

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



International Agency for Research on Cancer



TABRIZ-2018



# The Second International Congress of Updates on Prevention, Diagnosis and Treatments of GI Cancers

دومین کنگره بین المللی  
تازه های پیشگیری،  
تشخیص و درمان  
سرطان های دستگاه گوارش

تاریخ برگزاری:

۲۴ و ۲۵ مرداد ماه ۱۳۹۷

15-16 August 2018

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# Better treatments are needed

to improve survival in the second-line treatment of advanced gastric cancer and GEJ adenocarcinoma

**RAINBOW<sup>1</sup>**  
Combination therapy (n=665)

**Locally advanced or metastatic gastric cancer or GEJ adenocarcinoma**

With disease progression on or after 4 months of 1st-line platinum and fluoropyrimidine-based chemotherapy  
No prior paclitaxel use

**1:1 RANDOMIZATION**

Ramucirumab + paclitaxel\*\*† (n=330)      Placebo + paclitaxel\*\*† (n=335)

**PRIMARY ENDPOINT: OVERALL SURVIVAL**

**REGARD<sup>2</sup>**  
Monotherapy plus BSC (n=355)

**Locally advanced or metastatic gastric cancer or GEJ adenocarcinoma**

With disease progression on or after

- 4 months of 1st-line platinum or fluoropyrimidine-based chemotherapy or
- 6 months of adjuvant chemotherapy

**2:1 RANDOMIZATION**

Ramucirumab\*\*\*† + BSC (n=238)      Placebo + BSC (n=117)

**PRIMARY ENDPOINT: OVERALL SURVIVAL**

<b>HR (95% CI)=0.807 (0.678–0.962)</b>			
Stratified log rank p value=0.017			
	RAM + PTX	PBO + PTX	
Patients / Events	330 / 256	335 / 260	
Median (mos) (95% CI)	9.6 (8.5–10.8)	7.4 (6.3–8.4)	
6-month	72% (66–76)	57% (51–62)	
12-month	40% (35–45)	30% (25–35)	

<b>HR (95% CI) = 0.776 (0.603–0.998) p-value = 0.047</b>		
	Ramucirumab	Placebo
Patients / Events	238 / 179	117 / 99
Median (mos) (95% CI)	5.2 (4.4–5.7)	3.8 (2.8–4.7)
6-month OS	42%	32%
12-month OS	18%	12%

\*8 mg/kg IV every 2 weeks, or placebo, plus PTX (80 mg/m<sup>2</sup> days 1, 8, and 15 of a 4-week cycle); no prior paclitaxel use

\*\*8 mg/kg IV every 2 weeks or placebo

†Until disease progression, unacceptable toxicity, or death

BSC: best supportive care; GEJ: gastroesophageal junction.

1. Wilke H et al. *Lancet Oncol* 2014;15:1224–1235

2. Fuchs CS et al. *Lancet* 2014;383:31–39

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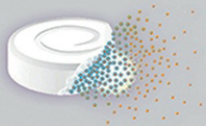
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- ابتلا به مشکلات و بیماری‌های کبدی، قلبی، الکترولیتی، عصبی و یا مغزی؛ فنیل کتونوری، فقر تغذیه و دیابت
- وجود سوابق بیماری‌های قلبی در افراد خانواده
- مصرف داروهای افزایش دهنده خطر ایجاد بی‌نظمی در ضربان قلب (طولانی‌کننده فاصله QT)

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### References:

DRUGS.COM  
GENERICHEALTH  
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# The Second International Congress of Updates on Prevention, Diagnosis and Treatments of GI Cancers

15-16 August 2018

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Dear Colleagues

It is a privilege and honor for us to organize the "The Second International Congress on Updates of Prevention Diagnosis and Treatment of GI Cancers". This congress greatly emphasizes health profession knowledge and attempts to provide an opportunity to identify the best international practices and evidence-based standards in a wide range of topics on updates of Prevention, Diagnosis, and Treatment of Gastrointestinal cancers.

Regarding the venue of the conference we might announce that Tabriz is one of the largest cities of Iran and the capital of East Azerbaijan province. It is an ancient city with a history going back to 2500 BC. Having some of most famous museums, holding few of the cultural events and harboring a couple of prestigious Iranian universities, the city is considered as a major hub for science and culture in Iran. Tabriz has also been selected as the "Capital of Islamic Tourism in 2018" by the Organization of Islamic Cooperation (OIC).

Your valuable attendance will increase the scientific level of this conference. Meanwhile, it will help you visit many of your colleagues in the field, get the latest updates and share mutual knowledge.



**Dr. Jalil**  
**Vaez-Gharamaleki**  
**Chairman**

خداوند سبحان را شاکریم که بر ما منت نهاد و یکسال دیگر حیات بخشید، و ما را به پوشیدن لباس اطاعت و بندگی در حوزه سلامت در خدمت به بندگان خود مفتخر فرمود.

عزیزان

همانطوریکه بر همه دانشمندان و علمای رشته پزشکی و شاخه های علوم پزشکی مرتبط روشن و مبرهن است در عرصه حاضر و قرن ۲۱ بزرگترین معطل در حوزه سلامت "بیماری سرطان" است که جان میلیون ها انسان را در جهان دچار مخاطره می نماید.

در کشور عزیزمان ایران، این مهد دلیران و سرزمین پاکان و گستره تربت شهیدان، سرطان های دستگاه گوارش مقام اول را دارد.

مرکز تحقیقات هماتولوژی و انکولوژی و مرکز تحقیقات بیماری های کبد و گوارش دانشگاه علوم پزشکی تبریز بر آن شد که برای دومین سال متوالی کنگره بین المللی سرطان های دستگاه گوارش در دانشگاه علوم پزشکی تبریز که دانشگاه قطب منطقه شمالغرب کشور است برگزار نماید.

اینک از همه دانشمندان و محققین بالینی تحقیقاتی در زمینه تازه های پیشگیری و غربالگری ، تشخیصی و مولکولار انکولوژی، و درمانی سرطان های دستگاه گوارش دعوت می شود که با حضور و ارائه تحقیقات ارزشمند خود بر غنای علمی این کنگره بیفزایند.



پیام دبیر علمی کنگره

پروفسور دکتر جلیل واعظ قراملکی

# Keynote Speakers



**Professor Dr  
Mohammad Hossein Somi , MD**  
Professor of Liver and Gastrointestinal  
Diseases Head of Tabriz University of  
Medical Sciences



**Dr Reza Malekzadeh, MD, AGAF**  
Professor of Medicine Deputy of  
Research Ministry of Health and  
Medical Education Honorary Chair of  
ICCPED



**Dr Behnoush Abedi-Ardekani**  
International Agency for Research on  
Cancer (IARC) France



**Arash Etemadi**  
MD PhD - Biosketch



**Dr Omer Dizdar**  
Hacettepe University - Turkey



**Dr Behrooz Z. Alizadeh**  
UMCG Groningen - Netherlands



**Dr.Roya Dolatkhan MD , PhD**  
Molecular Epidemiology of Cancer



**Dr Zohreh Sanaat ,MD**  
Medical Oncologist

# Executive Committee

دکتر جلیل واعظ قراملکی

دکتر زهره صناعت

دکتر رویا دولت خواه

خانم الناز قائمی راد

آقای مجید سید زمانی

# Scientific Committee

- |                               |                         |
|-------------------------------|-------------------------|
| دکتر منوچهر خوش باطن          | دکتر جلیل واعظ قراملکی  |
| دکتر یوسف بافنده              | دکتر رضا ملک زاده       |
| دکتر کوروش مسندی              | دکتر محمد حسین صومی     |
| دکتر یعقوب مودب               | دکتر اردشیر قوام زاده   |
| دکتر مسعود شیر محمدی          | دکتر جمال عیوضی ضیائی   |
| دکتر فرزانه اشرفی             | دکتر علیرضا نیکانفر     |
| دکتر رضا ملایری               | دکتر زهره صنعت          |
| دکتر امیر طاهر افتخارسادات    | دکتر علی اصفهانی        |
| دکتر شهریار هاشم زاده         | دکتر ناصر اقدام ضمیری   |
| دکتر مجید منتظری              | دکتر محمد حسین امامی    |
| دکتر فرزاد کاکائی             | دکتر صبا غفاری          |
| دکتر محمد بصیر ابوالقاسم فخری | دکتر داود آقامحمدی      |
| دکتر فرشاد سیدنژاد            | دکتر محدثه رجبی         |
| دکتر امیر قاسمی جنگجو         | دکتر محمد مهدی کوه شیار |
| دکتر محمد کاظم طرزمینی        | دکتر رضا خلیلی دیزجی    |
| دکتر رویا دولت خواه           | دکتر آرش اعتمادی        |
|                               | دکتر عمر دیزدار         |
|                               | دکتر سید هادی چاووشی    |
|                               | دکتر سعید دستگیری       |
|                               | دکتر مینوش مقیمی        |
|                               | دکتر بابک نجاتی         |

