

вого шторма, был увеличен значительно и прямо коррелировал с кожными проявлениями.

ЛИТЕРАТУРА/REFERENCES

- Chen LD, Li H, Ye YM, Wu Z, Huang YP, Zhang WL, Lin L. A COVID-19 patient with multiple negative results for PCR assays outside Wuhan, China: a case report. *BMC Infect Dis.* 2020 Jul 16; 20(1):517.
- WHO: Laboratory diagnostics for novel coronavirus.2020. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/laboratory>.
- Bai Y., Yao L., Wei T., Tian F., Jin D.Y., Chen L., et. al.: Presumed asymptomatic carrier transmission of COVID-19. *Jama* 2020; 323: pp. 1406-1407.
- The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team: The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) — China, 2020. *China CDC Weekly* 2020; 2: pp. 113-122.
- Nishiura H., Kobayashi T., Suzuki A., Jung S.M., Hayashi K., Kinoshita R., et. al.: Estimation of the asymptomatic ratio of novel coronavirus infections (COVID-19). *Int J Infect Dis* 2020; 94: pp. 154-155.
- Mizumoto K., Kagaya K., Zarebski A., Chowell G.: Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020. *Euro Surveill* 2020; 25: pp. 2000180.
- Ki M.: Epidemiologic characteristics of early cases with 2019 novel coronavirus (2019-nCoV) disease in Korea. *Epidemiol Health* 2020; 42:
- Chen J.: Pathogenicity and transmissibility of 2019-nCoV-A quick overview and comparison with other emerging viruses. *Microb Infect* 2020; 22: pp. 69-71.
- Gao W.J., Li L.M.: Advances on presymptomatic or asymptomatic carrier transmission of COVID-19. *Chin J Epidemiol* 2020; 41: pp. 485-488.
- Zou L., Ruan F., Huang M., Liang L., Huang H., Hong Z., et. al.: SARS-CoV-2 viral load in upper respiratory specimens of infected patients. *N Engl J Med* 2020; 382: pp. 1177-1179.
- Joob B., Wiwanitkit V.: COVID-19 can present with a rash and be mistaken for dengue. *J Am Acad Dermatol* 2020; 82: pp. e177.
- Recalcati S.: Cutaneous manifestations in COVID-19: a first perspective. *J Eur Acad Dermatol Venereol* 2020; [e-pub ahead of print]
- Alramthan A., Aldaraji W.: A case of COVID-19 presenting in clinical picture resembling chilblains disease. First report from the Middle East. *Clin Exp Dermatol* 2020; [e-pub ahead of print]
- Kolivras A., Dehavay F., Delplace D., et. al.: Coronavirus (COVID-19) infection-induced chilblains: a case report with histopathological findings. *JAAD Case Rep* 2020; [e-pub ahead of print]
- Tang N., Bai H., Chen X., Gong J., Li D., Sun Z.: Anticoagulant treatment is associated with decreased mortality in severe coronavirus disease 2019 patients with coagulopathy. *J Thromb Haemost* 2020; 18: pp. 1094-1099.

УДК: 578.834.1-07

KORONAVIRUS INFEKSIONLI BEMORLARDA KASALLIKNING KLINIK KO'RINISHLARI

B.K. Begmatov, B.B. Oganiezov

Тошкент давлат стоматология институти, Рўз соғлиқни сақлаш вазирлиги

XULOSA

Maqsad. Koronavirusli infeksiya tashxisi tasdiqlangan bemorda kasallanishning og'irlik darajalarini uchrash chastotasi va kasallik kechishining og'irlik darajasiga ta'sir qiluvchi omillar o'rganish.

