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## Increased Young Age Incidence of Colorectal Carcinoma Among Cohort of Egyptian Population

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### INTRODUCTION

Colorectal carcinoma (CRC) is not uncommon cancer moreover it is a leading cause of cancer related death worldwide.<sup>1</sup>

In Egypt CRC represents the seventh most common cancer and the third most common male neoplasm and fifth most common female neoplasm.<sup>2</sup>

Early screening and diagnosis of CRC plays a crucial role in improving the prognosis and decreasing the CRC related mortality rate,<sup>3</sup> fortunately there is approved guidelines for CRC screening that greatly helps in prevention and early detection.<sup>4</sup>

Although the standard age for CRC screening is above 50 years old, there is a new emerging term of early onset colorectal carcinoma (CRC diagnosed before the age of 50 years old).<sup>5</sup> Even more suggestion of CRC screening in average-risk individuals between ages 45 and 49 years to reduce incidence of advanced adenoma, CRC, and mortality from CRC still Conditional recommendation of very low-quality evidence.<sup>6</sup>

So, we feel that more studies addressing age distribution changes related to Colorectal carcinoma and lacking well established guidelines for screening

### ABSTRACT

**Background:** Colorectal carcinoma (CRC) is not uncommon malignancy that represents a common cause of mortality worldwide as well as in Egypt however its overall incidence and mortality has been declining, still rising of CRC incidence was observed in young patients among Egyptian population, we felt that scanty of data available about incidence of colorectal carcinoma among Egyptians.

**Aim of the work:** to investigate the disparity of age-related changes in CRC among cohort of Egyptian population.

**Patients and methods:** retrospectively we analysed eight years data including the data of 965 patients those had done colonoscopy for different clinical presentations and had been diagnosed as colorectal carcinoma over eighteen years from 2000 to 2018 at Tanta university hospital and Kafrelsheikh university hospital.

**Results:** we found Increased CRC incidence over years, moreover CRC incidence was increased among studied cohort of Egyptian population below age 50 years old as 46.4% of total patients were below the age of 50 years old.

**Conclusion:** Colorectal carcinoma in Egypt has no age predilection and not any more common over 50 years old, and even more rising in young population below 50 years old.

**Keywords:** colorectal carcinoma, cancer, gastrointestinal tract.

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below standard age leading to missing of many cases of early onset colorectal carcinoma.<sup>7</sup>

In Egypt also more studies were needed to clarify age distribution related to CRC,<sup>8,9</sup> So we conducted this study for revision age incidence of colorectal carcinoma among Egyptian population.

### PATIENTS AND METHODS

In retrospective study we investigated the demographic data of 965 patients those had been diagnosed as colorectal carcinoma over eighteen years from 2000 to 2018, data had been collected from the medical records at gastroenterology and endoscopy units at Tanta university hospital and Kafr Elsheikh university hospital, Egypt (both are tertiary care hospitals covering most of Egyptian Nile delta region), we included 965 patients those who had investigated by colonoscopy for different clinical presentations and had been diagnosed as colorectal carcinoma at first time colonoscopy examination, we excluded patients already known to have CRC or those came for follow up of CRC. Data were retrieved from patients' files included demographic data age, sex and special habits as well as site of CRC, data statically analyzed.

The research was conducted in line with the ethical principles of the Declaration of Helsinki.

**Statistical Analysis:**

Data were collected and tabled, other demographic data were studied and analyzed, the full detailed form is SPSS 20, IBM, Armonk, NY, United States of America.

Quantitative data were expressed as mean  $\pm$  standard deviation (SD).

**RESULTS**

There was progressive increase in the number of patients diagnosed to have CRC over years from 2000 to 2018 (table 1).

However, the mean age of all studied patients was 50.63 years old with standard deviation 14.02 as

shown in (table 2), still 46.4% of total patients were below the age of 50 years old as shown in (table 3).

Male predominance in the incidence of CRC in our studied patients, as male represent 52.6 % of total studied patients versus 47.4 % females as shown in (table 4).

Left side cancer were obviously predominant in our studied patients as mainly rectosigmoid cancer were diagnosed in 35.9% of studied patients as well as cancer in descending colon represents 26.9% in our studied patients versus 7.5% and 8.2% in ascending and transverse colon respectively as shown in (table 5).

Year	Number	%
2000	22	2.3
2001	18	1.9
2002	18	1.9
2003	21	2.2
2004	25	2.6
2005	39	4.0
2006	32	3.3
2007	44	4.6
2008	32	3.3
2009	48	5.0
2010	47	4.9
2011	62	6.4
2012	61	6.3
2013	79	8.2
2014	98	10.2
2015	107	11.1
2016	93	9.6
2017	90	9.3
2018	29	3.0
Total	965	100.0

**Table 1:** number of cases per year.

Age	N	Minimum	Maximum	Mean	Std. Deviation
2000	22	15	65	42.68	14.04
2001	18	22	81	45.61	15.11
2002	18	19	73	47.17	15.17
2003	21	19	72	47.90	14.88
2004	25	17	70	46.52	14.20
2005	39	18	89	51.69	14.36
2006	32	19	70	46.34	14.74
2007	44	17	73	53.59	11.88
2008	32	29	77	50.00	13.33
2009	48	22	80	50.77	14.61
2010	47	24	93	52.04	14.50
2011	62	25	80	53.68	13.64
2012	61	19	75	48.16	12.52