# Program

بنام خدا

دومین کنگره بین المللی تازه های پیشگیری، تشخیص و درمان سرطان های دستگاه گوارش

## The Second International Congress on Updates of Prevention Diagnosis and Treatment of GI Cancers 15<sup>th</sup> August 2018 - Tabriz University of Medical Sciences

Time	Subject	Speakers	Specialty
8-8:10	The Recitation of The Holy Quran, National Anthem of The Islamic Rep. of Iran	-	-
8:10-8:30	Welcome and General Introduction	-	-
<b>Board Committee: Prof. Dr. Malekzadeh - Prof. Dr. Vaez- Prof Dr. Gavamzadeh - Prof. Dr. Somi</b>			
8:30-8:40	Opening Remarks		
8:40-9:00	Epidemiology of GI Cancers in The Iran	Prof. Dr.Somi	Professor, Gastroenterologist
9:00-9:30	Burden and Control of Upper GI cancer in Iran	Prof. Dr. Malekzadeh	Professor, Gastroenterologist
9:30-9:50	Prevention of GI Cancers	Prof. Dr. Dastgiri	Epidemiologist
9:50-10:10	Molecular Epidemiology of GI Cancers	Dr. Etemadi (NCI/NIDH, USA)	Molecular Epidemiologist
10:10-10:30	Biomarkers in GI Cancers : Predict ability vs Causality in Personalized medicine	Dr B.Z. Alizadeh UMCG	Cancer Epidemiologist
10:30-10:45	Screening Protocols of GI Cancers	Dr Dolatkshah	Cancer Epidemiologist
10:45-11:00	Immunotherapy in GI Cancers	Dr. Shahmohammadi	Immunologist
11:00-11:15	Adverse Effect of GI Cancer Chemotherapy	Dr Ghaffari	Clinical Pharmacist
<b>Panel Discussion : Epidemiology of Gastrointestinal Cancers</b>			
11:15-11:30	Coffee Break		
<b>Board Committee: Prof Dr. Gavamzadeh - Dr. Etemadi - Prof. Dr. Eivazi- Dr. Bafandeh</b>			
11:30-11:50	New Approaches to Esophageal Cancers: Our Experience from Gholeshtan Cohort Study and IARC	Dr. Behnoush Abedi Ardekani (IARC/WHO, France)	Pathologist
11:50-12:10	Diagnostic Tools Available For Esophageal Cancer and Their Implications For An Appropriate Management	Dr. Masnadi	Gastroenterologist
12:10-12:30	Chemotherapy In Advanced and Metastatic Esophageal Cancer	Dr. Dizdar	Medical Oncologist
12:30-12:50	Surgery Treatments In Advanced and Metastatic Esophageal Cancer	Dr. Montazer	Thorax Surgeon
12:50-13:10	Radiotherapy In Advanced and Metastatic Esophageal Cancer	Dr. Ghasemi	Radiotherapist
13:10-13:30	<b>Panel Discussion: Esophageal Cancer</b>		
13:30-14:30	<b>Lunch Break/ Prayer</b>		
<b>Board Committee: Dr. Sanaat- Dr. Ardekani- Dr. Pourshams- Dr.Seyednejhad</b>			
14:30-14:50	Biological and Pathological Aspects of Gastric Cancer	Dr.Eftekharsadat	Pathologist
14:50-15:10	Neoadjuvant and Adjuvant Chemotherapy in Gastric Cancer	Dr. Khalili	Medical Oncologist
15:10-15:30	Treatment of Metastatic Gastric Cancers	Dr. Moghimi	Medical Oncologist
15:30-15:50	Surgery Modalities in Gastric Cancers	Dr. Hashemirasi	Surgeon
15:50-16:10	Radiotherapy Modalities on Gastric Cancers	Dr. Eghdamzamiri	Radiotherapist
16:10-16:30	Systemic therapy in Gastric Lymphoma	Dr. Malayeri	Medical Oncologist
16:30-16:50	<b>Panel Discussion: Gastric Cancer</b>		
16:50-17:10	<b>Coffee Break</b>		
<b>Board Committee: Dr. Malayeri- Dr. Aghamohammadi- Mrs Rajabi</b>			
17:10-17:30	Integrative Early Palliative Cares in GI Cancers	Dr. Malayeri	Medical Oncologist
17:30-17:50	Pain Management of GI Cancers	Dr. Aghamohammadi	Anesthesiologist
17:50-18:10	The Role of Psychologist and its Importance in Palliative Care	Dr.Rajabi	Psychologist

# Program

بنام خدا

دومین کنفرانس بین المللی تازه های پیشگیری، تشخیص و درمان سرطان های دستگاه گوارش

The Second International Congress on Updates of Prevention Diagnosis and Treatment of GI Cancers  
16th August 2018 - Tabriz University of Medical Sciences

Time	Subject	Speakers	Specialty
<b>Board Committee: Dr. Nikanfar- Dr. Hashemzadeh- Dr. Dizdar- Dr Kooshyar-Dr Ashrafi</b>			
8:30-8:50	<b>Novel Diagnostic Tools Available for Colorectal Cancer</b>	Dr. Shirmohammadi	Gastroenterologist
8:50-9:10	<b>Novel Surgery Approaches in Colorectal Cancer (CRC)</b>	Dr. Hashemzadeh	Surgeon
9:10-9:30	<b>Chemotherapy in Colorectal Cancer (Adjuvant and Neoadjuvant)</b>	Dr. Dizdar (Hajat tape University, Ankara)	Medical Oncologist
9:30-9:50	<b>New Targeted Therapy in CRC</b>	Dr. Esfahani	Medical Oncologist
9:50-10:10	<b>Radiotherapy in The Adjuvant and Neoadjuvant Setting in Rectal Cancer</b>	Dr. Naseri	Radiotherapist
10:10-10:30	<b>Panel Discussion: Colorectal Cancer</b>		
10:30-10:50	<b>Coffee Break</b>		
<b>Board Committee: Dr. Emami - Dr. Chavoshi- Dr. Tarzmani- Dr. Khoshbaten</b>			
10:50-11:10	<b>Novel Diagnostic Approaches in Primary and Secondary Hepatic Cancers</b>	Dr. Khoshbaten	Gastroenterologist
11:10-11:30	<b>Radiological Approaches in Primary and Secondary Hepatic Cancers</b>	Dr. Tarzmani	Radiologist
11:30-11:50	<b>Systemic Treatment Decisions in Hepatic Cancers</b>	Dr. Eslampour	Gastroenterologist
11:50-12:10	<b>Surgery and Transplant Modalities in Hepatic Cancers</b>	Dr. Kakayi	Surgeon
12:10-12:30	<b>Panel Discussion : Liver Cancer (HCC)</b>		
12:30-14	<b>Lunch Break/ Prayer</b>		
<b>Board Committee: Dr. Dolatkah - Dr. Ghaffari- Dr Esfahani</b>			
14-14:20	<b>Diagnostic Approaches in Biliary Duct and Pancreas Malignancies</b>	Dr. Moaddab	Gastroenterologist
14:20-14:40	<b>Surgical Approach for Patients With Pancreatic Cancer</b>	Dr. Fakhri	Surgeon
14:40-15	<b>Chemotherapy in Pancreatic Cancer</b>	Dr. Ashrafi	Medical Oncologist
15-15:20	<b>Panel Discussion: Pancreatic Cancer</b>		
15:20-15:40	<b>Coffee Break</b>		
<b>Board Committee: Dr. Kakayi- Dr. Moghimi- Dr. Khoshbaten- Dr Khalili</b>			
15:40-16	<b>Novel Surgery Modalities of GIST</b>	Dr. Mehdinavaz	Surgeon
16-16:20	<b>Pathology and Diagnosis of GIST</b>	Dr. Vahedi	Pathologist
16:20-16:40	<b>Novel Approaches in the GIST Treatment</b>	Dr. Asghari	Medical Oncologist
16:40-17	<b>Gastrointestinal NET Pathology</b>	Dr. Halimi	Pathologist
17-17:20	<b>Gastrointestinal NET Treatment</b>	Dr. Sanaat	Medical Oncologist