Material va metodlar. Kuzatuv davomida Respublika Maxsus 2-son Zangiota shifoxonasida 2020-yil avgust-dekabr oylarida koronavirusli infeksiya tashxisi bilan davolangan bemor orasidan 311 nafarining kasallik tarixi hujjatlari olindi hamda retrospektiv usulda o'rganildi. Bemorlarda kasallik kechishining og'irlik darajasini baholashda klinik, laborator va instrumental

tahlil usullari qo'llanilgan. 311 nafar bemorning 173 (55,6%) nafari ayol, 138 (44,4%) nafari erkak bo'lib chiqdi. Bemorlarning o'rtacha yoshi 49,5 ga teng. Bemorlarning 53 nafari yondosh kasalliklar (qon-tomir tizimi kasalliklari, qandli diabet, o'pkaning surunkali kasalliklari, o'sma kasalliklari, buyrakning surunkali kasalliklari, semirish) bilan og'riganligi aniqlandi, 103 nafar bemorda zararli odat – tamaki chekishi qayd qilindi. Bemorlarning barchasida Covid-19 tashxisi polimer zanjir reaksiyalari (PZR) tahlili orqali tasdiqlangan. Barcha bemorlar kasallik kechishining og'irlik darajasiga qarab 4 guruhga bo'lindi.

Natija. Olib borilgan tahlil asosida shu ma'lum bo'ldiki, dastlabki tashxisot vaqtida kasallik I guruh - 68 nafar (21,9%) bemorda simptomsiz, II guruh - 183 nafar (58,8%) bemorda yengil, III guruh - 57 nafar (18,3%) bemorda o'rta og'ir hamda IV guruh - 3 nafar (1%) bemorda og'ir shaklda kechganligi aniqlandi. Yondosh kasalliklari bor bemorlar I guruhda 4 nafarni (5,9%), II guruhda 21 nafarni (11,5%), III guruhda 25 nafarni (43,9%) hamda IV guruhda 3 nafarni (100%) tashkil etdi. Zararli odatlari mavjud bemorlar I guruhda 11 nafarni (16,2%), II guruhda 67 nafarni (36,6%), III guruhda 23 nafarni (40,4%) hamda IV guruhda 2 nafarni (66,7%) tashkil etdi.

Xulosa. Tadqiqotlar shuni ko'rsatdiki, koronavirusli infeksiya bilan og'irigan bemorlar orasida kasallikning yengil kechishi ko'proq kuzatilgan. Kasallik kechishining og'irlik darajasiga yondosh kasalliklarning hamda zararli odatlar mavjudligi salbiy ta'sir ko'rsatgan. Kasallikning simptomsiz kechadigan turi bilan og'irigan bemorlar shifokorga murojaat qilmasligi tufayli kasallikning tarqalish zanjirida faol ishtirokchi bo'lib hisoblanadi.

Kalit so'zlar: koronavirusli infeksiya, og'ir kechivchi o'tkir respirator sindrom

РЕЗЮМЕ

Цель: Изучить степень тяжести заболевания у пациента с диагностированной коронавирусной инфекцией, частоту возникновения и факторы, влияющие на тяжесть заболевания.

Материалы и методы. В ходе наблюдения использована ретроспективная база данных пациентов, пролеченных с диагнозом "Коронавирусная инфекция" в период

август-декабрь 2020 года в Республиканской Специализированной Больнице Зангиота №2. Для оценки степени тяжести заболевания у пациентов использовались клинические, лабораторные и инструментальные методы анализа. Из 311 пациентов 173 (55,6%) составляли женщины и 138 (44,4%) мужчины. Средний возраст пациентов - 49,5 лет.

53 пациентов были диагностированы сопутствующие заболевания (сердечно-сосудистые заболевания, сахарный диабет, хронические заболевания легких, рак, хроническое заболевание почек, ожирение), 103 пациента имели вредную привычку - курение. У всех пациентов диагноз Covid-19 был подтвержден анализом полимерных цепных реакций (ПЦР). Все пациенты были разделены на 4 группы по степени тяжести болезни.

Результат. На основании анализа установлено, что на момент постановки первичного диагноза заболевание протекало бессимптомно в I группе - 68 (21,9%) пациентов, легкое во II группе - у 183 (58,8%) пациентов, среднетяжелая в III группе у 57 (18,3%) пациентов и тяжелое IV группе у 3 (1%) -

пациентов. Пациенты с сопутствующими заболеваниями 4 (5,9%) в I группе, 21 (11,5%) во II группе, 25 (43,9%) в III группе и 3 (100%) в IV группе. Больные с вредными привычками составили 11 (16,2%) человек в группе I, 67 (36,6%) человек во II группе, 23 (40,4%) человека в группе III и 2 (66,7%) человека в группе IV.

