ПОЛНОТА И ДОСТОВЕРНОСТЬ РЕГИСТРАЦИИ ПОСЛЕОПЕРАЦИОННЫХ ОСЛОЖНЕНИЙ В ОТДЕЛЕНИЯХ ХИРУРГИЧЕСКОГО ПРОФИЛЯ

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Изучены сведения о регистрации инфекций, связанных с оказанием медицинской помощи, на территории Российской Федерации, проанализирована отчетная документация и сведения о встречаемости послеоперационных осложнений как разновидности инфекций, связанных с оказанием медицинской помощи, у пациентов хирургической службы Тульской области на примере Тульской областной клинической больницы. Проведено выявление случаев сокрытия послеоперационных осложнений по обнаружению косвенных признаков, таких как фактические данные по журналам перевязок по режиму ухода и лечения септических ран, данные бактериологических исследований патологического отделяемого ран, назначения лечебных схем применения антибактериальных препаратов, превышение средней продолжительности послеоперационного пребывания пациентов. Оценены масштабы занижения регистрации показателей инфекций, связанных с оказанием медицинской помощи, в частности послеоперационных осложнений. Предложены рекомендации по оптимизации и модернизации мероприятий, направленных на профилактику, регистрацию, обработку информации и выявление случаев инфекций, связанных с оказанием медицинской помощи, в частности послеоперационных осложнений при которых человеческий фактор, в лице медицинского персонала хирургической службы, минимизирован, в результате чего объективность и качество данных мероприятий многократно возрастает и как следствие количество послеоперационных осложнений будет выше прежних показателей.

Ключевые слова: инфекции, связанные с оказанием медицинской помощи

COMPLETENESS AND RELIABILITY OF REGISTRATION OF POSTOPERATIVE COMPLICATIONS IN SURGICAL DEPARTMENTS

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Studied the information on the registration of the infections connected with rendering medical care on the territory of the Russian Federation, analyzed documentation and data on occurrence of postoperative complications as a variety of infections associated with medical care, patients in the surgical service of the Tula region on the example of the Tula regional clinical hospital. The detection of cases of concealment of postoperative complications on the detection of indirect signs, such as the actual data on the logs of dressings on the regime of care and treatment of septic wounds, data of bacteriological studies of pathological discharge of wounds, prescribing therapeutic regimens of antibacterial drugs, exceeding the average duration of postoperative stay of patients. The scale of underregistration of infections associated with the provision of medical care, in particular postoperative complications, is estimated. Recommendations for optimization and modernization of measures aimed at prevention, registration, information processing and detection of infections associated with the provision of medical care, in particular postoperative complications in which the human factor, represented by the medical staff of the surgical service, is minimized, resulting in the objectivity and quality of these measures increases many times and as a consequence the number of postoperative complications will be higher than previous indicators.

Keywords: infections associated with medical care, postoperative complications, purulent-septic infections

Currently, the problem of infections associated with the provision of medical care is one of the most urgent areas of medical and preventive activities. At the present stage of health development and the provision of various types of medical care, new factors [1], which lead to an increase in the incidence of infections associated with health care: reduction of financing of medical institutions, reducing the quality and quantity of procurement of disinfectants, detergents, antiseptics for treatment of the surgical field, sites for various therapeutic and diagnostic procedures patients, medical staff, medical instruments and sterilization equipment, drugs and linen); the increasing number of cases of the emergence of strains of microorganisms resistant to modern antibiotics and various means for disinfection; complicated and time-consuming process of disinfection and sterilization measures to prepare modern medical equipment for repeated use during working hours. It is also worth paying attention to the constant saturation of the market of disinfectants, which are produced both by foreign manufacturers and domestic, because of which different standards of manufacture and vectors of use sometimes differ, which leads to difficulties in choosing the administration and management of the necessary means for use in specific conditions where the greatest efficiency of these In addition to disinfectants, competent selection of antibacterial drugs and immunocorrecting agents for the prevention of nosocomial infections is difficult, since vari-

ous studies can not illuminate the full picture of antibiotic resistance in different populations, and as a consequence, treating doctors use rather limited schemes in order to carry out the prevention of infections associated with the provision of medical care and not to aggravate the situation with the emergence of resistant strains of microorganisms [2]. A necessary direction in the prevention of infections associated with the provision of medical care is also the modernization of legal documentation, both at the Federal level and at the regional level, which will fix the necessary provisions relating to modern measures for the prevention of hospital infections in medical organizations. While relevant and previously identified factors that contribute to the development of infections associated with health care [3, 4, 5]: the organization of multidisciplinary medical institutions on a centralized type with the formation of special microbiological environment as well as constant circulation of the flow of people; the constant presence of a latent reservoir of source of infection; strengthening of influence of artificial mechanism for the spread of infection and natural mechanisms; uncontrolled and unwarranted use of antibiotics; the growth among the population of high-risk categories (people of retirement age, patients with comorbid pathology, children of the first years of life, patients with immunodeficiency); weakening of natural immune mechanisms; difficulties with the allocation of premises, the device and the area of which would fully comply with the norms, as well as non-compliance with the rules of sanitary and epidemiological regime; low qualification of employees in matters of sanitary and epidemiological regime, in particular secondary and Junior medical personnel, as it is they who have a leading role in the implementation of the prevention of the spread of nosocomial infections.

