Need for colorectal cancer screening in Saudi Arabia

Samar Al Homoud
Consultant Colorectal Surgeon
Associate Professor
King Faisal Specialist Hospital & Research Centre
Riyadh-Saudi Arabia
Executive board member of Gulf Center for Cancer Control & Prevention (GCCCP)
No disclosures
Incidence

• Worldwide 2018
  New cases: 1,849,518 (10.2%)

• Mortality:
  880,792 deaths
Incidence

• **World ASR 2018**
  
  23.6 per 100,000 in men  
  16.3 per 100,000 in women

• **Saudi Arabia ASR (2014)**
  
  10.6 per 100,000 in men  
  8.2 per 100,000 in women
Age standardized (World) incidence and mortality rates, colorectal cancer

- Australia/New Zealand: Incidence 36.7, Mortality 11.1
- Northern Europe: Incidence 32.1, Mortality 11.2
- Southern Europe: Incidence 31.6, Mortality 11.5
- Western Europe: Incidence 28.8, Mortality 10.3
- Central and Eastern Europe: Incidence 28.8, Mortality 15.2
- Eastern Asia: Incidence 26.5, Mortality 10.9
- North America: Incidence 26.2, Mortality 8.4
- World: Incidence 19.7, Mortality 8.9
- South America: Incidence 18.6, Mortality 8.9
- Caribbean: Incidence 17.9, Mortality 9.6
- Micronesia: Incidence 17.4, Mortality 9.5
- Western Asia: Incidence 16.3, Mortality 8.7
- Polynesia: Incidence 16.2, Mortality 4.4
- South-Eastern Asia: Incidence 14.3, Mortality 7.9
- Southern Africa: Incidence 13.4, Mortality 7.1
- Melanesia: Incidence 12.8, Mortality 8.1
- Central America: Incidence 11.0, Mortality 5.3
- Northern Africa: Incidence 9.2, Mortality 5.4
- Eastern Africa: Incidence 7.7, Mortality 5.7
- Middle Africa: Incidence 7.5, Mortality 5.9
- Western Africa: Incidence 6.4, Mortality 4.5
- South-Central Asia: Incidence 4.9, Mortality 3.6

Samar Al Homoud
Predicted # 2040

Estimated number of incident cases from 2018 to 2040, colon, both sexes, all ages

Data source: GLOBOCAN 2018
Graph production: Global Cancer Observatory (http://gco.iarc.fr/)
© International Agency for Research on Cancer 2018
Table 2.5: The Ten Most Common Cancers Among Saudi Nationals by Gender, 2014

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5299</td>
<td>%</td>
<td>6264</td>
<td>%</td>
</tr>
<tr>
<td>Colorectal</td>
<td>753</td>
<td>14.2</td>
<td>594</td>
<td>9.3</td>
</tr>
<tr>
<td>NHL</td>
<td>438</td>
<td>8.3</td>
<td>734</td>
<td>11.5</td>
</tr>
<tr>
<td>Leukaemia</td>
<td>392</td>
<td>7.4</td>
<td>366</td>
<td>5.8</td>
</tr>
<tr>
<td>Lung</td>
<td>354</td>
<td>6.7</td>
<td>307</td>
<td>4.8</td>
</tr>
<tr>
<td>Prostate</td>
<td>324</td>
<td>6.1</td>
<td>301</td>
<td>4.7</td>
</tr>
<tr>
<td>Liver</td>
<td>310</td>
<td>5.9</td>
<td>182</td>
<td>2.9</td>
</tr>
<tr>
<td>Hodgkin's lymphoma</td>
<td>235</td>
<td>4.4</td>
<td>176</td>
<td>2.8</td>
</tr>
<tr>
<td>Bladder</td>
<td>227</td>
<td>4.3</td>
<td>156</td>
<td>2.5</td>
</tr>
<tr>
<td>Thyroid</td>
<td>225</td>
<td>4.2</td>
<td>139</td>
<td>2.2</td>
</tr>
<tr>
<td>Kidney</td>
<td>199</td>
<td>3.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Incidence higher by 2040

• longer life expectancy
• Increase in the population
• Better detection and registration
• Changes in the behavioural and life style (unhealthy diets, obesity, smoking and physical inactivity)
Figure 1.2: Population Pyramids of Saudis (%) by Gender and Age Group, 2014
Figure 3.2.2: Stage Distribution of Colorectal Cancer in Saudi Arabia, 2014

- **Male**
  - Unknown: 8.0%
  - Distant: 28.4%
  - Regional: 40.0%
  - Localised: 23.6%

- **Female**
  - Unknown: 6.4%
  - Distant: 30.0%
  - Regional: 38.2%
  - Localised: 25.4%

- **All**
  - Unknown: 7.3%
  - Distant: 29.1%
  - Regional: 39.2%
  - Localised: 24.4%
**Conclusion**

