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AWARENESS OF HEALTHCARE PROFESSIONALS ABOUT THE RISKS OF OCCUPATIONAL INFECTION WITH HEMOCONTACT INFECTIONS: QUESTIONNAIRE RESULTS

Cases of the introduction of pathogens of hemocontact viral hepatitis and HIV infection into medical organizations pose a potential threat of infection of medical workers in the course of their professional activities. The purpose of the study is to study the awareness of medical professionals about the dangers of occupational infection. Within the framework of this study, a survey of medical professionals was conducted according to the author's questionnaire. The results of a survey of 1,046 respondents on the issues of awareness of medical professionals in ensuring safety in the provision of medical care are presented. Cases of workplace emergencies were identified among 14.2 % of the surveyed medical workers. At the same time, 28.1 % do not register emergency cases in the "Emergency Register for medical procedures", and 10.7 % of doctors do not have vaccination against viral hepatitis B. This requires the development of measures to prevent and raise awareness of occupational infection among medical professionals.

Keywords: safety of medical workers; questionnaire; awareness; hemocontact infections; HIV; hepatitis B; hepatitis C

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Introduction. The relative indicator of the number of newly detected cases of HIV infection, as well as the incidence rate per 100 thousand population of the Altai Territory (80.7 and 65.5, respectively), according to the federal statistical observation form No. 2, "Information on Infectious and Parasitic Diseases," exceeded the average Russian value. In the Altai Territory, there was an increase in the proportion of viral hepatitis C in both the structure of the incidence

of acute (48.57%) and chronic viral hepatitis (57.54%) [1]. The incidence of CHB and CHC in AK tended to increase by 2.2 times and 7.2 times, respectively (from 2000 to 2023) [1]. From 2013 to 2023, there was a 1.2-fold decrease in the incidence of HIV infection among medical workers in the Altai Territory (from 22.6 ± 0.2 0/0000 to 26.0 ± 0.2 0/0000, $p \leq 0.00001$) [2].

In the Krasnoyarsk Territory in 2023, 2295 cases of HIV infections were de-

tected, the incidence rate was 84.84 cases per 100 thousand population [3].

The incidence of chronic viral hepatitis B and C in the Krasnoyarsk Territory in 2023 increased by 35.4% and 24.8% compared to 2022 and exceeded the indicators in the Russian Federation by 62.5% and 73.2%, respectively [3].

Health care workers (HCPs) are at increased risk of contracting viral hepatitis. According to studies, the frequency of detection of these diseases among health workers is 7-10 times higher than among the general population [4, 5, 6, 7]. Viral hepatitis in healthcare personnel is of important epidemiological importance, especially in the context of healthcare-associated infections. In advanced stages, such as cirrhosis and liver cancer, these diseases become a serious clinical and socio-economic problem [6].

Analysis of information on professional infection of medical workers (hemocontact hepatitis B, C, HIV) at the present stage shows that it is impossible to completely exclude the risk of infections in any medical organization [8].

A component of the system for preventing occupational infection with hemocontact infections is monitoring the level of competence, increasing knowledge, skills and abilities in this area.

Diagnosis of the level of awareness is the first stage of increasing the competence of medical workers as the basis for their self-preserving behavior in the implementation of professional activities.

The purpose of the study is to study the level of awareness of medical workers about the risks of occupational infection with hemocontact infections.

Research materials and methods.

The methods used in this article can be divided into theoretical and cognitive (analysis of the literature on the corresponding problem, comparison, generalization, synthesis of the obtained data); empirical methods (the basis is a questionnaire survey in online format using the Google form, which includes nominal scales); frequency distribution method, which allows you to fix the relative values (%) associated with the prevalence of representations and installations. Data processed using Excel.

In the period from May 1 to May 20, 2024 in the semi-structured author's Internet questionnaire "Hemocontact infections. The risk of professional infection" was attended by 1,046 employees of various medical organizations in the Altai Territory and Krasnoyarsk Territory.

As a result, the sample population is represented by the following socio-demographic characteristics:

- age categories: 20-30 years old - 18.5%, 31-40 - 24.3%, 41-50 - 26.2%, 51 and older - 31%;
- gender: men - 9.9%, women - 90.1%.
- education level: doctors - 33.3%, with secondary medical - 64.3%, junior medical staff - 2.4%;
- working students - 5.1%: 5th course - 44.2%, residents - 19.2%, 6th course - 17.3%, 3rd course - 5.8%, 3.8% each - 1 and 4 courses and open source software, 2nd course - 1.9%).

The main content blocks of the questionnaire were aimed at identifying such issues as awareness of the dangers of transmitting hemocontact infections during various manipulations, on the rules for preventing occupational infection with hemocontact infections, actions in emergency situations (including registration at the workplace), and post-exposure prophylaxis measures.

The study was conducted in compliance with ethical standards and taking into account measures to protect the privacy of research subjects and the confidentiality of their personal data.

Category questions of particular practical and theoretical importance to the study and answer options are presented in Table.