## **Application of complementary medicine in Gastrointestinal cancer**

Mehdi Harorani\*1 Mohamad Golitaleb1 Fahime Davodabadi 1 Sima Zahedi1

Arak University of medical Sciences, Faculty of Nursing and Midwifery, Arak, Iran.

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Arak, Iran,  
e-mail: m.harorani@yahoo.com

**Introduction:** Cancer has become major public health problem worldwide and is the second leading cause of death in the United States And the third cause of death in Iran. Thus, attempts for physical and psychological rehabilitation of these patients are of great importance. This study has been conducted in order to study Investigation on the effectiveness complementary medicine in Gastrointestinal cancer.

**Background and aim:** Today, the use of complementary medicine in patients is more than in the past. but safety and its efficacy are not well known. Therefore, in this study, the use of complementary medicine in Gastrointestinal cancer has been studied.

**Materials and methods:** This study is an overview study which has been used to access information from related articles and studies, library resources, web sites Google, Science Direct and other resources.

**Findings:** The result of studys show that complementary medicine could provide new approaches in various fields of medicine, And most studies revealed that using of complementary medicine in improve the symptoms of patients with gastrointestinal cancer has been effective.

**Conclusion and discussion:** Since the complementary medicine is non-invasive treatment and its implementation does not require any equipment, time or place can lead to the consideration of the relationship between medical staff and patients also reduces the final cost of treatment.

**Keywords:** complementary medicine, Gastrointestinal, cancer

# Assessment of the Frequency of Stomach Cancer Risk Factors in Ardabil

Ahmad Vahednasiri\*1

1.Bs student of operating room, Student Research Committee, Maragheh University of Medical Sciences, Maragheh, Iran. Email: ahmad.vahednasiri@yahoo.com

**Background:** Stomach cancer is the fourth most common cancer in the world and the second most common cause of cancer deaths. The aim of this study was to the assessment of the frequency of stomach cancer risk factors in Ardabil

**Methods:** In this systematic review, the keywords of cancer, risk factors, stomach, and Ardabil were searched in the title and abstracts of published articles in Iranian authoritative scientific databases such as SID and Magiran. Interactive Persian language descriptive and interventional studies in the field of risk factors such as lifestyle, smoking, age, sex, Helicobacter pylori infection and nutrition, were performed on stomach cancer patients in the target population; by two researchers and separately was investigated and the required information has been extracted.

**Results:** In this study, 42 articles were obtained that after reviewing the abstracts of eligible articles, finally, 13 articles were selected for community review and data mining. The results showed that the incidence of stomach cancer in men, more than women. Helicobacter pylori infection, genetic background and environmental factors such as nutrition, health level, tobacco, each one of these is a risk factor for stomach cancer and also each of these factors affects other factors. So that, undesirable nutrition increase inflammation effect of bacteria and on the other hand, the presence of genetic background in the individual will be effective on mild inflammation leading to ulcers, atrophy, and ultimately malignancy and cancer.

**Conclusion:** Delay in diagnosis, the complexity of therapeutic and prevention methods of stomach cancer due to the simultaneous interference of infectious agents, genetic background and inflammatory response of the body in front of them. Therefore, improve the nutritional status and development of the person-centered medical is necessary for diagnostic and therapeutic methods of this cancer.

**Key words:** Cancer, Risk factors, Stomach, Ardabil

# **Estimation of Survival and Determination of Factors Related to the Survival of Patients with Gastric Cancer in Khorramabad**

Ahmad Vahednasiri\*1

1. Bs student of operating room, Student Research Committee, Maragheh University of Medical Sciences,  
Maragheh, Iran.

Email: ahmad.vahednasiri@yahoo.com

**Background:** Estimation of the survival rate of cancer patients after diagnosis is one of the important therapeutic indicators. The aim of this study was to determine the survival rate and its effective factors in patients with gastric cancer.

**Methods:** In this descriptive and analytical study, 349 patients with gastric cancer who were referred to hospitals for treatment were examined. The effect of variables such as gender, age, the grade of tumor cell differentiation, location of involvement, type of auxiliary treatment, tumor size and body mass index, histology of disease and presence of liver metastasis on the lifespan of patients with using Cox hazards model with controlling the effect of potential confounders and regression model was evaluated. The survival rate was calculated using the non-parametric Kaplan Meier method and compared with the Wilcoxon test. Data were analyzed using SPSS version 19 software.

**Results:** The patients included 219 men and 130 women. Overall, more than half were reported cases of tumors in the proximal region. Histologically, tumors of the intestinal were more likely to survive, and subsequently, the patients undergoing surgery had more survival life. Variables such as gender, place of residence, history of gastric cancer in the first degree relatives, history of gastrointestinal symptoms, cigarette, and mental illness during treatment, had no significant effect on the mean survival time. Cox proportional hazards model showed that diagnosis in the primary and final stages of the disease, receiving radiotherapy, age, chemotherapy time, grade of tumor cell differentiation and body mass index had a significant relationship with the survival of patients.

**Conclusion:** The implementation of the early detection program at an early stage, through general education in high-risk groups such as farmers, ranchers, and nomads, led to a more survival of these patients than other patients, as well as regular referral, prevention, and treatment, is the best way to achieve recovery and raise the survival of patients.

**Key words:** Cancer, Stomach, Survival rate, Related factors

## Response assessment colorectal cancer using PET/CT

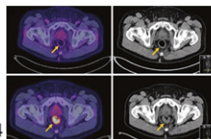
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Colorectal cancer was the third most common cancer in men and women in 2008 and is the third leading cause of cancer-related deaths in the United States. Management of Colorectal Cancer, surgery is the mainstay of treatment of localised colorectal cancer. For colonic cancer, adjuvant chemotherapy is usually recommended only for locally advanced colon cancer patients after surgery. To assess response to treatment, currently, none of the imaging modalities (ERUS, MRI, CT) can reliably predict a complete remission. Molecular imaging with 18F-FDG PET has been shown to be useful in the management of colorectal cancer. 18FFDG PET already plays a pivotal role in staging before surgical resection of locally recurrent cancer and metastases, in the localization of recurrence in patients with an unexplained rise in serum carcinoembryonic antigen levels, and in the assessment of residual masses after treatment. This diagnostic tool seems to be very promising for therapy stratification as well. This technique could be an asset for improving patient care by reducing the effort, costs, and morbidity associated with ineffective treatment in nonresponders. The available studies on chemotherapy response monitoring in advanced colorectal cancer and on preoperative radiotherapy and multimodality treatment response evaluation in primary rectal cancer indicate that 18F-FDG PET is a significant predictor of therapy outcome in both situations. In primary rectal cancer, 18F-FDG PET is applicable after neoadjuvant treatment in a preoperative setting (important for the preoperative selection for an individually tailored surgical approach) and correlates better with pathology than morphologic imaging modalities. Interestingly, when 18F-FDG PET is able to predict the final outcome, it may be used to guide adjuvant chemotherapy for rectal cancer after optimal neoadjuvant and local treatments. 18F-FDG PET could play a central role in optimizing the use of local ablative treatment of liver metastases because it recognizes, at early times, incomplete tumor ablation that is not detectable by CT. 18F-FDG PET could play a pivotal role in determining the need for further investigations and in guiding the reading of CT scans; the interpretation of the latter alone at early times after local ablative therapy appears to be difficult. Furthermore, 18FFDG PET may be helpful in shortening the duration of early clinical trials assessing new antineoplastic agents. Therefore, therapy response assessment with 18F-FDG PET remains a very worthwhile research topic. The reported findings call for systematic implementation in randomized trials comparing PET-controlled strategies to adequately position 18F-FDG PET in treatment time lines. Several ongoing studies are testing if 18FDG-PET/CT is any better than MRI and/or if the combination of 18FDG-PET/CT and MRI could be more reliable than each modality alone (Fig). In line with the advancement of radiotherapy techniques, another area of clinical interest is if advanced imaging technologies such as functional MRI or PET/CT with either 18FDG or other tracers such as 18FLT or 18FMISO could help identify relatively radioresistant tumor components so as to local intensification of radiotherapy could be deployed to achieve higher rates of disease control without unacceptable toxicity.

