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Evaluation of Younger than Age 40 Years Patients Operated Due to Gastric, Colorectal and Pancreatic Cancer

Kırk Yaş Altı Mide, Kolorektal ve Pankreas Kanseri Nedeniyle Ameliyat Edilen Hastaların Değerlendirilmesi

Erdal Uysal

Sanko Üniversitesi Tıp Fakültesi, Genel Cerrahi Ana Bilim Dalı, Gaziantep

Abstract

Aim We aimed to draw attention to the importance of early diagnosis, and to remind that the diagnosis of malign gastrointestinal system tumors should be considered for young adults. For this purpose, our clinical experiences are shared.

Material and Method Thirty patients under 40 year-old that have been operated in our center between the hear 2012 and 2016 for gastric, colorectal and pancreatic cancers were involved in our study. The data of patients were retrospectively obtained from their files. The diagnoses, demographical characteristics, familial cancer histories, surgeries and nonsurgical treatments, and pathological stages of the patients were recorded. Furthermore, the follow-up and survival durations of the patients were also recorded..

Results The ratio of female/male was 0.57. Mean age were in gastric, colorectal and pancreas cancer respectively, 34± 4.5, 33.7± 4, 30.6± 3.7. The most frequently seen symptoms are loss of weight, stomachache, constipation, and rectal hemorrhage, respectively. Gastric cancer was seen in 13 (43%) patients, colorectal cancer in 14 (46%) patients, and pancreatic cancer in 3 (11%) patients. Mean follow-up period were in gastric, colorectal and pancreas cancer respectively,13.9±7.8, 21.9±15.2, 25.3± 19.7 month. Survival rate were in gastric, colorectal and pancreas cancer respectively, 38% 71%, 66%. The lymph node involvement and advanced stage (Stage III and IV) were detected in 16 of the patients. 4 of the patients were diagnosed in Stage 1, 9 in Stage 2, 10 in Stage 3, and 7 in Stage 4.

Conclusion The malign gastrointestinal system tumors are also seen among younger than age 40 years, young adults. While gastric and colorectal cancers are seen more frequently, the incidence of pancreatic cancer is less. As histological type, the most frequently seen gastric cancer is signet ring cell adenocarcinoma. The lowest rate of survival is seen in gastric cancer cases.
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Keywords Young adult, gastric, pancreas, colorectal cancer.

Öz

Amaç *Çalışmamızda malign gastrointestinal sistem tümörlerinin genç erişkinlerde daha ileri evrelerde tanı aldığına ve daha agresif seyirli olduğuna vurgu yaparak erken tanının önemine dikkat çekmek, genç erişkinlerde de malign gastrointestinal sistem tümörü tanısının akılda tutulması gerektiğinin belirtilmesi amaçlanmıştır. Bu amaç ışığında klinik deneyimlerimiz paylaşılmıştır.*

Materyal ve Metod *Merkezimizde 2012-2016 yılları arasında ameliyat edilen 40 yaş altı mide, kolorektal ve pankreas kanserli 30 hasta çalışmaya dahil edildi. Hastaların verileri retrospektif olarak dosya kayıtlarından elde edildi. Hastaların tanıları, demografik özellikleri, ailesel kanser öyküleri, yapılan cerrahi ve cerrahi dışı tedavileri, patolojik evrelendirmeleri kayıt edildi. Ayrıca hastaların takip ve survival süreleri kayıt edildi.*

Bulgular *Kadın erkek oranı 0.57 idi. Ortalama yaş, mide kanseri, kolorektal kanser ve pankreas kanserinde sırasıyla 34± 4.5, 33.7± 4, 30.6± 3.7 idi. Hastalarda en sık görülen bulgular sırasıyla kilo kaybı, karın ağrısı, kabızlık ve rektal kanamaydı. Mide kanseri 13 (% 43), kolorektal kanser 14 (%46), pankreas kanseri 3 (%11) hastada görüldü. Ortalama takip süresi, mide kanseri, kolorektal kanser ve pankreas kanserinde sırasıyla 13.9±7.8, 21.9±15.2, 25.3± 19.7 aydı. Survival oranı, mide kanseri, kolorektal kanser ve pankreas kanserinde sırasıyla 38% 71%, 66% idi. Hastaların 16'sında lenf nodu tutulumu ve ileri evre (evre III- IV) hastalık tespit edildi.Hastaların 4'ü Evre 1, 9'u Evre 2, 10'u Evre 3, 7'si Evre 4 aşamasında tespit edildi.*