Выводы. Клинический анализ показал, что у пациентов с коронавирусной инфекцией чаще встречается легкое течение заболевания. На тяжесть заболевания негативно повлияло наличие сопутствующих заболеваний и вредных привычек. Больные с бессимптомными формами заболевания считаются активными участниками цепи передачи заболевания, поскольку они не обращаются к врачу.

Ключевые слова: коронавирусная инфекция, тя-желый острый респираторный синдром

ABSTRACT

The aim of the study was to study the severity of the disease in a patient diagnosed with coronavirus infection, the incidence and factors influencing the severity of the disease.

Materials and methods. During the observation, a retrospective database of patients treated with a diagnosis of Coronavirus infection was used in the period August-December 2020 at the Republican Specialized Hospital of Zangiota №2. Clinical, laboratory and instrumental methods of analysis were used to assess the severity of the disease in patients. Of the 311 patients, 173 (55.6%) were women and 138 (44.4%) were men. The average age of patients is

49.5 years. 53 patients were diagnosed with concomitant diseases (cardiovascular diseases, diabetes mellitus, chronic lung diseases, cancer, chronic kidney disease, obesity), 103 patients had a bad habit - smoking. In all patients, the diagnosis of Covid-19 was confirmed by polymer chain reaction (PCR) analysis. All patients were divided into 4 groups according to the severity of the disease.

Results. Based on the analysis, it was found that at the time of the initial diagnosis, the disease was asymptomatic in group I - 68 (21.9%) patients, lung in group II - in 183 (58.8%) patients, moderate in group - in 57 (18, 3%) patients and severe group IV in 3 (1%) - patients. Patients with concomitant diseases 4 (5.9%) in group I, 21 (11.5%) in group II, 25 (43.9%) in group III and 3 (100%) in group IV. Patients with bad habits were 11 (16.2%) people in group I, 67 (36.6%) people in group II, 23 (40.4%) people in group III and 2 (66.7%) people in group group IV.

Conclusion. Clinical analysis showed that patients with coronavirus infection are more likely to have a mild course of the disease. The severity of the disease adversely affected by the presence of concomitant diseases and bad habits. Patients with asymptomatic

forms of the disease are considered active participants in the chain of transmission of the disease, since they do not go to the doctor.

Keywords: coronavirus infection, severe acute respiratory syndrome.

Muammoning dolzarbligi. Koronavirus 2019-yil oxirlarida Xitoyda epidemiya chaqirgan qo'zg'atuvchi bo'lib, 2020-yilda boshqa davlatlarga tarqalishi tufayli pandemiya holatini yuzaga keltirdi. 2020-yil fevral oyida Butun Jahon Sog'liqni Saqlash Tashkiloti (BJSST) yangi kasallikni - COVID-19, virusni "og'ir kechivchi o'tkir respirator sindromni chaqiruvchi koronavirus-2" (SARS-CoV-2 - Severe acute respiratory syndrome-related coronavirus 2) deb nomlandi [1].

COVID-19 pandemiyasi o'tgan qisqa vaqt oralig'ida inson faoliyatining barcha jabxalarida ijtimoiy, iqtisodiy va siyosiy jixatdan salbiy oqibatlariga, inson omilining maxsuldorligi kamayishiga olib keldi. Bu holat kasallikning og'irlik darajasigabog'liq bo'lib, ko'p hollarda simptomsiz, yengil yoki o'rta og'ir shaklda namoyon bo'ladi. Kasallikning turlicha og'irlikda kechishi qisqa davr mobaynida yaxshi o'rganilgan bo'lishiga qaramasdan, ularning aniq ko'rsatkichlari haligacha noma'lum [2-10]. Ba'zi bir manbalar kasallikning simptomsiz kechishi kogort usulida tahlil qilganda 30-40% uchrashi aniqlangan [10,11]. Ammo, olibborilgan tekshiruvlarda bemorlarni kasallik butun davomiyligi bo'ylab tahlil qilinmaganligi, kasallik og'irlik darajasini belgilovchi saralab olingan simptomlarning o'zaro farq qilishi tufayli turli noaniqliklarga sabab bo'lgan. Kasallikning simptomlarsiz kechishiga dastlabki tashxisot vaqtida belgilarning hali shakllanib ulgurmagani sabab bo'lishi, simptomlarning keyinchalik yuzaga chiqishi mumkinligini nazardan chetda qoldirmaslik zarur. Ayrim mualliflarning kuzatishlari natijasiga ko'ra, simptomlari o'rtacha kasallikning to'rtinchi kunda namoyon bo'lgan [12]. Koronavirusliinfeksiyani o'rta og'ir, og'ir kechishi patogenezida kuchli immun javob, endotelial disfunktsiya va giperkoagulyatsion sindrom uchligi asosiy o'rinni egallashi, natijada gemostaz buzilishi, tromboz, nafas hamda poliorgan yetishmovchilikka kabi oqibatlariga olib kelishi aniqlangan. Ko'rsatilgan tibbiy yordamning keng qamrovligi, tezkorligiga qaramasdan kasallikning bemorlarda og'ir kechishi hamda o'lim holatlarining kuzatilishi muammo dolzarbligini anglatadi. Shu sababli, kasallikning og'irlik darajasi o'z vaqtida to'g'ri baholanishi davo rejasining to'g'ri tanlanishiga, davolash samaradorligini oshishiga va bemor hayot sifatining yaxshilanishiga olib keladi.

