NATIONAL SCREENING PROGRAM FOR COLORECTAL CANCER

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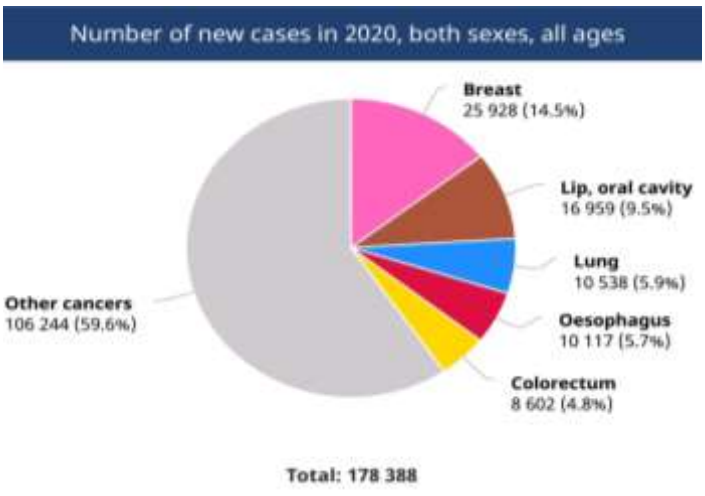
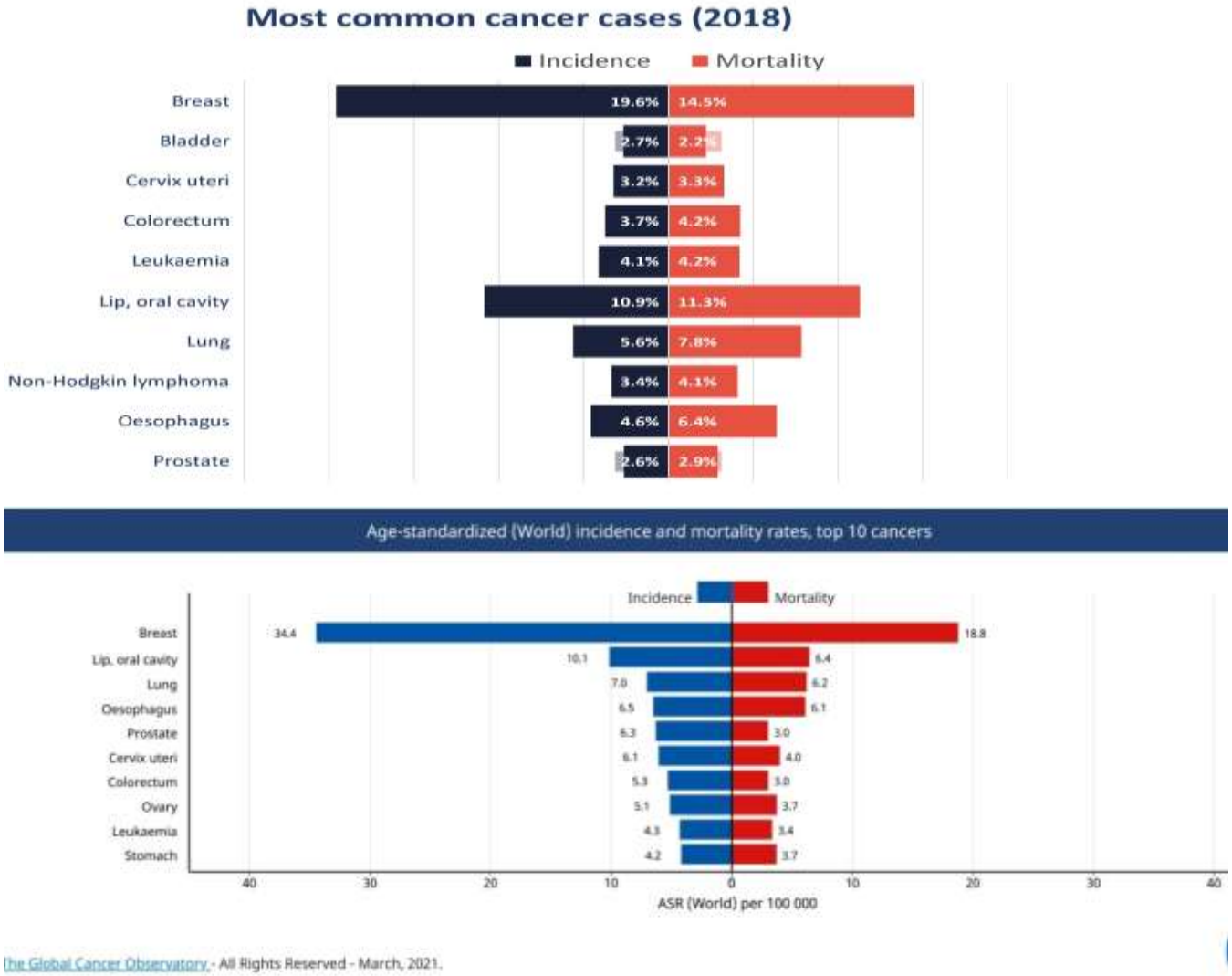
COLORECTAL CANCER