Sonuç *Malign gastrointestinal sistem tümörler kırk yaş altı genç erişkinlerde de görülmektedir. Mide kanserleri ve kolorektal kanserler sık görülürken, pankreas kanserinin görülme oranı daha düşüktür. Mide kanserlerinde histolojik tip olarak en sık signet ring cell adenocarcinoma görülmektedir. En düşük survival oranı ise mide kanserlerinde görülmüştür.*
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Anahtar Kelimeler *Genç erişkin, mide, kolorektal, pankreas, kanser*

Correspondence / Yazışma Adresi: Yrd. Doç. Dr. Erdal Uysal
Ali Fuat Cebesoy Bulvarı No: 45, Şehitkamil 27090 Gaziantep - Türkiye
P: +90 506 484 58 03 E-mail: drerdaluysal@hotmail.com

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INTRODUCTION

Majority of the malign gastrointestinal system tumors are stomach, colorectal, andpancreas-originated. Others originate from small bowels, biliary tract, and liver. In our study, the most frequently seen gastric, colorectal and pancreatic cancers were investigated. Malign gastrointestinal system tumors generally develop in advanced ages, but the incidence among the young adults is seen to increase gradually.[1,2] Malign gastrointestinalsystem tumors seen in advanced ages may be seen in young adult ages too. The incidence of gastric cancers among the young adults under 40 year-old is between [2]-8%.[3] This rate for pancreatic cancers varies between 0.1% and 0.3%.[4] The incidence of colorectal cancers among young adults varies between 2% and 10%.[5] In development of malign gastrointestinalsystem tumors developed in young adults, it is thought that family history, genetic mutations, and environmental factors play role.[6] But, the developmental mechanisms and factors of young adult malign gastrointestinal tumors haven't been clarified yet.

Prognosis of young adult malign gastrointestinal tumors is very bad. Among the reasons for that, late diagnosis, advanced phase of tumors at the moment of diagnosis, and their more invasive, more aggressive and undifferentiated structure may be specified.[5,7-10] Since the young adults seem healthier and cancer is generally recognized as the disease of advanced ages, the diagnosis is delayed and the disease is diagnosed in further phases[9].

In our study, by emphasizing that malign gastrointestinal system tumors are diagnosed in further phases in young adults and they course less aggressively, we aimed to draw attention to the importance of early diagnosis, and to remind that the diagnosis of malign gastrointestinal system tumors should be considered for young adults. For this purpose, our clinical experiences are shared.

MATERIALS and METHODS

Thirty patients under 40 year-old that have been operated in our center between the hear 2012 and 2016 for gastric, colorectal and pancreatic cancers were involved in our study. The data of patients were retrospectively obtained from their files. The actual statuses of the patients were obtained from the patients or their relatives by calling them. The diagnoses, demographical characteristics, familial cancer histories, surgeries and nonsurgical treatments, and pathological stages of the patients were recorded. Furthermore, the follow-up and survival durations of the patients were also recorded.The patients, information of whom cannot be accessed, and those over 40 year-old were excluded from the study. The results are presented in mean ± standard error. Because of the retrospective nature of studyethical approval is not required.