Maqsad. Koronavirusli infeksiya tashxisi tasdiqlangan bemorlarda kasallanishning og'irlik darajalarini uchrash chastotasi, ularga ta'sir qiluvchi omillarni o'rganish.

Material va metodlar. Kuzatuv davomida Respublika Maxsus 2-son Zangiota shifoxonasida 2020-yil avgust-

dekabr oylarida koronavirusli infeksiya tashxisi bilan davolangan bemor orasidan 311 nafarining kasallik tarixi hujjatlari olindi hamda retrospektiv usulda o'rganildi. Bemorlarda kasallik kechishining og'irlik darajasini baholashda klinik, laborator va instrumental tahlil usullari qo'llanilgan. 311 nafar bemorning 173 (55,6%) nafari ayol, 138 (44,4%) nafari erkak bo'lib chiqdi. Bemorlarning o'rtacha yoshi 49,5 ga teng. Bemorlarning 53 nafari yondosh kasalliklar (yurak-qon tomir tizimi kasalliklari, qandli diabet, o'pkaning surunkali kasalliklari, o'sma kasalliklari, buyrakning surunkali kasalliklari, semirish) bilan og'riganligi aniqlandi, 103 nafar bemorda zararli odat – tamaki chekishi qayd qilindi.

Bemorlarning barchasida Covid-19 tashxisi polimer zanjir reaksiyalari (PZR) tahlili orqali tasdiqlangan.

Natijalar va muhokama. COVID-19 tashxisi bilan davolangan bemorlardan 207 nafarida (67%) isitma, 221 nafarida (71%) yo'tal, 52 nafarida (17%) hid va ta'm sezgisining o'zgarishi, 19 nafarida (6%) yutinganda og'riq, 56 nafarida (18%) terlash, 231 nafarida (74%) umumiy holsizlik, 13 nafarida (4%) burun bitishi, 10 nafarida (3%) qusish, 69 nafarida (22%) ich ketishi, 221 nafarida (71%) bosh va tanadagi og'riq, 3 nafarida (1%) nafas yetishmovchiligi aniqlangan (**diagramma 1**).

Barcha bemorlar kasallik kechishining og'irlik darajasiga qarab 4 guruhga bo'lindi.

O'rganilgan bemorlarning I guruhi - 68 nafarida ko'rik vaqtida kasallik simptomlari aniqlanmagan bo'lib, ularning 41 nafari ayollar, 27 nafari erkaklar tashkil qilgan.

