 years) of polyps and inflammatory bowel syndrome were seen to suffer more from colorectal carcinoma establishing a solid relationship between them and the type of Gl cancer.

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