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ANALYSIS OF THE CAUSES OF LATE DIAGNOSIS OF MALIGNANT NEOPLASMS OF THE STOMACH AND COLON IN THE ARAN ECONOMIC REGION OF THE REPUBLIC OF AZERBAIJAN

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S U M M A R Y

Introduction. This study investigates the prevalence and causes of late diagnosis of stomach and colon cancer in the Aran Economic Region of Azerbaijan. The region is characterized by a predominantly female population (64%) and a high proportion of individuals over 40 years (59%).

Objective. To determine the prevalence of stomach and colon cancer and identify the key reasons for delayed diagnosis in the Aran Economic Region of Azerbaijan.

Materials and Methods. The study was conducted based on data regarding the incidence of stomach and colon cancer in the Aran region. Cases diagnosed at various stages, reasons for diagnostic delays, and correlations between physician experience, qualifications, and diagnosis stage were analyzed. Statistical analysis included the evaluation of correlation significance ($p<0.001$).

Results and Discussion. The stomach cancer incidence was higher among males (15.3 per 100,000) compared to females (6.7 per 100,000). Most stomach cancer cases were diagnosed at stages III (36.2%) and IV (35.7%), while colon cancer was predominantly detected at stages I-II (45.6%). Key reasons for delayed diagnosis included late patient presentation to healthcare facilities (29.42% for stomach cancer, 28.73% for colon cancer), diagnostic errors (15.30% for stomach, 18.09% for colon), and latent disease progression (15.96% for colon). Incomplete history collection and low oncological awareness among outpatient physicians significantly contribute to late diagnosis. A strong correlation was found between physician experience, qualifications, and late-stage diagnoses. ($p<0.001$).

Conclusions. Late diagnosis of stomach and colon cancer in the Aran Economic Region is driven by delayed patient presentation, diagnostic errors, and insufficient oncological awareness among physicians. Measures to enhance medical personnel training and public awareness are necessary to improve early diagnosis.

Keywords: stomach cancer; colon cancer; late region; oncological alertness; diagnostic errors; patient delay.

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Т Ұ Ж Ы Р Ы М

ӘЗІРБАЙЖАН РЕСПУБЛИКАСЫНЫҢ АРАН ЭКОНОМИКАЛЫҚ АУДАНЫНДА АСҚАЗАН ЖӘНЕ ТОҚ ІШЕК ҚАТЕРЛІ ІСІКТЕРІНІҢ КЕШ ДИАГНОЗ ҚОЙЫЛУ СЕБЕПТЕРІН ТАЛДАУ

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Кіріспе. Бұл зерттеу Әзірбайжанның Аран экономикалық аймағында асқазан және тоқ ішек обырының кеш диагноз қойылуының таралуы мен себептерін зерттеуге арналған. Аймақта әйелдер басым (64%) және 40 жастан асқан тұрғындар (59%) көп.

Зерттеу мақсаты. Аран экономикалық аймағында асқазан және тоқ ішек обырының таралуын анықтау, сондай-ақ осы аурулардың кеш диагноз қойылуының негізгі себептерін анықтау.

Материал және әдістері. Зерттеу Аран аймағындағы асқазан және тоқ ішек обырының аурушаңдық деректері негізінде жүргізілді. Диагноздың әртүрлі кезеңдеріндегі жағдайлар, диагностиканың кешігу себептері, сондай-ақ дәрігерлердің тәжірибесі мен біліктілігі және диагноз қою кезеңі арасындағы корреляциялар талданды. Статистикалық талдау корреляциялардың маңыздылығын бағалауды қамтыды ($p<0,001$).

Нәтижелері және талқылау. Асқазан обырының аурушаңдығы ерлер арасында (100,000-ға 15,3) әйелдерге қарағанда (100,000-ға 6,7) жоғары. Асқазан обырының көптеген жағдайлары III (36.2%) және IV (35,7%) кезеңдерде диагноз қойылады, ал тоқ ішек обыры көбінесе I-II кезеңдерде (45,6%) анықталады. Кеш диагноз қоюдың негізгі себептеріне пациенттердің медициналық мекемелерге кеш жүгінуі (асқазан обыры үшін 29,42%, тоқ ішек обыры үшін 28,73%), диагностикалық қателіктер (асқазан үшін 15,30%, тоқ ішек үшін 18,09%) және аурудың жасырын дамуы (тоқ ішек үшін 15,96%) жатады. Анамнездің толық жиналмауы және амбулаториялық дәрігерлердің онкологиялық сақтығының төмендігі кеш диагноз қоюға айтарлықтай ықпал етеді. Дәрігерлердің тәжірибесі мен біліктілігі және кеш кезеңдердегі диагноздар арасында үлкен корреляцияның орын алып отырғандығы анықталды күшті корреляция анықталды ($p<0,001$).