According to statistics, on the territory of the Russian Federation every year recorded 50-60 thousand cases of hospital infection, while according to some reports, this figure is significantly underestimated, and should be more than 40-50 times. Thus, according to sample studies, in the territory of the Russian Federation, hospital infection was noted by up to 8% of patients, which is approximately 2-2.5 million people per year [6, 7, 8]. According to official sources, the values of morbidity indicators are in the range of 0.7-1.9 per 1000 patients [9, 10]. At the same time, it is worth pointing out that in foreign countries these values differ significantly, in Czechoslovakia they declare the level of 163, the USA – 50-100, Belgium – 29. Official data provided by the surgical services of medical organizations of the Russian Federation indicate the incidence of infections associated with the provision of medical care 0.2-0.3%, however, ongoing studies suggest other values – 15-18% [11, 12]. From this it can be concluded that the data of registration of infections associated with the provision of medical care are not objective and are not able to illuminate the whole picture of the problem. Hospital infections are distributed according to the profiles of medical institutions, with the highest frequency they are registered in obstetric and gynecological units and institutions – 34.1%, as well as in surgical services and units – 28.7%. In descending order followed by the medical organization of therapeutic – 18.7% pediatric orientation of 10.5%. Primary outpatient care accounts for 8.0% of infections associated with medical care [13].

Purpose of research

Having taken care of the problem of completeness and reliability of registration of infections associated with the provision of medical care, and in particular postoperative complications in surgical departments, we set a goal to study the situation in the Tula region, choosing as a base for the study of this problem the leading medical and preventive institution in the region.

According to the nosological structure of infections associated with the provision of medical care, the leading positions are occupied by purulent-septic infections, the percentage of which varies from 60 to 85% [14]. The greatest incidence of purulent septic infections is recorded in surgical services – about 92% of all recorded cases of purulent septic infections. The incidence of infections associated with the provision of medical care in medical institutions depends on a large number of factors, the main influence is the type of hospital, aggressiveness and invasiveness of the treatment and diagnostic process, the etiology and nature of the underlying disease, regulated and justified use of antibacterial and disinfectants, as well as other factors.

When attaching to the underlying pathology, which occurs the medical process, nosocomial infection increases morbidity, heavier overall condition of the body, which leads to an increase in the number of days of stay of the patient hospitalized on average for 6-8 days.

Surgical wound infection is the most common complication after surgical operations. And if we add inflammatory processes, peritonitis, fistulas to the suppuration of the postoperative suture, the proportion of purulent-septic infections in the total volume of surgical complications will be quite impressive – more than 56% [15].

At the same time, the issue of registration of purulent-septic infections remains one of

the most important problems of prevention of nosocomial infection. Under-reporting of cases of purulent-septic infections hides the true picture of morbidity, leads to distortion of the real epidemiological situation, makes it impossible to objectively assess the epidemiological situation in the hospital and as a consequence-the possible formulation of an incorrect epidemiological diagnosis and inadequate management decisions. All these factors were crucial in setting this goal of the study, as this problem is relevant at the present time.

Materials and methods of research

As a base for the study of this problem, we have chosen the leading medical and preventive institution of the region-Tula regional clinical hospital, as this medical organization has a powerful multidisciplinary surgical service, modern laboratory facilities, pharmacological and epidemiological departments.

As materials for the study, we took data on the logs of dressings on the regime of care and treatment of septic wounds, data of bacteriological studies of pathological discharge of wounds, data on the appointment of therapeutic regimens of antibacterial drugs and data exceeding the average duration of postoperative stay of patients.

We have developed (on the basis of CDC definitions) and brought to the heads of surgical departments of medical organizations of the Tula region standards of the case of nosocomial infection in surgical hospitals, which allows us to implement a unified approach to information collection, and accordingly increase the reliability of the subsequent findings of epidemiological analysis and the effectiveness of preventive and anti-epidemic measures. But as practice has shown, this did not affect the number of emergency notifications filed, that is, these criteria are simply not used by surgeons in determining the case of purulent-septic infection.