Bemorlarning 53 nafari 50 yoshga yetmagan. 4-nafarida yondosh kasalliklar kuzatilgan. 11 nafar bemor tamaki maxsulotlari iste'mol qilgan. Guruhdagi barcha bemorlar davolanishning dastlabki kunlarda ko'krak qafasi kompyuter tomografiyasi usulida tekshirilganda ularning 31 nafarida yallig'lanishga xos rentgenologik belgilar aniqlangan. Davolanishning

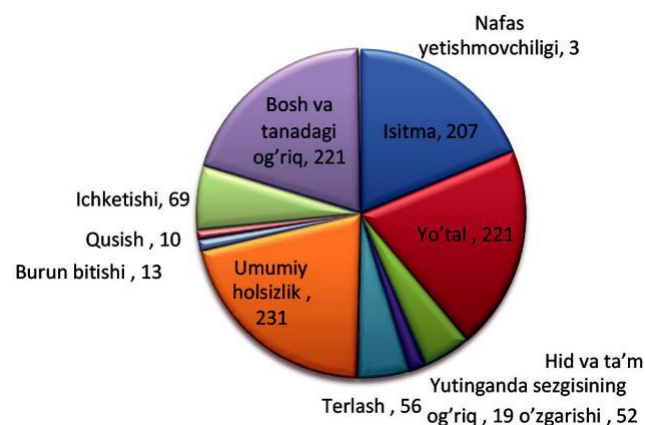


Diagramma 1. Bemorlarda aniqlangan klinik simptomlar. Клинические симптомы, выявленные у пациентов. Clinical symptoms identified in patients.

dastlabki 10 kuni davomida ularning 47 nafarida kasallikka xos simptomlar yuzaga chiqqan bo'lib, 14 nafarida isitma, 28 nafarida yo'tal, 8 nafarida hid va ta'm sezgisining o'zgarishi, 19 nafarida yutinganda og'riq, 5 nafarida terlash kuzatilgan. 21 nafarida kasallik klinik simptomlarsiz kechgan. Davolanagan 68 nafar bemorning o'rtacha davolanish muddati $13,7 \pm 0,8$ kunni tashkil qilgan.

Dastlabki tashxisga ko'ra II guruh - 183 nafar bemorda kasallik yengil shaklda kechgan bo'lib, ularning 119 nafarini ayollar tashkil qilgan. 135 nafari 50 yoshga to'lmagan. 21 nafarida yondosh kasalligi aniqlangan. 67 nafar bemor tamaki maxsulotlarini kundalik iste'mol qilganligi qayd qilingan. II guruhdagi bemorlarning 143 nafarida isitma, 39 nafarida terlash, 174 nafarida umumiy holsizlik, 135 nafarida yo'tal, 13 nafarida burun bitishi, 8 nafarida qusish, 67 nafarida ich ketishi, 161 nafarida bosh va tanadagi og'riq, 38 nafarida ta'm va hid sezgisining buzilishi kuzatilgan. Davolanagan 183 nafar bemor ko'krak qafasi kompyuter tomografiyasi xulosasiga ko'ra 109 nafarida zotiljamga xos belgilar - o'pka to'qimasining 5-20 % zararlanishi aniqlangan. Gipoksiya belgalari kuzatilmagan. Bemorlarning o'rtacha davolanish muddati $21,8 \pm 1,4$ kunni tashkil qilgan. Bemorlar orasida qonning kislorodga to'yinganlik ko'rsatkichi - saturatsiya $94,4 \pm 0,7\%$ ga teng bo'lgan.

Bemorlarning III guruh - 57 nafarida dastlabki tashxisga ko'ra kasallik o'rta og'ir shaklda kechgan bo'lib, ularning 11 nafari ayollar tashkil qilgan. 42 nafari 50 yoshdan oshgan hamda 25 nafarida yondosh kasalliklar aniqlangan. 23 nafar bemor tamaki maxsulotlari doimiy iste'mol qilib kelgan. Guruh a'zolari 47 nafarida isitma, 9 nafarida terlash, 54 nafarida umumiy holsizlik, 55 nafarida yo'tal, 1 nafarida qusish, 2 nafarida ich ketishi, barchasida bosh va tanadagi og'riq, 5 nafarida ta'm va hid sezgisining buzilishi davolanishning dastlabki kunlarida kuzatilgan. Guruhdagi bemorlarning ko'krak qafasi kompyuter tomografiyasi xulosasiga ko'ra 52 nafarida zotiljamga xos belgilar - o'pka to'qimasining 25-45 % zararlanishi aniqlangan. Gipoksiya belgalari 31 nafar bemorda yuzaga kelgan, barchasi namlangan kislorod orqali