Screening for CRC among asymptomatic persons at average-risk in Saudi Arabia is recommended. It should probably be initiated at the age of 45 years; however, further research on the threshold age for screening is needed. Screening is not recommended for persons above the age of 70 years in most cases. Colonoscopy alone every 10 years is the recommended modality; however, if unavailable, FS every 5 years coupled with annual gFOBT or FIT should be considered. FIT is preferred over gFOBT. The least recommended modality is CTC. All CRC screening modalities should be performed at high load centres where skilled and experienced clinical staff is available.
Tackling cancer control in the Gulf Cooperation Council Countries

Sadiq Al-Othman, Abdalali Hadli, Sameh Alainou, Abdulla Alkheen, Tawfik Khaja, Ali Al-Zahrani

Cancer is a major health problem in both high income and low to middle-income countries, and is the second leading cause of death in some developing countries. More than half of all new cancer cases are diagnosed at an advanced stage. In GCC countries, the incidence of cancer is expected to continue to rise by 3-4% every year, and more than 65% of these will increase in low to middle-income countries where healthcare facilities and patient care are restricted.

Introduction
Cancer is a major health problem in both high income and low to middle-income countries, and is the second leading cause of death in the world. The global incidence of cancer in 2012 was 14 million. The estimated number of new cases of cancer is expected to continue to rise by 3-4% every year, and more than 65% of these will increase in low to middle-income countries where healthcare facilities and patient care are restricted.1 In the WHO Eastern Mediterranean region, the incidence of cancer is predicted to rise by 8% over the next decade. Although two-thirds of cancers could be prevented or cured if diagnosed early, current cancer care is a profound challenge to healthcare systems, patients and their families, and societies as a whole. Therefore, combating cancer necessitates integration between primary, secondary, and tertiary medical care in all countries. People in the Gulf region have achieved rapid improvements in health care over the past 20 years, better control of communicable diseases, and have longer life expectancies. This has happened alongside rapid socioeconomic changes that have modified the populations’ lifestyles, such as increased tobacco use, decreased physical activity, and increased consumption of unhealthy foods.

In combination, all of these factors have likely influenced the prevalence of cancer.

In 1997, the Gulf Centre for Cancer Registration (GCCCR) was established to provide incidence data for national cancer registries in the Gulf Cooperation Council (GCC): United Arab Emirates (UAE), Bahrain, Saudi Arabia, Oman, Qatar, and Kuwait states. GCCCR works under the jurisdiction of the executive office of the health ministers/ cancer control departments of GCC states. Raw data for cancer prevalence and population estimates is provided by each national cancer registry in the six GCC states. The primary objectives of the GCCCR are to collect and classify information on all cancer cases to produce statistics on the occurrence in a defined population, to provide technical support for early detection and screening programmes, and to facilitate epidemiological studies to provide a framework for assessment.

The initiative was the groundwork for the strategic plan (2004-09 and 2010-20) for cancer prevention and control in GCC states. Furthermore, a framework comprising seven approaches and strategic actions has been developed to support members states in developing national action plans and implementation of cancer control activities.2 These strategies are in line with the WHO global strategy for the prevention and control of non-communicable diseases (2008-13), and the WHO strategy against cancer through effective integration between primary, secondary, and tertiary prevention programmes, which aim to prevent preventable cancers, cure applicable cancers through early detection and management, and relieve pain and improve quality of life through palliative care services.

Incidence
From January, 1998, to December, 2009, 119,288 newly diagnosed cancer cases were reported by the GCC member states (GCC states were reported by the GCC Cancer Registries). Of these, 58,629 patients (49.1%) were male and 60,659 (50.9%) were female. Most cases were reported from Saudi Arabia, followed by Oman, Kuwait, Bahrain, UAE, and Qatar (table 1). The age-standardised incidence rate (ASR) by the world standardised incidence rate, which is usually expressed per 100,000 individuals, for GCC states was 120.6 (95% CI 115.9-125.4) per 100,000 for the period 1998-2009. The age-standardised death rate (ASDR) by the world standardised death rate, which is usually expressed per 100,000 individuals, for GCC states was 44.2 (95% CI 43.2-45.3) per 100,000 for the period 1998-2009.

Recommendation 1: developing five-year plans for national cancer registries

Samar Al Homoud


Panel: Summary of the proposed recommendation from the Riyadh document

Recomendation 1: alleviating cancer burden at Gulf Cooperation Council Health Ministers’ Institutional level

Calling upon the council states to exert their utmost efforts to reduce cancer mortality rates by 25% within a 10-year period (2015-2025) according to the directions of WHO

Upgrading the Gulf Cancer Control and Prevention (GCCCP) (2010-2020) to cope with the world recent trends and according to the updated Gulf plan for control of non-communicable diseases (2014-2025).

Recomendation 2: alleviating the burden of cancer at the level of health systems

Urging the health ministries in the Gulf Cooperation Council to coordinate, collaborate, and pool information to establish a comprehensive and education system. Gulf Cancer Control and Prevention (GCCCP) (2010-2020) to cope with the world recent trends and according to the updated Gulf plan for control of non-communicable diseases (2014-2025).

Recomendation 3: promoting palliative care

Give more support to palliative care services

Inclusion of palliative care as a specialty with more education, and psychological perspective

Inclusion of religious and spiritual principles about health care and palliative care within all medical curricula at all health and medical educational institutes

Directing health promotion programmes to acquire necessary skills to change unhealthy behavioural, and improve quality of life through palliative care services.