Қорытынды. Аран аймағында асқазан және тоқ ішек обырының кеш диагноз қойылуы пациенттердің кеш жүгінуі, диагностикалық қателіктер және дәрігерлердің онкологиялық хабар-

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дарлығының жеткіліксіздігімен байланысты. Медициналық персоналдың біліктілігін және халықтың хабардарлығын арттыру бойынша шаралар ерте диагностиканы жақсарту үшін қажет.

Негізгі сөздер: асқазан обыры; тоқ ішек обыры; кеш диагноз; Аран экономикалық аймағы; онкологиялық хабардарлық; диагностикалық қателіктер; пациенттердің кеш жүгінуі.

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Р Е З Ю М Е

АНАЛИЗ ПРИЧИН ПОЗДНЕЙ ДИАГНОСТИКИ ЗЛОКАЧЕСТВЕННЫХ НОВООБРАЗОВАНИЙ ЖЕЛУДКА И ТОЛСТОЙ КИШКИ В АРАНСКОМ ЭКОНОМИЧЕСКОМ РАЙОНЕ АЗЕРБАЙДЖАНСКОЙ РЕСПУБЛИКИ

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Введение. Данное исследование посвящено изучению распространенности и причин поздней диагностики рака желудка и толстой кишки в Аранском экономическом регионе Азербайджана. Регион характеризуется преобладанием женского населения (64%) и лиц старше 40 лет (59%).

Цель исследования. Определить распространенность рака желудка и толстой кишки, а также выявить ключевые причины поздней диагностики этих заболеваний в Аранском экономическом регионе Азербайджана.

Материал и методы. Исследование проведено на основе данных о заболеваемости раком желудка и толстой кишки в Аранском регионе. Анализировались случаи диагностики на различных стадиях, причины задержки диагностики, а также корреляции между опытом и квалификацией врачей и стадией диагностики. Статистический анализ включал оценку значимости корреляций ($p<0,001$).

Результаты и обсуждение. Заболеваемость раком желудка выше среди мужчин (15,3 на 100,000) по сравнению с женщинами (6.7 на 100,000). Большинство случаев рака желудка диагностируются на стадиях III (36,2%) и IV (35,7%), тогда как рак толстой кишки чаще выявляется на стадиях I-II (45,6%). Основные причины поздней диагностики включают позднее обращение пациентов в медицинские учреждения (29,42% для рака желудка, 28,73% для рака толстой кишки), диагностические ошибки (15,30% для желудка, 18,09% для толстой кишки) и скрытое прогрессирование заболевания (15,96% для толстой кишки). Неполный сбор анамнеза и низкая онкологическая настороженность среди врачей амбулаторного звена существенно способствуют поздней диагностике. Установлена сильная корреляция между опытом и квалификацией врачей и поздними стадиями диагностики ($p<0,001$).

Выводы. Поздняя диагностика рака желудка и толстой кишки в Аранском регионе обусловлена поздним обращением пациентов, диагностическими ошибками и недостаточной онкологической осведомленностью врачей. Необходимы меры по повышению квалификации медицинского персонала и информированности населения для улучшения ранней диагностики.

Ключевые слова: рак желудка; рак толстой кишки; поздняя диагностика; экономический регион Арана; онкологическая осведомлённость; диагностические ошибки; задержка в обращении пациентов.

Для цитирования: Гасымов Р.А. Анализ причин поздней диагностики злокачественных новообразований желудка и толстой кишки в Аранском экономическом районе Азербайджанской Республики // Медицина (Алматы). 2025;2(242):2-5. doi: 10.31082/1728-452X-2025-242-2-2-5

Introduction. Active and timely detection of patients with malignant neoplasms is a primary task of clinical medicine [1]. The prevalence of stomach and colon cancer among the population of the Aran Economic Region has been studied [2, 3]. In the region's population structure, women predominate (64%), and individuals over 40 years of age account for 59%.

This study aims to analyze the distribution of stomach and colon cancer stages and identify the primary reasons for delayed diagnosis in the Aran Economic Region.