There is no doubt that the risk of septic infections depends on the degree of contamination of the wound during surgery. According to this principle, all surgical interventions were divided into 4 classes, differing in the degree of risk of infectious complications.

The first class-clean surgical operations (non-traumatic, uninfected surgical wounds that do not have signs of inflammation, do not affect the respiratory, gastrointestinal or genitourinary tract and during the operation there were no violations of the rules of asepsis).

The second class – conditionally pure surgical operations (during which in controlled conditions the respiratory, gastrointestinal or genitourinary tract was affected and as a result of which there was no significant leakage of contents or other unusual contamination).

The third class – contaminated surgical operations (associated with acute non-purulent inflammation, open fresh wounds of a traumatic nature, serious violations of asepsis and sterility during the operation or significant leakage of contents).

The fourth class-infected operations (the presence of old traumatic wounds containing necrotic tissue or operations in the explicit presence of infection).

According to numerous studies for clean wounds, the percentage of complications is 1-5%, for conditionally clean – 8-11%, for contaminated – 10-17% and for dirty-more than 27%. This classification is able to predict the probability of infection of the wound and justify the tactics of postoperative management of the patient to prevent the development of complications.

Results of the study and their discussion

Based on the above-mentioned criteria for July in the Tula regional clinical hospital should be registered at least 41 cases of purulent-septic infections (5% of 815 patients operated for this month). This number of cases is not recruited by the hospital even for a year. According to the statistics Department, no cases of postoperative suppuration were registered in July (table 1). The epidemiological Department for the same July received 1 emergency notification in the case of purulent-septic infection, that is, the rate of registered purulent-septic infections was 0.12% (1 case per 815 operated patients). Such a mismatch is not uncommon. Often managers do not even know which of the patients filed in the statistics or epidemiological Department, that is, even if the number of cases there may appear different names.

From the analysis of the actual data on the logs of dressing departments, it follows that in July received dressings on the regime of care and treatment of septic wounds 176 operated patients of surgical departments, which was 21.6% of the total number of operated patients. Indicators for patients requiring septic bandages ranged from 1% (ophthalmic) to 100% (burn). Thus, the real level of septic conditions in operated patients (according to the load on purulent dressings) was (table 1).

Bacteriological in July, 16.1% of operated patients were examined, that is, 131 patients had a pathological wound discharge, which was sent to the laboratory. In accordance with the criteria for determining the standard case, the epidemiology Department had to receive 131 emergency notices from the hospital departments for each clinical case. However, even for each bacteriological confirmed case (26 cases – 3.2% of the operated) diagnoses of purulent-septic infections were not established

by treating doctors, statistically not taken into account and emergency notices were not filed. Example: patient M. surgical Department. At laboratory confirmation at it of the developed postoperative complication from June 23 and 25 (Citrobacter and Acinetobacter are allocated respectively) the emergency notice on it didn't arrive.

The appointment of therapeutic regimens of antibacterial drugs is another of the undoubted indirect signs of infectious complications of surgical wounds. Such treatment was carried out in the Tula regional clinical hospital 102 operated patients. Thus, based on this indicator, the level of septic postoperative complications could not really be lower than 12.5% (table 1).

An additional criterion that focuses on the possible occurrence of postoperative complications (including purulent-septic) may be the excess of the average duration of postoperative stay of patients (table 2).

Table 1

Real level of septic conditions in operated patients

Departments	Operated on	p/o suppuration statistics		emergency notices filed		bandages in purulent dressing room		bacteriological treatment of operated patients		including isolated microflora		eceived a/b therapy	
		total	%	total	%	total	%	total	%	total	%	total	%
Surgical	89	0	-	0	-	18	20,2	17	19,1	3	3,4	14	15,7
Neurosurgery	25	0	-	0	-	5	20,0	3	12,0	0	-	3	12,0
Spinalsurgery	24	0	-	0	-	7	29 2	1	4,2	0	-	3	12,5
Thoracicsurgery	33	0	-	0	-	13	39,4	13	39,4	2	6,1	13	39,4
Vascularsurgery	51	0	-	0	-	15	29,4	7	13,7	1	2,0	4	7,8
Traumasurgery	67	0	-	1	1,5	22	32,8	22	32,8	1	1,5	5	7,5
Burn unit	21	0	-	0	-	21	100	21	100	8	38,1	16	76,2
Urology	107	0	-	0	-	34	31,8	34	31,8	10	9,3	23	21,5
Proctology	39	0	-	0	-	33	84,6	8	20,5	1	2,6	6	41,0
Gynecology	75	0	-	0	-	2	2,7	2	2,7	0	-	2	2,7
Ophthalmology	194	0	-	0	-	2	1,0	2	1,0	0	-	2	1,0
ENT	53	0	-	0	-	4	7,6	1	1,9	0	-	1	1,9
Endoscopy	37	0	-	0	-	0	0	0	0	0	-	0	0
TOTAL:	815	0	-	1	0,12	176	21,6	131	16,1	26	3,2	102	12,5