RESULTS

Thirty patients under 40 year-old that have been operated in department of General Surgery between the hear 2012 and 2016 for gastric, colorectal and pancreatic cancers were involved in our study.[11] of the patients were female, and 19 were male.The ratio of female/male was 0.57.There were gastric, colorectal and pancreatic cancer history in 1st degree relatives of 4 of patients having gastric cancer and 3 of patients having colorectal cancer.[12] of the patients had the history of smoking. The most frequently seen symptoms are loss of weight, stomachache, constipation, and rectal hemorrhage, respectively. Gastric cancer was seen in 13 (43%) patients, colorectal cancer in 14 (46%) patients, and pancreatic cancer in 3 (11%) patients. Colon resection was applied to 8 patients, subtotal gastrectomy to 7 patients, total gastrectomy to 6 patients, anterior resection to 6 patients, and pancreaticoduedonectomy to 3 patients. 4 of the patients were diagnosed in Stage 1, 9 in Stage 2, 10 in Stage 3, and 7 in Stage 4. Adjuvant chemotherapy was given to 27patients, while 8 patients were given radiotherapy (Table 1-4).

Table 1- Demographic characteristics of patients

	Gastric Cancer	Colorectal Cancer	Pancreas Cancer
N	13	14	3
Mean Age	34± 4.5	33.7± 4	30.6± 3.7
Mean Follow-up period (Month)	13.9±7.8	21.9±15.2	25.3± 19.7
Average life time (Month)	11.7±6.7	18.5±10.5	12
Survival Rate	38%	71%	66%
Family History (n)	4	3	0
F/M	3/13	7/14	1/3

N: Number of patients, F: Female, M:Male. Data was presented as mean± Standart Error (SE)

Table 2- Characteristics of patients with gastric cancer

Gender	Years	Histopatology	TNM	Stage	CT	RT	Follow (Mounth)	Survival
M	29	signet ring cell	T3N3M0	3B	+	-	16	Exitus
M	36	signet ring cell	T1N0M0	1	-	-	26	live
M	38	signet ring cell	T3N3M0	3B	+	-	5	live
M	40	Adenocarcinoma	T3N0M0	2A	+	-	12	live
F	32	Adenocarcinoma	T3N0M0	2A	+	-	26	live
M	39	signet ring cell	T3N2M1	4	+	-	16	Exitus
M	28	signet ring cell	T3N1M1	4	+	-	3	Exitus
M	37	signet ring cell	T3N1M1	4	+	-	6	Exitus
F	36	Adenocarcinoma	T3N2M1	4	+	+	4	Exitus
M	31	Adenocarcinoma	T3N0M1	4	+	-	13	Exitus
M	39	Adenocarcinoma	T3N2M0	3B	+	-	14	Exitus
F	27	signet ring cell	T3N2M0	3B	+	-	22	Exitus
M	36	Adenocarcinoma	T3N1M0	3A	+	-	18	live

F: Female, M: Male, TNM: Classification of Malignant Tumours, CT: Chemotheraphy, RT: Radiotherapy

Table 3- Characteristics of patients with colorectal cancer

Gender	Years	Histopatology	TNM	Stage	CT	RT	Follow (Mounth)	Survival
F	29	Adenocarcinoma	T2N0M0	1	-	-	17	live
F	32	Adenocarcinoma	T3N1M0	3B	+	+	21	live
M	34	signet ring cell	T3N2M0	3B	+	-	15	Exitus
F	32	Adenocarcinoma	T3N0M0	2A	+	-	2	live
M	34	Adenocarcinoma	T3N0M0	2A	+	+	7	live
M	37	Adenocarcinoma	T3N0M0	2A	+	-	36	live
F	39	Adenocarcinoma	T3N2M1	4	+	-	10	Exitus
M	38	Adenocarcinoma	T3N1M0	3B	+	+	34	Exitus
M	37	Adenocarcinoma	T3N0M0	2A	+	+	25	live
M	28	Adenocarcinoma	T3N0M0	2A	+	+	15	Exitus
F	32	Adenocarcinoma	T2N0M0	1	-	-	7	live
F	40	Adenocarcinoma	T3N0M0	2A	+	+	60	live
F	38	Adenocarcinoma	T3N2M0	3B	+	-	27	live
M	28	Adenocarcinoma	T3N2bM0	3C	+	-	31	live