Results and discussion. The study revealed a high level of self-esteem (99.8%) of medical workers regarding their awareness of the risks of contracting hemocontact infections (viral hepatitis B, C, HIV infection) while performing professional duties. In particular, 99.6% are sure that they know about the rules for the prevention of occupational infection with hemocontact infections; 99.2% of doctors say that they know which situations at the workplace are emergency: the ingress of biomaterials on the mucous membranes of the mouth/eyes - 94.5%, an injection with sharp instruments - 94.3%, a cut - 87.1% and the ingress of biomaterial on overalls - 63.7%. Since the questionnaire question suggested the possibility of multiple choices, the sum of the answers received exceeds 100%.

Despite the high percentage of subjective assessment of risk awareness (99.8%), 14.2% of medical workers note the occurrence of emergency situations (ES) at the workplace. Of these, isolated cases for the entire period of work occur in 86.3% of respondents, once a year - in 4.1%, 3.4% each noted the occurrence of situations once a month and once every six months. Approximately 2.1% respondents celebrate AS once a quarter and 0.7% - 1 times a week.

The most frequently noted by respondents causes of emergencies at the work-

place, creating the risk of infection with hemocontact infections, are as follows: "hurried when performing manipulation" - 38.4%; "performed manipulations in" extreme "conditions (at home, unstable furniture, etc.) - 24.0%; 15.0% put the cap on the used needle, when performing operations/invasive procedures, the tool broke or was incorrectly applied - 7.5%; 6.2% reported feeling unwell during the working day, 5.5% encountered a restless patient; other reasons were indicated by 3.4% of respondents.

According to the results of the study, violations of the rules for registering emergency situations were revealed. So, only 71.9% were registered in the "Log of emergency situations during medical manipulations" (hereinafter - the Log). Almost every third event (28.1%) is not recorded. As reasons justifying these indicators, the respondents note: lack of awareness of the presence of the Journal, lack of access to the Journal, confidence in the absence of further actions on the part of the management, the employee's negligence towards his own health ("maybe it will pass"), were not considered necessary.

In the event of an emergency at the workplace, post-exposure prophylaxis was carried out only by 81.3% of medical workers. Despite the fact that in 4 out of 5 cases of ES, post-exposure prophylaxis was carried out, 18.8% of respondents used an incorrect algorithm of actions (for example, 10.3% of them performed the algorithm with "squeezing out a drop of blood").

As a justification for a passive reaction to ES at the workplace, the majority of respondents indicate "no need" ("negative" for hemocontact infections, the minimum risk of infection (according to a medical worker) - 51.8%, silence of the AS that occurred and lack of therapy - 18.5%).

An important aspect in overcoming the negative scenario in ES is specific prevention (a full course of vaccination against viral hepatitis B). According to the data obtained, only 89.3% of medical practitioners are vaccinated (of the total number in each category of workers, 17.1% of doctors, 7.3% of nurses and 12.5% of junior medical workers are not vaccinated).

Indicative situation: 4 respondents have a history of established diagnosis (OVG/HVG/cirrhosis/HIV infection). Of these, 50% (doctor, paramedical worker) note a connection with infection with professional activities (emergencies at the workplace and the need for emergency manipulation of a patient without a known history). Both employees were

Questions of the Internet questionnaire «Hemocontact infections. Occupational infection risk. »

1	2	3
Question №	Question Text	Answer Options
General questions		
1.	Your Gender	Male Women's
2.	Your age (full years, number)	Free answer
3.	Name of settlement where you live	Free answer
4.	Are you currently an employee of a medical organization?	Yes No
For healthcare professionals		
5.	Please indicate your position in the medical organization	Junior Medical Staff Nursing staff Doctor
6.	Department of the medical organization in which you work	Free answer
7.	Are you aware of the dangers of transmitting hemocontact infections (viral hepatitis B, C, HIV infection) during work operations?	Yes No
8.	Are you aware of the rules for the prevention of occupational infection with hemocontact infections?	Yes No
9.	Do you know what workplace situations relate to emergencies?	Yes No
10.	In your opinion, what situations can occur at the workplace?	Injection with sharp instruments Cut Ingress of biomaterial on overalls Ingress of biomaterial on mucous membranes of eyes/mouth
11.	Have you ever had a workplace emergency?	Yes No
Accounting for emergency situations		
12.	How often do you experience workplace emergencies?	1 times a week 1 monthly 1 quarterly 1 every half year 1 times a year Single cases for the entire period of work
13.	Indicate what the emergencies were related to	Free answer
14.	Were these emergencies recorded in the "Emergency Accounting" Log?	Yes No
Post-exposure prophylaxis		
15.	Has post-exposure prophylaxis been carried out following a workplace emergency?	Yes No
16.	What exactly was done (what kind of prevention)?	Free answer
17.	For what reason was post-exposure prophylaxis not carried out?	Free answer
18.	Describe the reasons why emergency situations are not recorded in the logbook	Free answer
Vaccination		
19.	Are you vaccinated against viral hepatitis B?	Yes No
20.	Specify the number of vaccinations according to your vaccination calendar	Vaccination 1 Vaccination 2 Vaccination 3 Vaccination 4 Revaccination