Recommendation 8: maximising the role of primary health care

Shift more resources to primary care services to improve the efficiency of health-care systems

Recommendation 9: strengthening the role of civil society and support of community participation

Promote and strengthen civil society, promote health care in the Gulf countries, and focus on health systems, frameworks, and national health promotion strategic plans in various specialties: community, education, religious, and economic.

Recommendation 10: effective empowerment of patients with cancer and their families

Through promotion of patient rights from health, social, economic, and psychological perspectives

According to the situation of the patient and the best for the patient

Provide a one-stop shop for patients with the most up-to-date curative, diagnostic, rehabilitative, and palliative techniques

Ensure high quality and timely service

Ensure that all cancer health service appropriate to all communities

Recommendation 11: encourage exchange of information and participation at regional and international meetings for GCC member states
Policy statement and recommended actions for early detection of colorectal cancer in the Eastern Mediterranean Region

Policy goal
Implement an early detection programme to detect colorectal cancer and precancerous lesions, at an early stage when they are small and localized, thus reducing colorectal cancer mortality rates.
Colorectal cancer, which is the third most common cancer in men and the second most common in women, represents almost 10% of the annual global cancer incidence.\(^1\) Incidence rates of colorectal cancer show a strong positive gradient with an increasing level of economic development.\(^2\) Even so, the net 5-year rate of survival decreases with lower levels of income, with rates reaching 60% in high-income countries but falling to 30% or less in low-income countries.\(^3\) Established risk factors for colorectal cancer include consumption of processed meats,\(^4\) consumption of alcoholic beverages,\(^5\) tobacco smoking,\(^6\) and excess body fat,\(^7\) whereas consumption of dietary fiber and dairy products and increased levels of physical activity decrease the risk.\(^8\) In addition, certain subgroups of the population are at increased risk owing to genetic predisposition (e.g., the Lynch syndrome), a family or personal history of colorectal neoplasia, or medical conditions (e.g., inflammatory bowel disease) that have been associated with colorectal cancer.

Colorectal cancer can be classified on the basis of the location within the large bowel, histologic characteristics, and molecular features. Advanced adenomas — in particular, those measuring more than 10 mm in diameter — are the most well-known precursor lesions of colorectal cancer.\(^9\) Screening aims to reduce the risk of death from colorectal cancer through early detection and the rate of complications associated with detection of cancer at a later stage. Such screening also aims to reduce the incidence and mortality of colorectal cancer through detection and removal of precancerous lesions. Colorectal cancer screening is available in many countries with high and upper-middle incomes worldwide and is delivered by organized programs or through opportunistic screening. Participation rates in such screening are highly variable among countries and settings\(^10\) but have typically been below 40%. Insurance status and access to primary care are the main determinants of participation. Additional obstacles include costs, logistic challenges, lack of provider involvement, language barriers, cultural beliefs, and lack of awareness of colorectal cancer screening.\(^11\)\(^12\)

There are several methods available for colorectal cancer screening. Stool-based tests to detect blood include the guaiac fecal occult blood test and the more sensitive fecal immunochromatographic test (FIT).\(^13\) Endoscopic methods, which use optical approaches to directly examine the rectum and colon, include sigmoidoscopy and colonoscopy.\(^14\) Colonoscopy is used both as a primary screening tool and as a follow-up for persons who have tested positive with other screening methods. In addition, computed tomographic (CT) colonography, an imaging method based on scanning technology, has been developed as a less invasive visualization technique for colorectal cancer screening.\(^15\) Newer techniques that have recently emerged but have not been widely tested are based on visual inspection (e.g., video capsule endoscopy) or the analysis of biomarkers in stool (e.g., multilayer-stool DNA), in blood (e.g., methylated septin 9 DNA), or in breath (e.g., volatile organic compounds and various markers of protein, DNA, and RNA).

We reviewed the published evidence from randomized, controlled trials, observational studies, and modeling studies assessing stool-based, endoscopic, and CT colonography–based screening methods and evaluated outcomes with respect to preventive effects, adverse effects, and the balance of benefits and harms in average-risk populations of men and women combined. Details regarding the working procedures that were used for conducting the review and a list of the members of the International Agency for Re-
Challenges

• Available data
• Limited resources and infrastructures
• Public and Professional awareness
• Lack of screening programs*
• Standardize guidelines
• Lack of timely referrals
• Cost

Samar Al Homoud
Current situation

Pilot FIT project

• Using quantitative FIT test
• Through primary health care centres
• Issues with high temperatures
Summary

• Improve Survival data
• Implement an early detection programme
• Improve timely access to healthcare *
• Raise public awareness
• Assess population acceptability
• Build infrastructure, resources and required manpower *
• Establish a well-organized screening services for the current time
• Research
Conclusion

• It is essential to start planning an integrated approach & comprehensive strategies for colorectal cancer control balancing prevention, early detection and treatment in order to lower burden of cancer
Thank you