Keywords: PET/CT, Response assessment, Colorectal cancer



18FDG-PET/CT performed 4 months after radiotherapy demonstrates a true complete pathological response in a low rectal cancer patient

## **Follow-up Colorectal cancer after initial treatment**

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After curative treatment of colorectal cancer (CRC), patients are at risk of developing metastatic disease, and they are also at a higher risk of developing a second primary CRC than the general population. The aim of follow-up is therefore the detection of second primary tumors in the colon and of resectable recurrent disease, as the 5-year survival of patients with resectable liver or lung metastases is 40–30%. Colonoscopy should be performed every 5–3 years after surgery. In patients with rising carcinoembryonic antigen (CEA) and non-detectable disease on CT, fluorodeoxyglucose–positron emission tomography (FDG-PET) scanning can be considered. The latter appears particularly effective in locating recurrences that may be missed by CT or MRI. Immunoscintigraphy can be helpful in locating metastases when serum CEA levels rise. If there was no effective treatment for metastases or local recurrence, it could be argued that minimal follow up is all that is necessary and that if recurrence occurs the symptoms should be treated palliatively. Advances in imaging, surgical technique and supportive measures have probably improved this. Results with liver metastases are best when there is a solitary liver deposit, but multiple deposits can be resected, with long-term survival. The survival benefits of chemotherapy for metastatic disease are greatest when deposits are detected and treated at an early stage. Therefore, there is a strong case for early detection of either resectable or unresectable recurrence. Intensive follow-up can usually detect recurrence before it produces symptoms. Monthly serum CEA measurements predict clinically evident recurrence by an average of 6 months in about 60% of patients and trigger other investigations or exploratory laparotomy. Routine chest radiographs, liver ultrasound and abdominal CT and colonoscopy are also used for early detection. A regimen of bi-annual spiral CT with intravenous contrast for 2 years is recommended. Immunoscintigraphy can be helpful in locating metastases when serum CEA levels rise. FDG-PET appears to be particularly effective in locating recurrences that may be missed by CT or MRI.

Key words: Colorectal cancer, Follow-up, Initial treatment

## **Role of PET/CT in primary diagnosis and staging colorectal cancer**

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Colorectal cancer (CRC), also called bowel cancer, is the third most common cancer in both males (%14 of the male total) and females (%11) in the UK. In 2011, there were 41,581 new cases of bowel cancer in the UK. It is the second most common cause of cancer death in the UK, accounting for %10 of all deaths from cancer. The overall predicted -5year survival rate is %59 for patients diagnosed with bowel cancer during 2011–2010 in England and Wales. Worldwide, it is also the third most common cancer, with more than 1,360,000 new cases diagnosed in %10) 2012 of the total). To conventional morphological imaging modalities such as CT, ultrasound and MRI, 18FDG-PET/CT plays instrumental roles in several areas critical for the optimal management of colorectal cancer. For routine staging of colon or rectal cancer, complete colonoscopy and CT of the chest and abdomen are required. In addition, pelvic MRI should be performed for all rectal cancer patients for better local disease delineation. 18FDG-PET/CT is not required unless CT detects synchronous liver metastases, and the patient could be considered for curative liver surgery as 18FDG-PET/CT is more sensitive than CT to rule out extrahepatic metastases. 18FDG-PET/CT should also be performed if staging CT or MRI scan detects nodal metastases in the common iliac region or equivocal findings such as indeterminate pulmonary, liver or bony lesions. 18FDG-PET/CT is not required if other imaging modality, for example, CT, has already demonstrated widespread metastatic disease and the patient would not be eligible for radical treatment. Finally, the future perspectives in functional imaging evaluating the role of integrated FDG-PET/CT with perfusion CT, MRI spectroscopy of primary CRC and hepatic transit time analysis using contrast enhanced ultrasound and MRI in the detection of liver metastases. Validation of these newer imaging techniques may lead to significant improvements in the management of patients with colorectal cancer.

Key words: PET/CT, Colorectal cancer, Diagnosis.

# **The relationship between spiritual well-being and resilience in caregivers of patients in final stages of cancer**

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**Introduction:** Regarding to the increasing number of cancer patients and the disabling nature of this disease and its related treatments, in addition to the formal health care system, the permanent members of the family and close friends are responsible for taking care of patients to meet their needs. In recent years one of the variables that has become a very important mediator to prevent or develop a large part of psychiatric disorders is “resilience”. In this regard, spiritual well-being is one of the basic concepts about how to deal with the problems and the stress of the disease. The purpose of this study was to investigate the relationship between spiritual well-being and resilience in caregivers of patients with cancer at the final stages of the disease.

**Method:** The statistical population of the present study included all caregivers of advanced cancer patients in Alla Cancer Control Center from March 2016 to July 2017. Based on Tabachnich and Fidel formula ( $N > 8 + 50M$ ), 122 subjects were selected randomly as sample size. The data were collected using the Paloutzian and Ellison Spiritual Health Questionnaire and the Connor-Davidson Resiliency Questionnaire.

**Results:** Findings showed that spiritual well-being and resiliency have a significant and positive relationship among caregivers of cancer patients (0.63) and %40 of changes in resiliency are predictable due to spiritual well-being.

**Conclusion:** The present study shows that paying attention to spiritual health as a protective factor for caregivers increases their resilience. The results of these study provide a good route for psychologists in the field of health to increase mental health in caregivers of cancer patients. Undoubtedly, the increase in spiritual and resilient health in caregivers who have the most interaction with patients and are close to them, will lead to an increase in the quality of life in these patients and thus to resist and control the disease.

**Keyword:** Cancer, Spiritual Health, Resilience, palliative care.

# رابطه سلامت معنوی با تاب آوری در مراقبین بیماران مبتلا به سرطان در مرحله ی انتهایی

امیرحسین توانایی ۱، رضا ملایری ۲

مقدمه: با توجه به افزایش بیماران مبتلا به سرطان و ماهیت ناتوان کننده ی بیماری و درمان های مربوطه، برای رفع نیازهای این بیماران علاوه بر نظام های رسمی خدمات بهداشتی، اعضای دائمی خانواده و دوستان نزدیک وظیفه مراقبت از بیماران را به عهده دارند. یکی از متغیرهای که در سال های اخیر که نقش میانجی بسیار مهمی در جلوگیری یا بروز بخش عظیمی از اختلال-های روان پزشکی دارد تاب آوری است. در این راستا سلامت معنوی نیز یکی از مفاهیم اساسی پیرامون چگونگی رویارویی با مشکلات و تنش ناشی از بیماری محسوب می گردد. در پژوهش حاضر با هدف رابطه بین سلامت معنوی با تاب آوری در مراقبین بیماران مبتلا به سرطان در مرحله ی انتهایی بیماری انجام شده است.