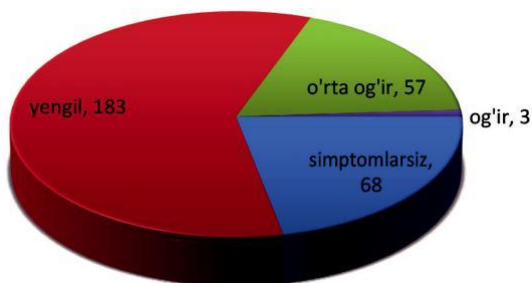


Diagramma 2. Kasallik og'irlik darajalarining uchrashi. Частота заболеваемости по степени тяжести. Frequency of disease severity in patients.

nafas olgan. Davolanagan bemorlarda qonning kislorod bilan to'yinganlik ko'rsatkichi - saturatsiya o'rtacha $93 \pm 1,2\%$ ni tashkil qilgan. Bemorlarning o'rtacha davolanish muddati $27,3 \pm 1,7$ kunni tashkil qilgan.

Davolanagan bemorlarning IV guruh - 3 nafarida dastlabki tashxisot kasallikning og'ir kechishini ko'rsatgan. Bemorlarning 2 nafari ayol bo'lgan. Bemorlarning 3 lasida ham 2 dan ortiq yondosh kasalliklar aniqlangan, yoshi 50 dan oshgan. 2 nafar bemor tamaki maxsulotlari iste'mol qilgan. Barcha bemorlarda nafas yetishmasligi, isitma, holsizlik, terlash, bosh va tanadagi og'riq, yo'tal bezovta qilgan. 1 nafar bemorda ta'm va hid sezgisining o'zgarishi, 1 nafar bemorda qusish kuzatilgan. Kuzatuvda bo'lgan 3 nafar bemor ko'krak qafasi kompyuter tomografiyasi xulosasiga ko'ra 2 nafarida o'pka to'qimasining 55-65 % zararlanishi, 1 nafarida 75-80 % zararlanishi aniqlangan. Gipoksiya belgilari 3 nafar bemorda ham kuzatilgan, barchasi namlangan kislorod orqali nafas olgan. Davolanagan bemorlarda qonning kislorod bilan to'yinganlik ko'rsatkichi - saturatsiya o'rtacha $88 \pm 3,2\%$ ni tashkil qilgan. Bemorlarning o'rtacha davolanish muddati $34,5 \pm 0,7$ kunni tashkil qilgan.

XULOSA

Olib borilgan tahlil asosida shu ma'lum bo'ldiki, dastlabki tashxisot vaqtida kasallik 68 nafar (21,9%) bemorda simptomlarsiz, 183 nafar (58,8%) bemorda yengil, 57 nafar (18,3%) bemorda o'rta og'ir hamda 3 nafar (1%) bemorda og'ir shaklda kechganligi aniqlandi (**diagramma 2**). Kasallikning simptomlarsiz kechishi bemorlarni shifokorga murojaat qilishga undamaganligi sababli nisbatan ko'p uchrashini xulosa qilishimiz mumkin.

Kasallikning og'ir kechishi bemorlarda oldindan yondosh kasalliklarning mavjudligi bilan bog'liqligi aniqlangan. Ya'ni, o'rganilgan ma'lumotlar asosida yondosh kasalliklari bor bemorlar I guruhda 4 nafarni (5,9%), II guruhda 21 nafarni (11,5%), III guruhda 25 nafarni (43,9%) hamda IV guruhda 3 nafarni (100%) tashkil etdi (**diagramma 3**).

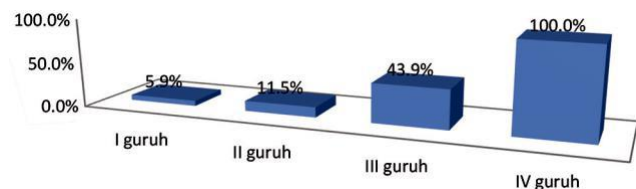


Diagramma 3. Guruhlarda yondosh kasalliklari bor bemorlarning foiz miqdori.

Процент пациентов с сопутствующими заболеваниями в группах. Percentage of patients with comorbidities in groups.

