COLORECTAL CANCER
ASSOCIATION WITH LIFE STYLE

by

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Colorectal cancer is the second most common malignancy in western countries.

Considered a leading cause of death worldwide, accounting for 13% of all deaths reported in 2005. WHO

Although the overall prevalence of cancer is higher in developed nations, about 70% of all cancer deaths in 2005 occurred in low and middle-income countries.
Hereditary factors play a definite role, but approximately 70% of the risk of colorectal cancer can be related to environmental factors.

- Diets from animal sources that are low in fibers and high in fat
- Physical inactivity, high BMI, obesity
- Type 2 diabetes mellitus, hypertriglyceridaemia
- Alcohol and smoking
Screening tests:

- There are a numbers of screening tests
- If benign polyps discovered early and removed, someone will be much less likely to develop cancerous tumors
- These are suggested to be conducted for those over the age of 50 years old and earlier for those who have a family history of colon cancer.
1. Fecal occult blood test (FOBT):

- It is suggested to be conducted annually.
- Can reduce the risk of death from colorectal cancer by 15% - 33%.
- Also can be used in conjunction with an annual FOBT.

2. Flexible sigmoidoscopy:

- It is suggested to be conducted every 5 years.
- Can reduce the risk of death from colorectal cancer by approximately 60%.
- Also can be used in conjunction with an annual FOBT.
INTRODUCTON

3. colonoscopy:

This test is like the sigmoidoscopy but:

→ It is much longer and allows the doctor to examine the inside of the entire colon.

→ It is recommended to be conducted every 10 years

4. Other screening tests:

barium enema and digital rectal exam

Despite the fact that all of these effective screening tests exist for colorectal cancer it remains one of the leading causes of cancer deaths in the United States.
The aim of this case–control study was to investigate the association between certain socio demographic characteristics and lifestyle and colorectal cancer.
SUBJECTS & METHODS:

Sample

→ 64 colorectal cancer patients selected from the patients attending (Oncology and Nuclear Medicine Hospital), and also from Outpatient Department.

→ A group of 128 controls were selected from those attending Ibn Sinna Teaching Hospital.

→ All cases and controls were aged more than 20 years old, and controls were free from cancer.

Period

1 month (1 February 2013 – 1 March 2013)
Data collection:

- Questionnaires were used to collect data from cases and controls.
- The questionnaires filled by the members of the study group
- **BMI** of all patients and controls had been calculated by using the equation: $\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height}^2 (m^2)}$.

Statistical analysis

- Data analysis was done using **SPSS**, version 19.0.
- Analysis of risk factors was done by calculating **odds ratio** and their 95% Confidence Intervals.
The figure showing significant association between (sex) and colorectal cancer, where male appeared 1.4 time more risk to develop colorectal cancer than female.
The figure showing significant association between (age) and colorectal cancer. Those aged more than 30 years had 1.7 time more risk to develop colorectal cancer than others.
<table>
<thead>
<tr>
<th>Character</th>
<th>Cases= 64</th>
<th>Control=128</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Education level:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>illiterate\primary</td>
<td>30</td>
<td>46.9</td>
<td>54</td>
<td>42.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>34</td>
<td>53.1</td>
<td>74</td>
<td>57.8</td>
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<tr>
<td>Employment status:</td>
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<td></td>
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</tr>
<tr>
<td>employed</td>
<td>26</td>
<td>40.6</td>
<td>44</td>
<td>34.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>unemployed</td>
<td>38</td>
<td>59.4</td>
<td>84</td>
<td>65.6</td>
</tr>
</tbody>
</table>

The above table showing no significant association between (education level, employment status) and colorectal cancer.)
The figure showing that most of cases and controls were married and there was significant association between (marital status) and colorectal cancer.

OR = 2.3*
RESULTS

HISTORY OF DISEASE AMONG CASES

- **OR=2.6***
- **OR=0.6**
- **OR=2.8***

- GIT problems
- Radiation
- Smoking
- Family hx
The figure showing that 34.4% of cases were mainly on animal sources of food and there was significant association between (type of food) and colorectal cancer.