روش: جامعه آماری پژوهش حاضر شامل کلیه مراقبین بیماران مبتلا به سرطان پیشرفته مرکز کنترل سرطان آلا در زمان اسفند ۱۳۹۵ الی تیر ۱۳۹۶ است. که براساس فرمول تاباچنیک و فیدل ( $AM+50 < N$ ) ۱۲۲ نفر به روش تصادفی ساده به عنوان حجم نمونه انتخاب شدند. جمع آوری داده ها با استفاده از پرسشنامه سلامت معنوی پولوتزین و الیسون و پرسشنامه تاب آوری کونور - دیویدسون انجام گردید. یافته ها: یافته ها نشان داد که سلامت معنوی و تاب آوری در مراقبین بیماران مبتلا به سرطان با هم رابطه معنادار و مثبتی دارند (۰/۶۳) و ۴۰٪ از تغییرات در تاب آوری به واسطه سلامت معنوی قابل پیش بینی است.

بحث و نتیجه گیری: پژوهش حاضر نشان می دهد توجه به سلامت معنوی به عنوان یک عامل حفاظتی مراقبین موجب ارتقای تاب آوری آنان می شود. نتایج این مطالعات مسیر مناسبی را برای روانشناسان حوزه سلامت در جهت افزایش سلامت روانی در مراقبین بیماران مبتلا به سرطان ایجاد می کند. بدون شک افزایش سلامت معنوی و تاب آوری در مراقبین که بیش ترین ارتباط و تعامل را با بیماران دارند، افزایش کیفیت زندگی در این بیماران و در نتیجه مقاومت در برابر بیماری و مقابله با آن را به دنبال دارد.

- ۱ کارشناس ارشد روانشناسی بالینی، روانشناس بخش طب تسکینی، مرکز کنترل سرطان الا، تهران، ایران.
- ۲ فوق تخصص هماتولوژی انکولوژی، بخش طب تسکینی، مرکز کنترل سرطان الا، تهران، ایران.

کلید واژه: سرطان، سلامت معنوی، تاب آوری، طب تسکینی.

## بررسی تاثیر استروژن بر پیشگیری از سرطان کولون در زنان یائسه

فاطمه سراجی - ۲ فاطمه سهران ۳ کوثر خدادادی

دانشجوی کارشناسی مامایی - دبیر کمیته تحقیقات دانشجویی - دانشگاه آزاد اسلامی واحد

خوراسگان (اصفهان) - اصفهان - ایران

کارشناس ارشد مشاوره در مامایی - مربی دانشکده پرستاری مامایی - دانشگاه آزاد اسلامی واحد

خوراسگان (اصفهان) - اصفهان - ایران

دانشجوی کارشناسی مامایی - دانشگاه آزاد اسلامی واحد خوراسگان (اصفهان) - اصفهان - ایران

مقدمه و هدف: سرطان کولون بزرگ سومین سرطان شایع دنیا و دومین علت مرگ بین سرطان هاست و یکی از سرطان هایی است که قویا تحت تاثیر فاکتور های محیطی می باشد. هورمون های زنانه بخصوص استروژن به عنوان یکی از فاکتور های مرتبط با این سرطان شناخته شده که می تواند سبب کاهش بروز سرطان ها از جمله سرطان کولون شود. این مقاله مروری با هدف بررسی تاثیر استروژن بر پیشگیری از سرطان کولون در زنان یائسه طراحی گردید.

روش کار: این مقاله مروری با بررسی ۵۰ مقاله از سایت های ، Pubmed, Google scholar, Web of science, Since direct, Scopus, Magiran, Sid، با کلمات کلیدی سرطان کولون، استروژن، یائسگی از سال های ۲۰۰۰ تا ۲۰۱۸ انجام شد.

یافته ها: اثرات آنتی پرولیفراتیو فیتواستروژن ها در مطالعات آزمایشگاهی ثابت شده است و شواهد نشان می دهد انترولاکتون و انترودیول رشد سلول های سرطانی را به اندازه ۱۸\_۳۰ درصد مهار می کند. در دوران یائسگی میزان استروژن در محیط کم است و فیتواستروژن ها اثرات استروژنی خود را قوی تر ارائه می نمایند بنابراین در کاهش علائم یائسگی موثر بوده و هم چنین موجب کاهش بروز سرطان ها از جمله سرطان کولون می شوند. همچنین نتایج مطالعات مختلف نشان داده است که زنان زیر ۵۰ سال، ۵۰ درصد کمتر از مردان در معرض خطر مرگ ناشی از سرطان کولون قرار دارند اما زنان بالای ۵۰ سال ۳۸ درصد بیشتر از مردان در معرض خطر مرگ بر اثر این بیماری بودند که در این راستا یافته ها نشان می دهد که مصرف هورمون استروژن و پروژسترون در خانم های یائسه، سبب کاهش ابتلا به سرطان کولون می شود که این موضوع نیز نقش محافظتی استروژن بر سرطان کولون را مطرح می نماید.

بحث و نتیجه گیری: نتایج نشان می دهد هورمون زنانه استروژن نقش محافظتی بر پیشگیری از سرطان کولون در زنان یائسه دارد.

کلمات کلیدی: سرطان کولون، استروژن، یائسگی

## بررسی چگونگی تاثیر استروژن بر جلوگیری از پیشرفت سرطان کولون

افاطمه سراجی - ۲ فاطمه سهران

دانشجوی کارشناسی مامایی- دبیر کمیته تحقیقات دانشجویی- دانشگاه آزاد

اسلامی واحد خوراسگان(اصفهان)- اصفهان- ایران

کارشناس ارشد مشاوره در مامایی- مربی دانشکده پرستاری مامایی- دانشگاه آزاد

اسلامی واحد خوراسگان(اصفهان)- اصفهان- ایران

مقدمه و هدف: سرطان کولون بزرگ سومین سرطان شایع دنیا و دومین علت مرگ بین سرطان هاست و یکی از سرطان هایی است که قویا تحت تاثیر فاکتور های محیطی می باشد. هورمون های زنانه بخصوص استروژن به عنوان یکی از فاکتور های مرتبط با این سرطان شناخته شده که می تواند سبب کاهش بروز سرطان ها از جمله سرطان کولون شود. این مقاله مروری با هدف بررسی چگونگی تاثیر استروژن بر پیشگیری و همچنین جلوگیری از متاستاز سرطان کولون طراحی گردید

روش کار: این مقاله مروری با بررسی ۶۰ مقاله از سایت های Pubmed, Google scholar, Web of scienc, Scopus, Magiran, Sid, , Since direct, استروژن، سرطان کولون، ER $\beta$ ، از سال های ۲۰۰۰ تا ۲۰۱۸ انجام شد

یافته ها: ارتباط معناداری بین استروژن و سرطان کولون وجود دارد. ارتباط رسپتور های استرادیول، پروژسترون، دهیدرو تستسترون با تومور های اولیه سرطان کولون مشخص شده است این رسپتور ها نقشی در پاتوژنز سرطان کولون ایفا می کنند. رشد سلول های سرطان کولون در بررسی آزمایشگاهی به وسیله اضافه کردن استرادیول به میزان ۳۰-۱۵ درصد مهار شده است. مشخص شد که بیوکائین و آوژنیستین رشد سلول های سرطانی کولون را مهار می کند، این مهار رشد سلول از طریق فعال سازی می تواند تکثیر سلول های سرطان روده بزرگ را افزایش دهد. ER- $\alpha$  آپوپتوزیس اتفاق می افتد. گیرنده دارد و باعث آپوپتوز سلول های سرطانی روده بزرگ ER- $\alpha$  اثر متفاوتی نسبت به گیرنده ER- $\beta$  گیرنده ۵۳ تنظیم و متاستاز را سرکوب می P و آپوپتوز را از طریق اثر بر سیگنال DNA تنظیم ER- $\beta$  می شود هم چنین می تواند منجر به کاهش مهاجرت سلولی CRC در سلول های ER- $\beta$  کند. بیان بیش از حد شود.