MATERIAL AND METHODS

The study analyzed statistical data on the incidence of stomach and colon cancer in the Aran Economic Region of Azerbaijan, focusing on the distribution of disease stages (I-IV) across various administrative districts. Data were collected from forms 027-28 for the period 2018-2021, which included information on the reasons for delayed diagnosis. The study population included patients diagnosed with malignant neoplasms of the stomach and colon. Statistical analysis was performed to assess the correlation between physician experience, diagnostic practices, and the

stage of cancer at diagnosis. The significance of correlations was evaluated using p-values ($p<0.001$).

RESULTS

According to statistical studies, the incidence of stomach cancer among the male population of the Republic of Azerbaijan is twice as high as among females: 15.3 per 100,000 and 6.7 per 100,000, respectively [4]. This pathology is most often diagnosed at stage III. In the Aran Economic Region, the majority of patients with malignant stomach pathology are diagnosed with late-stage cancers (stages III and IV) (Table 1) [5].

Table 1 - **Distribution of Patients with Malignant Stomach Neoplasms by Stage in the Aran Economic Region**

Region/District	Stages I-II	Stage III	Stage IV
Republic of Azerbaijan	33.5%	33.7%	32.8%
Aran Economic Region	28.1%	36.2%	35.7%
Beylagan District	23.0%	38.5%	38.5%
Barda District	36.4%	40.9%	22.7%
Neftchala District	37.5%	37.5%	25.0%
Goychay District	21.4%	28.6%	50.0%
Bilasuvar District	31.2%	18.8%	50.0%
Imishli District	33.3%	33.3%	33.3%
Salyan District	35.7%	35.7%	28.6%
Sabirabad District	18.2%	60.6%	21.2%
Saatly District	20.0%	50.0%	30.0%
Zardab District	12.5%	25.0%	62.5%
Kurdamir District	33.3%	22.2%	44.5%
Agjabedi District	25.0%	50.0%	25.0%
Yevlakh District	-	100.0%	-
Agdash District	25.0%	37.5%	37.5%
Hajigabul District	15.4%	61.5%	23.1%
Ujar District	22.2%	33.3%	44.5%
Mingachevir City	66.7%	20.8%	12.5%
Shirvan City	41.6%	37.5%	20.9%

The data show that patients with stages III and IV predominate in the region (36.2% and 35.7%, respectively). At these stages, complete recovery is unlikely. The distribution varies across districts, with some, like Zardab (62.5% stage IV) and Yevlakh (100% stage III), showing particularly high rates of late-stage diagnoses, while Mingachevir (66.7% stages I-II) and Shirvan (41.6% stages I-II) have higher early-stage detection rates.

Colon cancer in the Aran Economic Region was mostly detected at stages I-II (45.6%), followed by stage III (32.1%), and stage IV (22.3%) (Table 2) [6].

Table 2 - **Distribution of Patients with Malignant Colon Neoplasms by Stage in the Aran Economic Region**

Region/District	Stages I-II	Stage III	Stage IV
Republic of Azerbaijan	39.3%	33.6%	27.1%
Aran Economic Region	45.6%	32.1%	22.3%
Beylagan District	25.0%	25.0%	50.0%
Barda District	40.0%	40.0%	20.0%
Neftchala District	75.0%	25.0%	-
Goychay District	41.6%	41.6%	16.8%
Bilasuvar District	40.0%	40.0%	20.0%
Imishli District	75.0%	25.0%	-
Salyan District	-	33.3%	66.7%
Sabirabad District	33.3%	50.0%	16.7%
Saatly District	75.0%	25.0%	-
Zardab District	100.0%	-	-
Kurdamir District	18.2%	27.3%	54.5%
Agjabedi District	60.0%	40.0%	-
Yevlakh District	16.7%	33.3%	50.0%
Agdash District	50.0%	33.3%	16.7%
Hajigabul District	75.0%	25.0%	-
Ujar District	25.0%	50.0%	25.0%
Mingachevir City	55.5%	27.8%	16.7%
Shirvan City	52.6%	31.6%	15.8%

The reasons for delayed diagnosis of stomach cancer were analyzed using data from forms 027-28 (2018–2021) (Table 3).

The primary reasons for delayed diagnosis of stomach cancer were delayed seeking medical care (29.42%) and physician diagnostic errors (15.30%) [7, 8].

For colon cancer, similar data were analyzed (Table 4).

The primary reasons for delayed colon cancer diagnosis were latent disease progression (15.96%), delayed seeking medical care (28.73%), and physician diagnostic errors (18.09%) [9, 10].