Colorectal cancer is one of the preventable cancers in humans. From a simple polyp to cancer, it is a long journey and gives us a window of opportunity to intervene and prevent it. Historically, Pakistan has been considered a low-prevalence country for colorectal cancer but changing epidemiological patterns dictate that we should think of implementing bowel screening programs for early detection and risk reduction. More than 1.9 million new colorectal cancer (including anus) cases and 935,000 deaths were estimated to occur in 2020, representing about one in 10 cancer cases and deaths. (Globocan 2020). Colorectal Cancer is the 3rd most common cancer among men and 2nd most common cancer among women, worldwide. (1). CRC mortality rates have been declining in the USA and Canada, whereas in many countries like Latin America and the Caribbean (LAC), the mortality rates are increasing. This difference between Canada and the US with the rest of the countries in the Americas serves as an indication of differences that may exist in health care, including CRC screening, early detection, and treatment. There are perhaps lessons that can be learned from the USA and Canada experiences with CRC programs that can be used to address the growing burden of CRC in LAC

STATISTICS IN PAKISTAN



PAKISTAN (BURDEN OF CANCER)



GLOBOCAN 2020

PAKISTAN:

No. of new cases	Colon:4801(2.7%)
	Rectum:3228(1.8%)
Deaths	Colon:2853(2.4%)
	Rectum:1704(1.5%)

CURRENT CRC SCREENING PROGRAMS IN MODERN WORLD

Several national professional associations have issued guidelines, and a review of various guidelines was recently published.[2] The review includes the CRC screening guidelines of the World Gastroenterology Association[3], the American College of Gastroenterology[4], the American Cancer Society/US Taskforce/American College of Radiology[5], the Argentinean National Consensus Program[6], and the American College of Physicians[7]. In general, these guidelines recommend the range of screening tests available and offer different strategies for the average population and the at-risk population.

Cost-Effective Analysis of CRC Screening

Given this situation, CRC screening programs need to become a higher public health priority, and investments in developing quality programs are urgently needed. Cost-effectiveness analyses are important to convince decision-makers to invest in any new health program, especially in limited-resource settings like Pakistan. Several studies have concluded that CRC screening is a cost-effective intervention.[8-9] This is not surprising given the high incidence of the disease in some countries like Pakistan and the high cost of cancer treatment. However, most of the evidence on the cost-effectiveness of CRC screening is based on studies in high-resource countries. The evidence from low- and middle-income countries is limited. A study in Colombia[10] compared six different screening strategies and concluded that only one of them (FOBT every two years) was cost-effective for the country.

Table 1: Colorectal Cancer Screening Program Characteristics in the Americas

Country	Is there a CRC screening guideline?	Recommended Age (Years)	Test/ Interval	Types of Programs	Screening Coverage
Antigua and Barbuda	Yes	--------	Colonoscopy	Opportunistic	--------
Argentina	Yes	50-70	FT	Opportunistic	10-50%
Bahamnas	No	--------	--------	Opportunistic	--------
Barbados	No	--------	--------	Opportunistic	--------
Belize	No	--------	--------	--------	--------
Bolivia	--------	--------	--------	--------	--------
Brazil	Yes	>50	FT/Every Year	Population-Based	42.8%
Canada	Yes	50-74	FT/Every 2 Year	Population-Based	--------
Chile	Yes	>50	FT/Every Year	Population-Based	--------
Colombia	Yes	>50	FT or Colonoscopy Every 2 Year	--------	--------
Costa Rica	No	--------	--------	--------	>70%
Cuba	Yes	>50	FT	Opportunistic	--------
Dominica	No	--------	--------	--------	--------
Dominican Republic	No	--------	--------	--------	<10%
Ecuador	Yes	50-74	FT	Opportunistic	--------
El Salvador	No	--------	--------	--------	--------
Grenada	No	--------	--------	--------	--------
Guatemala	No	--------	--------	--------	--------
Guyana	No	--------	--------	--------	--------
Haiti	No	--------	--------	--------	--------
Honduras	No	--------	--------	--------	--------
Jamaica	No	--------	--------	Opportunistic	--------
Mexico	Yes	>50	FT/Every Year	Opportunistic	--------
Nicaragua	No	--------	--------	--------	--------
Panama	No	--------	--------	--------	--------
Paraguay	No	--------	--------	--------	--------
Peru	No	--------	--------	--------	--------
Puerto Rico	Yes	50-75	FT, Sigmoidoscopy or colonoscopy	Opportunistic	--------
Saint Kitts and Nevis	No	--------	--------	--------	--------
Saint Lucia	No	--------	--------	--------	--------
Surinanne	No	--------	--------	--------	--------
Trinidad and Tobao	No	--------	--------	Opportunistic	--------
Uruguay	Yes	>50	FT/Every 2 Year	Opportunistic	--------
USA	Yes	50-75	FT, Sigmoidoscopy or colonoscopy	--------	58.6%
Venezuela	No	--------	--------	--------	--------

Similar conclusions were obtained in Argentina where the fecal occult blood test, every year, was considered the most cost-effective strategy (11). Regardless of the test used for screening, the health system must ensure the availability of colonoscopy and cancer treatment, otherwise, CRC screening will not be effective.