2013	79	23	83	49.92	15.34
2014	98	21	80	51.81	14.46
2015	107	25	77	51.38	11.48
2016	93	15	80	51.76	13.60
2017	90	16	85	50.83	16.04
2018	29	28	79	54.03	11.79
Total	965	15	93	50.63	14.02

**Table 2:** Distribution of patient's age.

Year		Age		Total
		< 50	≥50	
2000	N	15	7	22
	%	68.2%	31.8%	100.0%
2001	N	12	6	18
	%	66.7%	33.3%	100.0%
2002	N	11	7	18
	%	61.1%	38.9%	100.0%
2003	N	9	12	21
	%	42.9%	57.1%	100.0%
2004	N	15	10	25
	%	60.0%	40.0%	100.0%
2005	N	19	20	39
	%	48.7%	51.3%	100.0%
2006	N	17	15	32
	%	53.1%	46.9%	100.0%
2007	N	18	26	44
	%	40.9%	59.1%	100.0%
2008	N	18	14	32
	%	56.3%	43.8%	100.0%
2009	N	25	23	48
	%	52.1%	47.9%	100.0%
2010	N	21	26	47
	%	44.7%	55.3%	100.0%
2011	N	22	40	62
	%	35.5%	64.5%	100.0%
2012	N	32	29	61
	%	52.5%	47.5%	100.0%
2013	N	34	45	79
	%	43.0%	57.0%	100.0%
2014	N	49	49	98
	%	50.0%	50.0%	100.0%
2015	N	44	63	107
	%	41.1%	58.9%	100.0%
2016	N	36	57	93
	%	38.7%	61.3%	100.0%
2017	N	43	47	90
	%	47.8%	52.2%	100.0%
2018	N	8	21	29
	%	27.6%	72.4%	100.0%
Total	N	448	517	965
	%	46.4%	53.6%	100.0%

**Table 3:** Distribution of patient's age above and below 50 years old.

Year	Sex		Total	
	Male	Female		
2000	N	12	10	22
	%	54.5%	45.5%	100.0%
2001	N	8	10	18
	%	44.4%	55.6%	100.0%
2002	N	14	4	18
	%	77.8%	22.2%	100.0%
2003	N	9	12	21
	%	42.9%	57.1%	100.0%
2004	N	15	10	25
	%	60.0%	40.0%	100.0%
2005	N	25	14	39
	%	64.1%	35.9%	100.0%
2006	N	17	15	32
	%	53.1%	46.9%	100.0%
2007	N	24	20	44
	%	54.5%	45.5%	100.0%
2008	N	14	18	32
	%	43.8%	56.3%	100.0%
2009	N	27	21	48
	%	56.3%	43.8%	100.0%
2010	N	28	19	47
	%	59.6%	40.4%	100.0%
2011	N	31	31	62
	%	50.0%	50.0%	100.0%
2012	N	38	23	61
	%	62.3%	37.7%	100.0%
2013	N	48	31	79
	%	60.8%	39.2%	100.0%
2014	N	39	59	98
	%	39.8%	60.2%	100.0%
2015	N	50	57	107
	%	46.7%	53.3%	100.0%
2016	N	45	48	93
	%	48.4%	51.6%	100.0%
2017	N	45	45	90
	%	50.0%	50.0%	100.0%
2018	N	19	10	29
	%	65.5%	34.5%	100.0%
Total	N	508	457	965
	%	52.6%	47.4%	100.0%

**Table 4:** Distribution of patient's sex.

		N	%
Sex	Male	508	52.6
	Female	457	47.4
Age	< 50	448	46.4
	≥ 50	517	53.6
	Range	15 – 93	
	Mean ± SD	50.63 ± 14.02	
	Median	50	
Smoking	Smoker	417	43.2
	Nonsmoker	548	56.8

Site			
	<b>Anal canal</b>	12	<b>1.2</b>
	<b>Anorectum</b>	87	<b>9.0</b>
	<b>Ascending colon</b>	72	<b>7.5</b>
	<b>Caecum</b>	36	<b>3.7</b>
	<b>Descending colon</b>	260	<b>26.9</b>
	<b>Hepatic flexure</b>	13	<b>1.3</b>
	<b>Rectosigmoid</b>	346	<b>35.9</b>
	<b>Sigmoid</b>	60	<b>6.2</b>
	Transverse	79	8.2

**Table 5:** characters of studies patients and related Colorectal carcinoma.

### DISCUSSION

Our study demonstrates the increased incidence of CRC among patients below 50 years old among cohort of Egyptian population as well as increase the incidence of left side colonic cancer more than right side.

Those results go with previous studies that revealed increase incidence of CRC among Egyptian above 30 years old.<sup>9</sup>

However, the well-known concept of decreasing the incidence and mortality of CRC, surprisingly increase the incidence of CRC among studied Egyptian population was revealed by our studies that goes with studies that explain the increase incidence among Egyptian population by westernization of diet.<sup>10,11</sup>

However, the American Cancer Society updated their guidelines for lowering the CRC screening age for certain population as American and African, still further updating of guidelines is needed to meet the early onset CRC in Egyptian population.<sup>12</sup>

Comparing other countries, we found similar increase in early incidence CRC in different countries as incidence per 100,000 were found 44.7 in South Korea up to 32.1 in United Kingdom.<sup>13</sup>

### CONCLUSION

Colorectal carcinoma in Egypt has no age predilection, and even more rising in young population below 50 years old.

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