Table 3 - **Main Causes of Delayed Diagnosis of Patients with Malignant Stomach Neoplasms in the Aran Economic Region (2018–2021)**

Causes of Delay	Years 2018-2021	Average Rate
Delayed seeking medical care	25	29.42%
Diagnostic difficulties	8	9.41%
Patient refusal of examination	3	3.52%
Incomplete examination	5	5.89%
Avoiding diagnostic errors	13	15.30%
Weight loss	8	9.41%
Loss of appetite	7	8.23%
Nausea	5	5.89%
Vomiting	7	8.23%
Cause not identified	4	4.70%

Table 4 - **Diagnosis of Patients with Malignant Colon Neoplasms in a Low-Income Economic Region (2018–2021)**

Causes of Delay	Years 2018–2021	Average Rate
Latent disease progression	15	15.96%
Delayed seeking medical care	27	28.73%
Diagnostic difficulties	12	12.76%
Incomplete examination	|8	|8.51%
Prolonged examination	5	5.31%
Avoiding diagnostic errors	17	18.09%
Patient refusal of examination	6	6.39%
Cause not identified	4	4.25%

DISCUSSION

The high prevalence of late-stage (III and IV) stomach and colon cancer diagnoses in the Aran Economic Region indicates significant challenges in early detection [11, 12]. For stomach cancer, delayed seeking medical care (29.42%) and physician diagnostic errors (15.30%) were the leading causes of late diagnosis. Patients often present with symptoms such as abdominal pain (19.90%), loss of appetite (8.23%), weight loss (9.41%), nausea (5.89%), and vomiting (8.23%) persisting for over a year, yet these are not always thoroughly investigated [13]. In 60% of cases, the symptoms persist for over a year, and 70% of patients have metastases at diagnosis (lymph nodes – 30%, liver – 15%, lungs – 20%, and ascites – 10%).

For colon cancer, latent disease progression (15.96%) and delayed seeking medical care (28.73%) were the significant factors [14,15]. Symptoms such as abdominal pain (60%), anemia, blood/mucus/pus in stool (23.10%), tenesmus (2.70%), and pain during defecation (13.92%) were often overlooked. At diagnosis, 9.55% of patients exhibited complications such as ascites (1.15%), iron deficiency anemia (40.0%), intestinal obstruction (39.14%), bleeding (41.22%), and metastases (lymph nodes – 18.16%, liver – 8.10%, lungs – 5.20%) [16].

In one-third of cases, patient delay in seeking care contributes to late diagnosis. Diagnostic difficulties account for 9.4% of stomach cancer cases and 19.76% of colon cancer cases, highlighting the need for improved outpatient practices. Physicians often forgo simple diagnostic methods like rectal examination (8.50% for gastritis, 10.80% for peptic ulcer, 8.45% for stool disorders) or fibrogastroscopy and fecal occult blood testing (28.50%). Late diagnosis rates are higher among physicians with less experience (19.30-29.50% for <5 years) compared to those with more experience (9.70-12.70% for ≥10 years), with a strong correlation between physician experience and late-stage diagnoses ($p<0.001$). An inverse correlation exists between physician qualification and late-stage diagnoses ($p<0.001$).

CONCLUSIONS

1. The number of patients with stage III-IV stomach cancer remains consistently high.

2. The primary reason for delayed diagnosis of malignant stomach neoplasms is delayed seeking medical care (29.42%). Incomplete primary history collection leads to the disease not being suspected in time. At diagnosis, 19.90% of patients report abdominal pain for over a year, 8.83% report loss of appetite, 9.41% report weight loss, 5.89% report nausea, and 8.23% report vomiting. Every second patient reports weakness, increased fatigue, poor mood, and gray skin tone. In 50% of cases, symptoms persist for over a year, and 18.25% of patients have metastases at diagnosis (lymph nodes – 8.10%, liver – 5.40%, lungs – 3.50%, ascites – 2.70%).

3. The main reasons for delayed diagnosis of malignant colon neoplasms include latent disease progression (15.96%), delayed seeking medical care (28.73%), and physician diagnostic errors (18.09%).

4. Comprehensive analysis of outpatient records showed that preventive measures are implemented at an extremely low level, patients are not fully examined, and oncological awareness among outpatient clinic physicians is low.

5. A strong correlation was found between the physician's years of outpatient practice and the number of patients with stage IV disease ($p<0.001$).

6. A strong inverse correlation exists between the qualification of outpatient clinic physicians and the proportion of patients with late-stage disease ($p<0.001$).

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