Recommendations

When To Start Screening In Average Risk Patients???

We recommend that people at average risk of colorectal cancer **start regular screening at age 45.**

Test options for colorectal cancer screening in Average Risk Patients

Several test options are available for colorectal cancer screening.

- Highly sensitive guaiac-based fecal occult blood test (gFOBT) every year. (Take home, multiple/sample method).
- Colonoscopy every 10 years.

If a person chooses to be screened with a test other than colonoscopy, any abnormal test result should be followed up with a timely colonoscopy.

Test Options for Colorectal Cancer Screening for people at increased or high risk

People at increased or high risk of colorectal cancer might need to start colorectal cancer screening before age 45, be screened more often, and/or get specific tests. This includes people with.

- A strong family history of colorectal cancer or certain types of polyps.
- A personal history of colorectal cancer or certain types of polyps
- A personal history of inflammatory bowel disease (ulcerative colitis or Crohn's disease).
- A known family history of a hereditary colorectal cancer syndrome such as familial adenomatous polyposis (FAP) or Lynch syndrome (also known as hereditary non-polyposis colon cancer or HNPCC).
- A personal history of radiation to the abdomen (belly) or pelvic area to treat prior cancer.

ACS Guidelines on Colorectal Cancer Screening and Surveillance for Increased/High Risk

Increased Risk (due to history of polyps on prior colonoscopy)		
Risk Category	**Age/ Time to Begin**	**Recommended Test(s)**
Small Rectal hyperplastic polyps	Age 50 y	Colonoscopy or other screening options
1-2 tubular adenomas with low-grade dysplasia <1 cm	5-10 y after polyp removal	Colonoscopy
3-10 adenomas or adenoma > 1 cm or any adenomas with high-grade dysplasia or villous features	3 y after polp removal	Colonoscopy
>10 adenomas fouond on single exam	<3 y after polyp removal	Colonoscopy
Sessile adenomas removed in pieces	2-6 mo after adenoma removal	Colonoscopy
Increased Risk (Due to history of Colorectal cancer)		
Risk Category	**Time or Begin**	**Recommended Test**
Colon or rectal cancer diagnosis	At time of colorectal surgery, or 3-6 mo later if metastasis absent	Colonoscopy every 5 y
Colon or rectal cancer removed surgically	<1 y after cancer resection or 1 y after colonoscopy of remaining colon	Colonoscopy every 10 y
Increased Risk (Due to FH of colorectal cancer)		
Risk Category	**Age/Time or Begin**	**Recommended Test**
Colorectal cancer or adenomalous polyps in any 1st degree relative <60 y or >2 1st degree relatives at any age.	Age 40 Y or 10 y before youngest immediate family case.	Colonoscopy every 5 y
Colorectal cancer or adenomalous polyps in any 1st degree relative > 60 y or >2 2nd degree relatives at any age.	Age 40 y	Colonoscopy every 10 y
High Risk		
Risk Category	**Age/Time or Begin**	**Recommended Test**
FAP diagnosed by genetic testing, or suspected without genetic testing	Age 10-12Y	Yearly flexible sigmoidoscopy; genetic testing
HNPCC or FH or condition	Age 20-25 y or 10 y before youngest immediate family case	Colonoscopy every 1-2 y: genetic testing
Inflammatory bowel disease	Unclear but cancer risk begins <8 y after pancolitis onset or 12-15 y after LC onset	Colonoscopy with biopsy every 1-2Y

ACS: American Cancer Society, FAP: Familial Adenomatous Polyposis, FH: Family History, FIT: Fecal Immunochemical test FOBT: Fecal Occult Blood Test, HNPCC: Hereditary Non polyposis Colorectal Cancer, LC: Left-sided Colitis
Source: Adopted and used with permission from American Cancer Society

WHEN TO STOP SCREENING?

The USMSTF recommends stopping routine screening at age 75

In patients who are 75 to 85 years old, the decision to continue or stop screening should be made based on the patient's life expectancy, assessment of risks and benefits of screening, and prior screening history.

Patients with negative past screening tests (especially colonoscopy), should be considered to stop screening at or when the life expectancy is less than 10 years.

Patients without prior CRC screening should be considered for screening up to age 85.

Stop all screening at age 85.

CONCLUSION

- As CRC incidence and mortality are increasing in Pakistan, there is a great need for CRC Screening Programs with Quality Assurance.
- CRC Screening Techniques are Cost-Effective as compared to NO Screening.
- The age to initiate population-based CRC screening in Pakistan is to start screening at age 45 years for the average-risk population by FOBT annually/ colonoscopy q 10 years.
- Stop screening in people who are at 75 years of age.
- More advocacy, information and education, and investments in CRC screening and treatment are urgently needed in the region.
- More research is needed on how to implement affordable and effective CRC screening programs in limited-resource settings like Pakistan.

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