
ANALYSIS OF QUALITY OF EMERGENCY MEDICAL CARE TO THE PATIENTS WITH TRAUMA IN A MEGAPOLIS

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The Summary:

The detailed analysis of the call cards and the accompanying ambulance sheets of patients, which were taken to the state hospital No1, Emergency Department, during the period from the September 2012 to the July 2013, was done in this article. It is devoted to the investigation of the patients of trauma profile with injuries of the musculoskeletal system of different localization. 350 accompanying sheets and call cards of ambulance were analyzed. The patients were classified by age, sex, injuries' degree, hospitalization time, and time of the day.

The assessment of the quality of the ambulance at the prehospital stage was based on the following features: the level of the ambulance rendering, the compliance with ambulance standards, accuracy, timeliness, validity, sufficiency, and adequacy. The next stage was to detect the defects in rendering of emergency medical care: organization, diagnostics, and treatment. After that, the assessment of the influence of the different factors on the process and results of medical assistance was done. The timeliness and correctness of diagnosis installing were analyzed. The research showed that the diagnosis was correct for 73% of patients, and incorrect – for 19% (hyperdiagnostics), 5% (hypodiagnosics), 3% (the discrepancy to installed diagnosis).

Also, the degree of the satisfaction of patients in medical aid was defined. In this context the following factors were analyzed: the timeliness of the ambulance arrival, the quality of medical care, the individual features of ambulance workers. The opinion poll covered 250 responders among patients. The results showed, that 78% of the respondents appreciated positively, 8% mentioned the duration in the arrival of the ambulance, 14% had the difficulty in answering.

So, based on the investigation, it could be concluded that, an ambulance work in the conditions of megapolis depends on many difficulties like as traffics, remoteness, a great number of calls, weather and so on. The mass accidents are one of the specific features, when more than few people may be injured simultaneously. It requires working accurately.

Keywords: emergency medical care, quality of medical care, the assessment of quality.

Nowadays any megapolis is characterized by such situations when more than few people are

injured simultaneously. According to the statistics, the possibility of the development of such events in a megapolis is about 7 cases per month. The relative frequency of emergency situations to the population amount of the city is about 17.5 cases per 1 million inhabitants in a year. The absolute majority (85%) is connected to road traffic accidents and fires [2]. The frequency of deaths in the prehospital period depends directly on the quality of medical aid on this stage. Also it is necessary to note that the transporting time of patient to hospital influences on the quality and the completeness of ambulant service [4].

The detailed analysis of the call cards and the accompanying ambulance sheets of patients, which were taken to the state hospital No1, Emergency Department, during the period from the September 2012 to the July 2013, was done. The article is devoted to the investigation of the patients of trauma profile with injuries of the musculoskeletal system of different localization. 350 accompanying sheets and call cards of ambulance are analyzed.

The classification of patients by sex and age is represented by the diagram (figure 1). As it shows, the groups of the male patients of 35-39 years old and the female patients over 70 years of age are predominant. The elderly patients have a fracture of the proximal femur mainly. In the 98,6% of cases the diagnosis, installed by an ambulance, was confirmed radiologically.

Among delivered patients 71,2 % are the citizens of Moscow; 8,4 % - of the Moscow region; 11,3% - of other Russian Federation's regions; 6,3% - of other former soviet republics; 1,4% - of other states; 1,4% - persons without a place of residence.

The classification of the patients in accordance with the circumstances of injury is represented in Fig. 2. As it illustrates, the street injury is on the first place that could be explained by weather conditions (ice, rain and others). The next one is the road traffic accident trauma: in such cases 18% - passengers, 23% - drivers, 59% - pedestrians. And the last place is the trauma accidents after falling on a street and at home. In these cases the majority is the patients of elderly age and persons with alcoholic intoxication.

Depending on the time of day, 23.0% of patients were hospitalized in the morning, 31.0% - in the daytime, 32,0% - in the evening and 14.0% - in the night. The most of the patients arrived in the evening and during the day. But it is necessary to underline, that 25% of morning and day patients were injured in the evening or tonight or earlier.

The assessment of the quality of medical care at the prehospital stage was done in the following way: 1 – the informative and analytical stage: it involved the analysis of data of the medical documents, assessment of correctness of management and processing of medical documentation. Such criteria were used: good quality reference, satisfactory, unsatisfactory. The evaluation of the quality of implementation of diagnostic and treatment was done in accordance

with the standards of emergency medical assistance. Also, the following criteria were used: accuracy, timeliness, validity, sufficiency and adequacy. The next was the stage of detection of defects in rendering of emergency medical aid: organization, diagnostics, and treatment. After it the influence of objective factors on the process and results of medical care were analyzed. The algorithm of the expert assessment of the medical aid to patients of surgical profile accompanied by unfavorable outcome of medical care» by Tatarintsev A.V., was based [3].