End of table

1	2	3
21.	Why did you refuse to be vaccinated against hepatitis B?	Free answer
22.	Do you have an established diagnosis (OVG/HVG/cirrhosis/HIV infection) (if yes, write the date of diagnosis in the line "other")	No
		Other
Link to occupational infection		
23.	Is there a connection between the established diagnosis and your professional activity, in your opinion?	Yes
		No
24.	The cause of infection, in your opinion	Free answer
For students		
25.	Are you currently students of a medical university?	Yes
		No
26.	What is your course?	1
		2
		3
		4
		5
		6
		Internship
		Postgraduate study
		Secondary vocational education

not vaccinated against hepatitis B, while, based on subjective data, post-exposure prophylaxis was carried out (use of a first aid kit).

Conclusion. The performance of health professionals in their professional duties is inevitably associated with contact with sources of infection, which poses a potential threat to their health in terms of the risk of infection in the working environment.

The presented results of the survey allow us to conclude that despite the high self-assessment of knowledge of hemocontact infections and the risks of ES at the workplace, in fact, there is a low awareness of medical workers in the Altai and Krasnoyarsk Territories on issues of occupational infection, ES and the rules for their registration.

The percentage of the questionnaire response options such as "ingress of bio-materials on the mucous membranes of the mouth/eye," "injection with sharp instruments" and "cut" is in the satisfactory range from 87% to 95%. The exception is the option of the answer "getting bio-material on overalls," which may, in the future, be the basis for the development of a vocational training program.

Violations of the rules for registering ES at the workplace determine the direction of organizational actions that can reduce the overall level of threats to the health of a medical worker and the epi-

demiological situation in a medical institution.

The incorrect algorithm of actions in the event of ES is probably associated with the low awareness of medical workers about the content of new regulatory documents, which is an important aspect in professional activities to preserve their own health and well-being.

Preventive immunization of personnel of medical organizations against HBV is carried out in accordance with the national and regional calendars of preventive vaccinations, the vaccination calendar for epidemiological indications, as well as in accordance with the decisions of the chief state sanitary doctor for the constituent entity of the Russian Federation. The survey revealed a deviation from these points (10.7% of medical workers are not vaccinated against hepatitis B), which indicates insufficient informing of medical personnel (including the management structure of medical organizations) about the problems of occupational infection.

Thus, the key tasks of practical health care are the study of factors contributing to the infection of employees of medical institutions, the development of preventive measures, as well as raising awareness through educational programs. It is necessary to minimize the risk of infections associated with the provision of medical care among medical personnel.

As a solution to key tasks, it is proposed to create and introduce into practical healthcare a training program for medical workers of various specialties on professional infection with hemocontact infections.

The authors declare no conflict of interest in the submitted article.

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ATTITUDES OF PEDIATRIC GASTROENTEROLOGISTS, RHEUMATOLOGISTS, AND PARENTS TOWARD VACCINATION BASED ON AN ANONYMOUS ONLINE SURVEY

Differences in vaccination coverage among patients with IBD, JIA, and healthy children, as well as to identify differences in vaccination attitudes between parents and physicians, including barriers and facilitators of immunization were assessed. Vaccination coverage, reasons for refusal, trust in vaccines, and physician involvement in immunization were assessed. Statistical analysis was performed using Pearson's χ^2 test and the Mann-Whitney test. Insufficient vaccination coverage among patients with IBD and JIA is influenced by both parental concerns and the cautious approach of specialists. The main barriers include medical exemptions, concerns about disease exacerbation, and inadequate coordination between primary care physicians and specialists. Improving vaccination coverage requires the development of personalized immunization strategies, interdisciplinary collaboration, and educational programs for both physicians and parents. To increase vaccination coverage, personalized immunization strategies, interdisciplinary collaboration, and educational programs for doctors and parents are needed.

Keywords: vaccination, juvenile idiopathic arthritis, inflammatory bowel disease, vaccination coverage, immune-mediated diseases

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Introduction. Vaccination remains the cornerstone of preventing vaccine-preventable infections in paediatric populations, yet it is critically important and often more complex for children who receive long-term immunosuppressive therapy for juvenile idiopathic arthritis (JIA) or inflammatory bowel disease (IBD) [4, 7, 14]. Immunosuppression amplifies susceptibility to common pathogens and increases the likelihood of severe disease courses and complications. Consequently,

both ECCO [7] and EULAR [5] recommend that these patients follow an accelerated and, where possible, complete schedule of inactivated and live vaccines prior to or, when necessary, during treatment.

Adherence to immunization schedules can vary markedly across patient groups and is influenced by awareness, health literacy, and personal attitudes. Individuals with IBD and JIA belong to a high-risk cohort for infectious complications, making vaccination a cornerstone preventive strategy [1]. Their increased susceptibility