ER $\beta$  بحث و نتیجه گیری: نقش محافظتی استروژن ها در سرطان کولون بزرگ به طور عمده به گیرنده وابسته است. این یافته ها نشان می دهد که ارتباط مسیر های استروژن در زیست شناسی سرطان روده بزرگ ممکن است راه های درمانی نوین را در این زمینه ها مورد بررسی قرار دهد ER $\beta$  کلمات کلیدی: سرطان کولون، استروژن، ، گیرنده

## **Colorectal cancer screening with Barium Enema**

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Colorectal cancer is one of the most common and serious cancers. Accepted screening measures include testing for fecal occult blood, barium enema, flexible sigmoidoscopy, and more recently, colonoscopy. A successful screening test should be inexpensive, safe, easy to perform, well accepted by consumers and providers, sensitive (identify persons with the disease in question), and specific (exclude persons lacking disease). No prospective randomized trial of air contrast barium enema (ACBE) has been conducted in average-risk populations. ACBE has been shown to be at least %70 sensitive for identifying large polyps and cancer. Despite the absence of definitive, prospective data, the long history of clinical application of ACBE has earned this modality a place in the recommendations of authoritative groups (American Cancer Society, American Gastroenterology Association, American College of Gastroenterology, and others). As an adjunct to the National Polyp Study (colonoscopy follow-up of patients after adenoma polypectomy), paired ACBE and colonoscopy was performed in nearly 600 subjects as follow-up after endoscopic polypectomy. If colonoscopy is taken as a "gold standard," ACBE was %32 sensitive for the detection of polyps up to 5 mm, %53 sensitive for the detection of -6 to -10mm polyps, and %48 sensitive for the detection of polyps larger than 10 mm. In fact, colonoscopy did miss a small number of adenomas. Overall, colonoscopy was considered superior. It should be emphasized that the population was by no means average risk. Although by definition all subjects were regarded as at high risk by virtue of their adenoma history, all had already undergone removal of these adenomas at least once, perhaps rendering these patients at low risk.

Keywords: Colorectal cancer, Screening, Barium Enema

# Use of angiotensin-converting enzyme inhibitors and angiotensin receptor blockers and colorectal cancer : A meta analysis

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## Abstract

**Background:** colorectal cancer (CRC) is the fourth leading cause of cancer-related morbidity and mortality. Angiotensin-converting enzyme inhibitor (ACEI) and angiotensin receptor blocker (ARB), which are currently used for cardiovascular disease have a favorable role in the development and progression of CRC.

**Method:** We searched databases such as EMBASE, PubMed and the Cochrane library to finding clinical studies that explain the association between ACEIs/ARBs therapy and risk of CRC incidence or survival of CRC patients. Pooled risk ratio (RR) and hazard ratio (HR) with 95 % confidence intervals were considered for the association between ACEIs/ARBs and CRC risk and mortality.

**Results:** Meta- analysis showed risk of new cancer significantly decreased for patients randomized to use ACEIs/ARBs compared with patients randomized to use controls (RR %95 ,0.962 CI 0.991-0.934, p = 0.010). Patients with CRC that used ACEIs/ARBs had a decreased mortality compared to non used patients (HR %95 ,0.833 CI 1.085-0.640, p = 0.175).

**Conclusion:** This meta- analysis shows ACEIs/ARBs therapy improved CRC survival and decreased mortality on patients with CRC.

**Key words:** Colorectal cancer, Angiotensin- converting enzyme inhibitor, Angiotensin receptor blocker

# **MicroRNAs; as important regulators in Metastatic colorectal Cancer**

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MicroRNAs (miRNAs) have emerged as a novel class of endogenous, small, noncoding RNAs that regulate the gene expression negatively through controlling degradation or translational of the target mRNAs. Since Individual miRNAs are able to control the expression some of the genes via binding to the regulation sites with appropriate complement, they have been introduced as a vital transcription factor in the studies. Also, miRNAs could be the pivotal regulators in the normal development and physiology, as well as disease states, including cancers such as colorectal cancer. Considering multi-functional of miRNAs, they can participate in different cellular processes, such as apoptosis, cell differentiation, tumorigenesis, metastasis and angiogenesis. The profiling of miRNA-expression in human cells is considered as clear signatures related to the diagnosis, prognosis, progression, staging, and response to treatment. Furthermore, it is identified as an effective method to understand the role of miRNA genes in the activation of oncogenic pathways or protein-coding genes in the downstream targets. This review provided rewarding information about the role of miRNAs in metastasis, also discussed about their potential use as biomarkers and/or therapeutic targets in colorectal cancer.

## Discussion and Results :

In this review, we have summarized the roles of miRNAs in cancer biology, with a particular focus on colorectal cancer and the function of this micro RNAs in metastasis and invasion and EMT of colorectal cancer cells. According to the literatures on multiple roles of different miRNAs in colorectal cancer, it can be suggested that future studies on the expression profile of different miRNAs including in colorectal cancer and its relationship with the tumor type would open promising ways into more accurate diagnostic procedures which in turn would decrease the mortality rate of the disease through faster disease diagnosis.

Keywords: colorectal Cancer- MicroRNAs- biomarkers

## **Inhibition of the proliferation of certain cancerous cells And the effect of oleoropine on the expression of the DNA of methyl transferase (DNMT)**

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**Background:** The cytosine methylation in the CpG islets in the promoturgeon region is an important mechanism in regulating the expression of genes, and this arrangement can play a role in the developmental and evolutionary stages and, by binding to TLR9, produces IL12, and produces IFN gamma that results in stimulation Cytotoxicity of NK cells, or after evolution, can be a factor in silencing the expression of genes, especially in some cancer cells.

**Materials and Methods:** In the Pancreatic cancer cells, the most important marker for the methylation of the promoter is the CA9-19 gene. In this study, different concentrations of nano-oleoropin on the expression of the gene expression in DNMT were investigated using Real Time PCR.

**Results:** The results showed that the relative expression of DNMT1 gene was significantly reduced by the action of 31 ppm nano-oleoropine in the Pancreatic cancer cell line.

**Conclusion:** Obviously, by reducing the expression of the MT gene, methylation can be reduced, and the expression of exonenced genes may be re-performed.

**Key words:** Pancreatic cancer- DNMT- Oleoropin- CA9-19

## **Epidemiology and trend of gastrointestinal cancers mortality in Ardabil – Iran**

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**Introduction & Aim:** Cancers are one of the leading causes of death worldwide, and gastrointestinal cancers are one of the main leading causes of death. An increase in the life expectancy and population ageing are among the most important causes of cancer and its associated death. The aim of this study was to determine the epidemiology and trend of gastrointestinal cancers in Ardabil province in northwest of Iran.

**Methods:** This study was carried out using the death records registered at the Health Deputy of Ardebil University of Medical Sciences from 2011 to 2015 based on ICD10-. The death process was assessed for a total of five years and based on its age, gender, and seasonal distribution. **Results:** %64.3 and %35.7 of the total 2036 deaths occurred in the male and female population, respectively during the five-year period in Ardabil province. Gastric cancer also accounted for the highest percentage of death caused by gastrointestinal cancers (%56.3). A total of %49 and %51 of the deceased lived in the urban and rural areas, respectively. The majority of participants were in the over65- age group. Gastrointestinal cancer-related death cases have been growing over the course of five years, but there was no significant difference in terms of seasonal distribution.

**Discussion:** Considering that cancer is the second leading cause of death in Ardebil province and gastrointestinal cancers is the first cause of death caused by cancers, it seems necessary to take steps to teach the ways of preventing and avoiding risk factors and carry out screening tests so as to diagnose the disease at in early stages.