OR=5.06

Type of food among cases

- Combined: 7.3%
- Vegetarian: 0.9%
- Animal: 34.4%
<table>
<thead>
<tr>
<th>Character</th>
<th>Cases %</th>
<th>Control %</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>General level of physical activity:</td>
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<td></td>
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<tr>
<td>bedridden\mild</td>
<td>42.4</td>
<td>41.4</td>
<td>0.62</td>
</tr>
<tr>
<td>moderate\ high</td>
<td>57.6</td>
<td>58.6</td>
<td></td>
</tr>
<tr>
<td>BMI:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;24</td>
<td>48.4</td>
<td>62.5</td>
<td>0.6</td>
</tr>
<tr>
<td>≤24</td>
<td>51.6</td>
<td>37.5</td>
<td></td>
</tr>
</tbody>
</table>

The above table showing no significant association between (physical activity, BMI) and colorectal cancer).
DISCUSSION

• Our study showed that: 67.2% of cases were aged more than 30 years old, which is in agreement with the results of other studies that indicate that colorectal cancer tends to be more frequent in late middle-age populations in both sexes compared to other age groups.

• It is also showed that colorectal cancer occurred in male more than female, which is in agreement with other studies.

• Educational level appeared to be with no effect on the incidence of colorectal cancer and this not in agreement with other studies.
The majority of cases and controls were married, and this in agreement with other studies.

The results of this study showed a greater number of patients were unemployed (59.4%), which suggests that continuing stress coupled with unemployment might trigger colon cancer.

The present study showed that 51.6% of the cases had a family history of colorectal cancer, which is in agreement with other studies.

There was significant association between high fat diet and development of colorectal cancer and this is in agreement with other studies.
The present study showed that 42.4% of the cancer cases did not take regular exercise (but there was no significant association between physical activity and colorectal cancer); there is strong evidence from other studies that physical activity reduces the risk of colon cancer and it is highly efficient in prevention of other cancers.

Similarly, lack of physical activity or a sedentary lifestyle is associated with increased risk of colon cancer.

Physical activity reduces bowel transit time, which shortens the duration of contact between fecal carcinogens and colon mucosa.
There is evidence that obesity have been associated with higher risk of colorectal cancer, but not appeared in our study.

BMI was significantly higher among the control group. The explanation may be that: we depended on measuring the weight after the patients had diagnosed and they were in the advanced stages of carcinoma and this would reduce their weight, and therefore BMI.

It is still suggested that colorectal cancer prevention programmes should aim to reduce obesity both by encouraging regular exercise and consumption of diets rich in fibers, fruits, fresh vegetables and resistant starches.

Finally half of patients with colorectal cancer had history of GIT problems, and this in agreement with others.
CONCLUSION:

- The study concluded that both genetic and environmental factors had effects on the development of colorectal cancer.

- The study showed that colorectal cancer occurred more in middle to elderly age male, and in married more than in single.

- The study also suggested that family history, fatty diets, smoking, and history of gastrointestinal tract problems, all will increase the risk of development of colorectal cancer.
RECOMMENDATIONS:

- An education programme to enhance public awareness of the protective role of regular exercise and physical activity against colon cancer.

- Inclusion of active lifestyle education programmes in health promotion activities at primary health care centers.

- Screening for elderly patients with average risk factors for the disease.

- Additional studies including larger samples from different regions of Iraq to determine the relationship between socio demographic, lifestyle, and genetics with colorectal cancer risk.
شكر و عرفان:

شكر كل من قدم لنا الدعم والجهود في إعداد هذا البحث سواء ذكر اسمه أم لم يذكر وخاصة:

- الأستاذ الدكتور فارس بكر الصواف عميد كلية طب نينوى.
- الأستاذ الدكتور: طه حسن الصائغ رئيس فرع الجراحة في كلية طب نينوى، و الدكتور مؤيد عزيز العبدي أستاذ طب المجتمع لجهودهما القيمة في الإشراف على إعداد هذا البحث.
- كما وشكرنا الدكتور نبيل نجيب فاضل، أستاذ الطب الباطني على إرشاداته الفنية المميزة.
- الدكتورة مها عبد الجبار رئيسة فرع طب المجتمع.
- الدكتور باسم في مستشفى الأورام.
- الدكتورة شدي لمساعدتنا في الحسابات الإحصائية.

وأخيرا الشكر موصول لكل من أصحى إلينا...