Table 2

Exceeding the average duration of postoperative stay of patients

Departments	Average length of days after surgery	Exceeding the average duration by (number of days)										
		1 day	2 days	3 days	4 days	5 days	6 days	7 days	8 days	9 days	10 days or more	TOTAL
Surgical	9,0	3	5		2	2	2		1		2	17
Neurosurgery	11,0	5		1	1		1					8
Spinalsurgery	13,2	1	1	2		1	2					7
Thoracicsurgery	10,4	3	2	1	1	1			1			9
Vascularsurgery	11,1	3	2	1	1	2		1	2			12
Traumasurgery	12,9	7	5	3	2	1	1				3	22
Burn unit	15,4	1	2	1			1					5
Urology	5,4	7	6	5	3	2	1	3		1	7	35
Proctology	11,2	2	3	1	1	1				1		9
Gynecology	7,3		3	2	1							6
Ophthalmology	1,4	3	1		1							5
ENT	5,6	2	1	1	1		1	1				7
Endoscopy	4,1	2	1									3
TOTAL:	8,5	39	32	18	14	10	9	5	4	2	12	145

The average length of stay in the Department after surgery exceeded in July 145 of 815 operated patients (17.8%).

Thus, the real rates of postoperative septic complications in the regional hospital can range from 12.5% (receiving antibacterial therapy) to 21.5% (in purulent dressings).

Conclusion

When analyzing the incidence of infections associated with the provision of medical care, and in particular purulent-septic infections, in the Tula regional clinical hospital, it turned out that the real incidence of infections associated with the provision of medical care is 104-179 times higher than recorded, which indicates a significant shortage of treating doctors in this direction. Low registration rates of purulent-septic infections due to the following reasons: concerns with claims against insurance companies, imposition of penalties, the legal consequences in the form of lawsuits, both from the regulatory organizations, and patients; the recommendatory nature of the documents containing clinical criteria determine the standard case of purulent-septic infections, which ignore clinicians; difficulties in the verification of purulent-septic infections associated with different methodologies and criteria in clinicians surgical profiles and epidemiologists. Often, clinicians working in the surgical service approach some forms of nosocomial infections, considering them as a postoperative complication not associated with infectious pathology. At the same time, the appearance of the post of clinical epidemiologist in the staffing table did not lead to a radical change in the situation for the better. Due to the difficulties with registration and obtaining objective data, it is not possible to create a complete picture characterizing the situation of purulent-septic infections in the hospital, the impression of sanitary and epidemiological well-being is created and as a consequence there is no action on this problem and preventive measures are not carried out. To improve this situation, it is necessary first of all to provide a qualitative objective account of all cases of purulent-septic infections, and their registration. For these purposes, it is necessary to update and unify the accounting and registration forms of medical documentation for more efficient processing. It is necessary to optimize and upgrade programmes for the control and prevention of purulent-septic infections, to include state of the art algorithms and standards provide various types of medical care, the current layout antibacterial therapy, recommendations for the effective use of disinfectants and antiseptics, improved hygiene standards, criteria definitions for common case of nosocomial infections, as well as educational programs for health professionals, aimed at improving knowledge about the control and prevention of infections associated with the provision of medical care, in particular purulent-septic infections, as well as the maintenance of sanitary and epidemiological well-being at the appropriate level. It is necessary to raise motivation among the staff, possible economic incentives (with timely detection) and penalties (when concealing infectious complications).

To accelerate optimization solution to the issue of prevention of purulent-septic infections, completeness of registration and accuracy of information obtained it is first necessary:

1) use the criteria for determining the standard case of purulent septic infection in the daily work of surgical departments

2) provide full coverage of patients with suspected (according to these criteria) postoperative complication bacteriological examination

3) submit emergency notifications for each identified case to the epidemiological Department with simultaneous information of the statistics Department

4) to use databases of bacteriological laboratory, pharmacological Department and departments of surgical profile for active automated search of cases of postoperative complications, which will minimize the role of the human factor (surgeons) in the registration of purulent-septic infections.

Purulent septic infections that occur after surgical operations, not only worsen the health of patients, but also lead to significant economic, social and moral losses. Currently, the country has identified and is already implementing a mechanism for compensation of damage to the health of patients, so often medical institutions incur additional costs, compensating the patient for the damage caused. In the presence of scarce budget funding, the incentive to further address the problem of infections associated with the provision of medical care may no longer be epidemiological, but economic aspects.

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