**Keywords:** Gastrointestinal Cancers, Mortality, Ardabil Province, Epidemiology

## **The challenge of gene therapy for liver cancer**

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Liver cancer is one of the most important health problems worldwide, due to its high incidence and remarkable resistance to conventional treatments. Potentially curative therapies such as liver transplantation and surgical resection can only be applied to a minority of subjects because of advanced disease at the time of diagnosis and the lack of suitable organ donors. Recent advances in gene therapy (GT), together with new radiotherapy and immunotherapy techniques have opened new possibilities for treatment of liver cancer. Since many viral and non-viral vectors have a marked hepatic tropism, the liver is especially amenable to GT approaches. The application of gene transfer technologies to the treatment of cancer has led to new possibilities for the delivery of gene therapy vectors into hepatic tumors, increasing the effective dose and minimizing potential side effects derived from non-target cell transduction. Besides, the development of new experimental approaches like gene directed enzyme/prodrug therapy, inhibition of oncogenes and restoration of tumor-suppressor genes have synergistic effects when combined with chemotherapy, immunotherapy, anti-angiogenic therapy and virotherapy. These new therapy strategies are evaluated for the treatment of primary and metastatic liver cancer and some of them have reached clinical phases. An obstacle for the clinical application of most gene therapy approaches is the cost and technical difficulties for the large scale production of the vectors. Further, the solid tumors such as hepatocellular carcinoma present an aberrant tissue organization with abundant extracellular matrix, necrotic areas, heterogeneous blood flow and high interstitial pressure. Despite all these difficulties, gene therapy may play an important role as an adjuvant of other standard or experimental treatments against liver cancer in the near future.

**Keywords:** Liver cancer, Gene therapy, applications and obstacles

# **The Effects of *Thymus vulgaris* on colorectal cancer and gastrointestinal disease from the perspective of Persian medicine and modern phytotherapy**

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## Abstract

### Background

colorectal cancer is the most common type of gastrointestinal cancer.

Although radiotherapy, chemotherapy and surgery have been primary colorectal cancer treatments, high rate of toxicity and side effects for these Interventions are very considerable.

Therefore, there is a critical requirement for alternative approaches that are more effective with lower unpleasant side effects.

In recent years, many scientists have paid attention to dietary phytochemicals for their action in treating several cancers.

*Thymus vulgaris* is one of the various traditional herbs that have been demonstrated to have major therapeutic effects on Gastrointestinal disease.

*Thymus vulgaris* is a species of flowering plant in the mint family Lamiaceae, it is a bushy, woody-based evergreen subshrub with small, highly aromatic, grey-green leaves and clusters of purple or pink flowers in early summer.

### Materials and Methods

Data were obtained from searching the scientific databases including Pubmed, ScienceDirect, Scopus, Web of Science, Google Scholar and related books.

### Results

In this review article, *Thymus vulgaris* shows expectorant, antitussive, antibronchiolitis, antispasmodic, anthelmintic, carminative, diuretic, antibacterial, antifungal, antiviral, and antioxidant activities. in addition, It is effective in treating Gastrointestinal disease.

*Thymus vulgaris* extract inhibits colon cancer cells with decreased proliferation and increased apoptotic cell death. Also, it can enhance the sensitivity of colorectal cancer cells to DNA-damaging drugs.

### Conclusion

Many studies confirm that *Thymus vulgaris* has a wide range of pharmacological activity, but it seems more research is needed to evaluate this mechanism.

Keywords: *Thymus vulgaris*, Thyme, Colorectal Cancer, Persian medicine, Gastrointestinal disease.

# **miRNA-Related Polymorphisms in miR423- (rs6505162) and PEX6 (rs1129186) and Risk of Esophageal Squamous Cell Carcinoma in an Iranian Cohort**

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## abstract

**Aims:** Iran is located in the Asian esophageal cancer belt. It is a high-risk region for esophageal squamous cell carcinoma (ESCC). The extent to which genetic components, especially variants within miRNAs or their binding sites, contribute to risk of ESCC in the region is not yet fully understood. Herein, tests were done on an Iranian cohort to evaluate the association of miRNA-related polymorphisms in miR423- (rs6505162) and peroxisomal biogenesis factor 6 (PEX6) (rs1129186 within a miR5-149-p-binding site) with the risk of ESCC risk.

**Methods:** This study recruited 200 ESCC patients and 300 healthy individuals. Genotyping was performed using the polymerase chain reaction–restriction fragment length polymorphism method. Target genes and biological processes that are regulated by miR423- and may be affected by a change in miR423- expression were identified by in silico analysis.

**Results:** Logistic regression analyses revealed an association between rs6505162 and ESCC, assuming codominant (AA vs. CC, odds ratios, OR [%95 confidence interval, CI]: 0.69–0.15] 0.32], p-value: 0.0076), recessive (AA vs. CC+CA, OR [%95 CI]: 0.73–0.16] 0.35], p-value: 0.0027), and log-additive models (OR [%95 CI]: –0.52] 0.69 0.91], p-value: 0.0084). No significant association was observed for PEX6 rs1129186. In silico analyses revealed several genes and biological processes that are regulated by miR423- in ESCC.

**Conclusion:** This study identified the first evidence of an association of a miRNA-related variant with risk of ESCC in an Iranian cohort. PEX6 rs1129186 may not modulate the risk of ESCC in the cohort.

**Keywords:** Esophageal Squamous Cell Carcinoma, miR423-, pex6

# **The role of *Helicobacter pylori* eradication therapy in matrix metalloproteinase 9 inhibiting in gastric cancer**

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## **Abstract**

**Introduction and Objective:** Gastric cancer is the second common malignancy and is one of the major causes of cancer death. *Helicobacter pylori* infection is a risk factor for this cancer. The tissue damage caused by *Helicobacter pylori* in the stomach increases the level of MMP9, which by the proteolysis of many extracellular matrix compounds plays an important role in inducing cancer and metastasis. This study aimed to investigate the role of *Helicobacter pylori* eradication therapy in reducing MMP9 levels.

**Materials and Methods:** This interventional study was conducted on 60 patients with positive anti-*Helicobacter pylori* antibodies by ELISA method were selected in Ardabil city, Iran. After obtaining written consent, general information was collected from each patient using a validated and reliable questionnaire. The standard treatment for *Helicobacter pylori* eradication, including amoxicillin, clarithromycin, omeprazole and metronidazole, was prescribed. After 6 weeks, *Helicobacter pylori* eradication was confirmed by fecal antigens. 3 cc Fasting blood samples were taken from all of the patients for testing of MMP9 level at the beginning and end of the study. Then data were analyzed.

**Results:** Findings showed that 55 % of patients were female. The mean age of patients was  $2\pm 48$  (mean  $\pm$  SD) years. The serum level of MMP9 decreased significantly in the patients ( $p < 0.05$ ).

**Conclusion:** *Helicobacter pylori* eradication therapy may inhibit gastric cancer induction by modulating serum MMP9 levels.

**Key words:** *Helicobacter pylori*, eradication, MMP9

## **Gene therapy by oncolytic viruses in Pancreatic Ductal Adeno Carcinoma**

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Pancreatic ductal adenocarcinoma (PDAC) is the most common type of pancreatic cancer which has high mortality. Failure in conventional treatments for PDAC reflects a strong need to develop novel therapeutic approaches. The recent advances in gene therapy with oncolytic viruses have offered new promising therapeutic perspectives. The selective growth advantage renders cancer cells highly sensitive to viral infection. Oncolytic viruses are natural pathogens or genetically modified viruses with high specificity to tumor cells that infect and destroy them. These viruses can be engineered to produce cytokines and antigens of suicide genes. They provide their anticancer activity through several mechanisms such as preferential replication in dividing tumor cells to induce apoptosis and cell death, targeting of dysfunction pathways (such as TP53), induction of specific and non-specific anti-tumor immunity and suppression of cancer stem cells. Virus-mediated tumor lysis leads to the release of tumor-associated antigens and mutant proteins arising during tumor evolution which can locally stimulate sufficient anti-tumor immune responses to provide systemic, long-lasting, cancer-killing immune responses in advanced cancer patients. The oncolytic virus was found to increase T cell infiltration into tumors and generate a systemic immune response against tumor-associated antigens. Thus, combining oncolytic virus with immune checkpoint inhibitors to override immune tolerance has emerged as one of the most promising anticancer modalities to date. In conclusion, oncolytic virotherapy is an emerging treatment modality and has a promising result in safety of preclinical tests which increase use of it for cancer treatment.