F: Female, M: Male, TNM: Classification of Malignant Tumours, CT: Chemotheraphy, RT: Radiotherapy

Table 4- Characteristics of patients with pancreatic cancer

Gender	Years	Histopatology	TNM	Stage	CT	RT	Follow (Mounth)	Survival
F	29	Adenocarcinoma	T3N0M0	2	+	-	16	live
M	35	Adenocarcinoma	T2N0M0	1	+	-	48	live
M	28	Adenocarcinoma	T3N2M1	4	+	+	12	Exitus

F: Female, M: Male, TNM: Classification of Malignant Tumours, CT: Chemotheraphy, RT: Radiotherapy

DISCUSSION

The incidence of cancer among both of young and elderly people gradually increases. Pancreatic cancer is seen more frequently among young adult males.[11] Gastric cancer, however, is more frequently seen in young adult males and females in equal frequencies. Some sources report that it is seen more frequently among females younger than 30 year-old.[12-13] In a study on <40 year-old colorectal cancer patients, the ratio of females to males has been found to be 75%.[14] In our study, however, the female/male patient ratio for gastric, colon, and pancreatic cancer patients was found to be 23%, 50% and 33%, respectively.

In our study, the most frequent symptoms for application among young adults were found to be epigastric pain, weight loss, and chronic dyspeptic complaints. Those of pancreatic cancer were stomachache andweight loss, while those of colon cancer were constipation, stomachache, and rectal hemorrhage. But, for 2 gastric cancer and 1 colon cancer patients, the diagnoses were made coincidentally since there was no complaint.In literature, it has been reported that the cancer diagnosis has been made coincidentally for the gastric cancer patients having no symptom.[15] The symptoms detected in our study were found to be in parallel with the previous studies.[9,16,17]

In 7 (23%) of our patients, the peritoneal carcinomatosis was detected. 5 of those patients had gastric cancer, while 1 had colon and 1 had pancreatic cancer. In a study, it has been reported that, among 18 young adult patients having gastric cancer, 15 were diagnosed with distant metastasis at the moment of diagnosis[18]. In another study, it has been reported that, among <40 year-old young adult patients having pancreatic cancer, 5 patients had distant metastasis at the moment of diagnosis[9]. In our study, distant metastasis was detected in 7 (23%) patients. Metastases focused on liver, peritonea, and lung.

Themalign gastrointestinal tumors seen in young adults are generally linked to genetic factors. The importance of genetic factors among young adults is more than that of environmental factors[19]. Especially for the individuals having gastric, colon, and pancreatic cancer history in their families, it has been reported that the gastrointestinal cancer development risk is higher.[6,20,21] In patients having first degree relatives diagnosed with gastric cancer in early ages, the incidence of gastric cancer has been reported to be 25%.[22] Napoleon Bonaparte, his father, grandfather and many other relatives have died of gastric cancer.[23] In our study, there was malign gastrointestinal tumor history in first degree relatives of 7 (23%)patients. Inherited or familial gastric cancer and hereditary diffuse gastric cancer are frequently seen among <40 year-old patients. Hereditary nonpolyposis colorectal cancer (Lynch syndrome II) is accompanied with the increased risk of gastric cancer.[24] In familial pancreatic cancer (FPC), pancreatic cancers may be seen at early ages. In families with FPC, the mutations have been found in BRCA 2, PALB2, and ATM genes[25]. More than 10% of colorectal cancers are seen among + year-old patients. Among young adults, it develops generally in conjunction with Lynch syndrome, familial adenomatous polyposis hereditary colorectal cancer syndromes.[26] In colorectal cancers developed in patients younger than 50 year-old, a relation with germline TP53 mutation has been detected.[27] No gene and mutation analysis was performed for any of the patients in our study.