Kasallikning kechishida zararli odatlarning mavjudligi o'z ta'sirini ko'rsatishini ham inobatga olish lozim. Zararli odatlari mavjud bemorlar I guruhda 11 nafarni (16,2%), II guruhda 67 nafarni (36,6%), III guruhda 23 nafarni (40,4%) hamda IV guruhda 2 nafarni (66,7%) tashkil etdi (**diagramma 4**).

Yuqoridagi holatlarning mavjudligi bemorda kasallik kechishini og'irlashishiga, tuzalish davrining uzayishiga hamda ruhiy jihatdan tushkunlikka tushushini sabab bo'ladi. Qolaversa, bu omillarning inobatga olinishi davlat mablag'larini tejatishiga va sog'liqni saqlash tizimi xodimlari zimmasidagi yuklamani kamaytirishga yordam beradi.

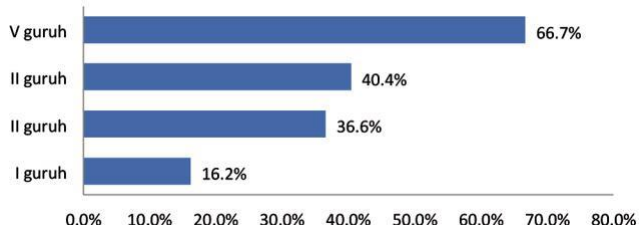


Diagramma 4. Guruhlarda zarali odatlari bor bemorlarni-miqdori. Количество пациентов с вредными привычками в группах. The number of patients with bad habits in groups.

ADABIYOTLAR/LITERATURA/REFERENCES

World Health Organization. Director-General's remarks at the media briefing on 2019-nCoV on 11 February 2020. <https://www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020> (Accessed on February 12, 2020).

Chan JF, Yuan S, Kok KH, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet* 2020; 395:514. [https://doi.org/10.1016/s0140-6736\(20\)30154-9](https://doi.org/10.1016/s0140-6736(20)30154-9)

Liu YC, Liao CH, Chang CF, et al. A Locally Transmitted Case of SARS-CoV-2 Infection in Taiwan. *N Engl J Med* 2020; 382:1070. <https://doi.org/10.1056/nejmc2001573>

World Health Organization. Coronavirus disease 2019 (COVID-19) Situation Report – 28. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200217-sitrep-28-covid-19.pdf?sfvrsn=a19cf2ad_2 (Accessed on February 18, 2020).

Mizumoto K, Kagaya K, Zarebski A, Chow-ell G. Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020. *EuroSurveill* 2020; 25. <https://doi.org/10.2807/1560-7917.es.2020.25.10.2000180>

Kimball A, Hatfield KM, Arons M, et al. Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-

Term Care Skilled Nursing Facility - King County, Washington, March 2020. *MMWR MorbMortalWklyRep* 2020; 69:377. <https://doi.org/10.15585/mmwr.mm6913e1>

Wang Y, Liu Y, Liu L, et al. Clinical Outcomes in 55 Patients With Severe Acute Respiratory Syndrome Coronavirus 2 Who Were Asymptomatic at Hospital Admission in Shenzhen, China. *J InfectDis* 2020; 221:1770. <https://doi.org/10.1093/infdis/jiaa119>

Sutton D, Fuchs K, D'Alton M, Goffman D. Universal Screening for SARS-CoV-2 in Women Admitted for Delivery. *N Engl J Med* 2020; 382:2163. <https://doi.org/10.1056/nejmc2009316>

Gudbjartsson DF, Helgason A, Jonsson H, et al. Spread of SARS-CoV-2 in the Icelandic Population. *N Engl J Med* 2020; 382:2302. <https://doi.org/10.1056/nejmoa2006100>

Oran DP, Topol EJ. Prevalence of Asymptomatic SARS-CoV-2 Infection: A Narrative Review. *AnnInternMed* 2020. <https://doi.org/10.7326/m20-3012>

Lavezzo E, Franchin E, Ciavarella C, et al. Suppression of a SARS-CoV-2 outbreak in the Italian municipality of Vo'. *Nature* 2020;584:425. <https://doi.org/10.1038/s41586-020-2488-1>

Sakurai A, Sasaki T, Kato S, et al. Natural History of Asymptomatic SARS-CoV-2 Infection. *N Engl J Med* 2020;383:885. <https://doi.org/10.1056/nejmc2013020>