**Keywords:** Pancreatic cancer, Gene therapy, Oncolytic virus

## **Gene therapy by nanoparticles in Pancreatic cancer**

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Pancreatic cancer has high mortality and remains one of the most difficult cancers to treat. Failure in conventional treatments for Pancreatic cancer reflects a strong need to develop novel therapeutic approaches. Recent advances in gene therapy with nanoparticles offer novel opportunities for treatment. Nanoparticles are tiny materials having size ranges from 1 to 100 nm. Due to their small size they have various applications in different sciences. Nanoparticles that used as vectors for gene transfer are generally divided into a polymer-based and lipid-based nanoparticles. Nano carriers as a non viral vectors in comparison to viral vectors have less cytotoxicity and less stimulate immune. In Addition, gene transfer system with nanoparticles are not limited by the size of the gene molecules that are introduced into the cell and it's also easy to produce and transform this vectors on a large scale. These nanoparticles are cationic and have a positive charge that bind with negative charge of DNA by electrostatic interaction and forming a stable complex. After the complex targeted to desired tissue, enters in target cell by endocytosis or membrane integration. Finally, desired gene cause to express, restore or inhibit a particular gene in the nucleus. and lead to apoptosis or restore tumor cells to the normal modes. However rate of gene transfer with nanoparticles in comparison to viral vectors is often inadequate and also have low survival of gene on, in vivo condition. Today, researchers in gene therapy try to make better vectors that correspond with characteristics of patient condition and types of disease.

**Keywords:** Pancreatic cancer, Gene therapy, Nanoparticles

## **Serum and plasma miRNAs: a diagnostic biomarker for pancreatic cancer**

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Since pancreatic cancer remains one of the most aggressive malignances, it is important to develop efficient early detection tools for this cancer. Recently, the role of Micro RNAs (miRNAs) in the development and progression of pancreatic cancer was confirmed. miRNAs are a class of non-coding RNAs that do not encode proteins, but possess regulatory function in cell growth, differentiation, apoptosis and gene expression. Alterations in miRNAs expression have been correlated with cancer development. Since serum or plasma miRNA profiling is non-invasive and convenient, it could be used as diagnostic biomarker for early detection of pancreatic cancer. The expression levels of seven miRNA including miR16-, miR21-, miR155-, miR181-a, miR181-b, miR196-a, miR210- significantly increase in plasma from pancreatic cancer patients compared to pancreatitis patients and normal adults. In contrast, miR145- and miR34- expression decreases in pancreatic cancer tissues. Although serum/plasma miRNAs together with other markers like CA9-19 and CEA antigens provide better detection for pancreatic cancer, the diagnostic value of these miRNAs is prior to antigens. While the increased levels of miR16- and miR196-a combined with increased level of CA9-19 could be more effective for distinguishing pancreatic cancer from pancreatitis and normal individuals, the expression level of serum miR1290- better than CA9-19 specifically discriminates low stage pancreatic cancer patients from controls. Further, combination of miR6075-, miR4294-, miR5-6880-p, miR5-6799-p, miR125-a3-p, miR4530-, miR3-6836-p, and miR4476- could have higher sensitivity and specificity for the diagnosis of pancreatic cancer compared to CA9-19 and CEA. In conclusion, the deliberation level of miRNAs in pancreatic tissue cancer could more importantly provide new diagnostic strategies.

**Keywords:** pancreatic cancer, early detection, serum and plasma miRNAs

## **Aberrant methylated EDNRB can act as a potential diagnostic biomarker**

in sporadic colorectal cancer while KISS1 is controversial

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### Abstract

Cancers are among the most serious threats of human health worldwide. Survival and mortality rates of colorectal cancer (CRC) strongly depend on the early diagnosis. The aberrant methylation pattern of genes as a diagnostic biomarker can serve as a practical option for timely detection and contribute subsequently to the enhancement of survival rate in CRC patients, since methylation changes are not only frequent but also can occur in initial tumorigenesis stages. It has been indicated that EDNRB and KISS1 genes are hypermethylated through progression and development of CRC. In current study, after extraction of genomic DNA from 45 paired tumor and adjacent non-cancerous tissue samples and treatment with bisulfite conversion, the methylation status of EDNRB and KISS1 CpG rich regions were assessed quantitatively using MS-HRM assay to determine practicability of these aberrant methylations for diagnosis of sporadic CRC and its discrimination from corresponding normal tissues. The results showed that the methylation distribution differences, comparing tumor tissues with their adjacent non-cancerous tissues, were statistically significant in all selected locations within EDNRB gene promoter ( $P < 0.001$ ); they had also some correlations with tumor stage and grade. Nonetheless, methylation distribution in KISS1 gene CpG rich region revealed no statistically significant differences between CRC and adjacent non-cancerous tissues ( $P = 0.060$ ). Overall, it can be concluded that aberrant methylated EDNRB can be a promising potential diagnostic biomarker for CRC, while KISS1 is controversial and needs to be more investigated.

**KEYWORDS:** biomarker, colorectal cancer, EDNRB, hypermethylation, KISS1, MS-HRM assay

# **Evaluation of dietary habits and urinary and blood cadmium of some gastrointestinal cancer patients with healthy people**

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## **Abstract**

**Aim:** Cancer is one of the main health problems in the world. Among all cancers, gastrointestinal cancer has more prevalence. About 20 percent of new cancer cases are allocated to gastrointestinal cancer. Heavy metals exposure such as cadmium has been shown to have a strong correlation with the incidence of many cancers. This study was aimed to assay dietary habits, blood and urinary levels of cadmium in patients with some gastrointestinal cancer.

**Method and Material:** This comparative cross-sectional study was carried out on 111 patients with some gastrointestinal cancer as cases and 111 healthy people. Patients were recruited after histopathological confirmation for cancer. A demographic questionnaire including age, gender and smoking status and also food frequency questionnaire containing 84 items divided into six food groups were completed for participants. Urine and blood samples were collected after an overnight fasting. The concentration of cadmium in blood and urine (adjusted by creatinine) was measured by means of graphite furnace atomic absorption spectrophotometer after acid digestion. Normality of the data was assessed using the Kolmogorov-Smirnov test. Independent student t-Test and Mann-Whitney were used for comparison of quantitative normal and non-normal variables, respectively. Chi-square test was used for qualitative variables. Linear and multiple regression analyses were performed to determine the relationship between variables.

**Results:** The concentration of urinary and blood cadmium was higher in cancer patients in comparison with controls (urine:  $1.80 \pm 3.35$   $\mu\text{g/g}$  creatinine vs.  $1.12 \pm 2.09$   $\mu\text{g/g}$  creatinine,  $p < 0.001$ ; blood:  $1.7 \pm 2.57$   $\mu\text{g}$  vs.  $1.83 \pm 2.10$   $\mu\text{g}$ ,  $p = 0.037$ ). Age and gender showed a significantly positive correlation with the incidence of cancer. Risk of cancer incidence increased %5 per year ( $p < 0.001$ ) and the odds ratio for males were %75 more than females ( $p = 0.037$ ). The results of the regression analysis showed that urinary cadmium after adjusting for confounding variables had a significant correlation with cancer; however, this correlation was not observed for blood cadmium. There was no significant difference between the dietary habits of the patients and healthy people. In addition, there was no correlation between dietary habits and urinary and blood cadmium.

**Conclusion:** According to the results, the urinary and blood cadmium concentrations in cancer patients were significantly higher than in healthy subjects. Future studies are suggested to identify other environmental factors affecting the urine and blood cadmium levels in cancer patients.

**Keywords:** Gastrointestinal system, Cancer, Cadmium, Dietary Habits



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