In young adult malign gastrointestinal tumors, the rate of lymph node involvement is higher when compared to elderly population. Moreover, the rate of Stage IV disease at the moment of diagnosis is higher among young adults, when compared to elderly population. For this reason, the curative surgery rates also decrease[14,28]. In our study, the lymph node involvement and advanced stage (Stage III and IV) were detected in 16 of the patients. The findings were in harmony with the literature.

In a study of Isık et al., they have reported that the incidence of advanced stage metastatic differentiated adenocarcinoma among<40 year-old gastric cancers increased.[29] In another study, the rate of poorly differentiated signet ring cell adenocarcinoma has been found to be 44%.[19] In our study, the advanced stage differentiated gastric adenocarcinoma was found in 3 patients. In 7 (53%) of the patients, histological type was determined to be signet ring cell adenocarcinoma. At the moment of diagnosis, the distant metastasis was found in 4 patients.

The distant metastasis or further evolution of the disease among the young adults diagnosed with pancreatic cancer is more likely. In a study.[36] 3% of the pancreatic cancers in young adults have been reported to be in M1 stage.[9] The advanced stage disease ratio in pancreatic cancers seen among young adults is also higher. In their study, Berry et al. have determined 50% of the pancreatic cancers seen in young adults to be in advanced level. As the reason for that, the misdiagnosis, the low level of awareness, and the delayed diagnosis have been reported[30]. In our study, the advanced stage pancreatic cancer was found only in 1 patient.

Among the <40 year-old colorectal cancer patients, the survival rate is low and the incidence of advanced stage disease is high. In a study, the rate of survival for 5 years has been found to be 26% among the colorectal cancer patients[31]. In our study, the survival rate among the colorectal patients with approximately 21.9±15.2 months of follow-up has been found to be 71%. The higher survival rate found in our study, when compared to literature, can be thought to be caused from follow-up duration shorter than 5 years and the patient group consisting of patients at relatively earlier stage disease. The mean duration of survival among the young adult gastric cancer patients with curative resection has been found to be 70 months[32]. In another study, the same value has been found to be. [10] 3 months.[17] In our study, however, the mean survival rate for gastric cancer patients for 13.9± 7.8 months of follow-up was found to be 11.7±6.7 months.Our findings are in harmony with the literature.

The R0 resection chance is only 15% for pancreatic cancer patients.In general, the rate of survival for a year has been reported to be 20%, while that for 5 years has been reported to be less than 5%.[33] The duration of survival of our excitus pancreatic cancer patient was 12 months. Our work did not take place malignant tumors like lymphoma, butrare pathologies such as rectal lymphomamust be kept in mind indiagnosis[34]. Periportallymphadenopathyshould be investigated on suspicion of lymphoma.[35]

In our study, there are certain limitations due to the retrospective design. The number of patients remained limited because of the difficulties in accessing the patients, despite there were more patients. Also this study has some limitations due to small number of patients. For this reason statistical analysis was not done. The number of patients can be improved through multicentric study. The lack of genetic and mutation analysis of the patients and their relatives is another limiting factor.

Among the <40 year-old young adults, the majority of cancer cases are observed between 30th and 40th ages. In formation of young adult malign gastrointestinalsystem tumors, the most important factor is thought to be the genetic factor. The incidence of malign gastrointestinalsystem tumors among the young adults gradually increases. The malign gastrointestinalsystem tumors in young adults can be detected in further stages, and these tumors courses more aggressively.For this reason, the complaints of the patients in this group should be listened carefully and the malign gastrointestinal tumors should be kept in mind. The individuals having 1st degree relatives diagnosed with malign gastrointestinal tumor should be followed-up more closely. Under favor of early diagnosis, the chance of curative surgery increases.

CONCLUSION

The malign gastrointestinal system tumors are also seen among younger than age 40 years, young adults. While gastric and colorectal cancers are seen more frequently, the incidence of pancreatic cancer is less. As histological type, the most frequently seen gastric cancer is signet ring cell adenocarcinoma. The lowest rate of survival is seen in gastric cancer cases.

Conflict of Interest

No conflict of interest was declared by the authors.

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