The high level of the quality of medical documentation meant: a full information about a patient, a lack of technical defects in the accompanying sheets (unreadable handwriting, repair); * completion of all the points, including information about the circumstances of the injury, the site of the accident, time of incident, time of delivery in the hospital and the adoption of a call, and also information about the conduct of medical manipulations; competent formulation of diagnosis. Among the 350 accompanying sheets only 265 ones were of a good quality of medical documentation (76,0%). The quality of the 71 sheets (20,0%) could be rated as satisfactory ones. The lack of historical data of the circumstances of the injury was marked in 11 cases, the place of the incident - in 13 cases, the availability of technical defects - in 29, the lack of information about the delivery time to the hospital - in 5 cases, partial absence of information about medical procedures (there is no indication the figures AD, the existence of immobilization) - in 13 cases. The documentation was evaluated as unsatisfactory, when there was a rough violation in the formulation of diagnosis, (7 cases); rough crossings-out and repair (2 cases), the complete lack of information about medical events and historical data (3 cases), gross distortions of information about the patient (2 cases). As a whole the unsatisfactory medical records were revealed in 14 cases, that is about 4.0%.

One of the indicators of the quality of the ambulance is the timeliness of its arrival after accepting a call and the time, spent on its maintenance [1].

The delivery time of patients from the point after receiving the call to the hospital is represented on the fig.3. As it shows, the most part of patients was taken to a hospital more than one hour from the call moment.

The time of departure ambulance after receiving the call is: up to 5 minutes - 176 cases (50,0%), from 5 to 15 min - 111 cases (32,0%), more than 30 minutes - 63 cases (18,0%).

The continuance of arrival to hospital could be explained by the following reasons: the time that the medical workers used for necessary manipulations (in 59 cases); the remoteness from the place and the hospital (in 18 cases) (for example, 12 calls were made from the New Moscow region); so of them with the New Moscow delivered 12); call of ambulance from other clinics (psychiatric hospitals, outpatient clinics, trauma points, other health institutions) for transportation

to the hospital (in 52 cases); the busy schedule of ambulance work (in 34 cases).

One of the important indicators of the quality of medical assistance is timely and correct diagnostics. According to our data, the diagnosis was installed correctly for 255 of the patients (73%), and incorrect – for 65 patients (19%) to hyperdiagnostics, 20 patients (5%) to hypodiagnosics, for 10 patients (3%) the discrepancy to installed diagnosis.

Among the 350 patients, 163 were hospitalized. Among them 17 people refused to be hospitalized. So, it means that only 51,2% could be rated as profile trauma patients. Others didn't need in hospitalization. This group of patients with more precise pre-hospital diagnosis medical help could be offered at the level of Traumatology centre, which reduces the workload of the hospital significantly and economically. It is connected with defects diagnostics not only at the level of the nurse or doctor of ambulance, but also with the work in the structure of outpatient care. So, 35 people (10,0%) were delivered from local trauma centers: There are: bone-traumatic changes in radiological examination are not revealed among 17 patients, fractures without displacement of bone fragments are revealed among 10 patients, and 8 patients had no trauma at all, but they needed to be observed by a local traumatologist because of chronic diseases of the musculoskeletal system. In 8 cases (2.2%) patients after alcoholic intoxication were taken to a hospital because of injuries of various localization.

Another indicator of quality is the timeliness and completeness of the treatment. The main standards for the treatment of patients at the stage of rendering emergency medical aid are: analgesia, the immobilization of the injured limb, infusion therapy, monitoring of hemodynamics. Anesthesia was done in 72,0% cases. In 2% cases patients refused to use analgesics. Among anaesthetic the nonnarcotic [nonopioid] analgetics were used on the prehospital stage for the 38,5% patients. There are analgin and ketorol. Opioid analgesic were used for 49.0% of patients. There is tramal or tramadol. Narcotic analgesics were used in 12.5% of patients. There are morphine, fentanyl. The introduction of narcotic analgesics were intramuscularly (in / m) or intravenously (in/in). It should be noted that use of tramadol in elderly patients led to undesirable consequences, such as hypotension, nausea, vomiting, expressed dizziness. Tramadol was used in such patients (over 65) in 24.0% of cases.

Immobilization limb bone injury was performed in 95,0% of patients where it was necessary, that is connected with the introduction of the more comfortable materials for its provision (Fig. 4).

The purpose of infusion therapy in case of injury at the prehospital stage is not so much blood loss compensation, but rather the maintenance of hemodynamics within hindering the development of shock and providing adequate tissue oxygenation [5]. Infusion therapy was done for

41 patients in the ambulance car. Infusion therapy has not been undertaken for 7 patients, although there were indications: the presence of traumatic shock, fractures more than two segments

Control of blood pressure in persons over 60 years of age was held in 97,0% of cases, which is a good indicator.

The criterion for the quality of work is the satisfaction of the patients in medical care. This indicator includes timeliness of the arrival of the car, quality of care, and the personal characteristics of medical workers. The opinion poll was conducted among 250 patients. 78% of respondents appreciated the work of the emergency positively, 8,0% considered the duration of the arrival of the ambulance car, 14% - had a difficulty in answering.

So, based on the investigation, it could be concluded that, an ambulance work in the conditions of megapolis depends on the many difficulties like as traffics, remoteness, a great number of calls, weather and so on. The mass accidents are one of the specific features, when more than few people may be injured simultaneously. It requires working accurately. Based on the statistics the significant problem in the work of ambulance is the imperfection in the work of outpatient care. In particular the absence of a system of monitoring of patients with chronic pathology, insufficient qualified assistance traumatologic points, which leads to additional workload on an ambulance to transport such patients to a hospital. However, it should be noted that thanks to the Moscow government programmes which have been aimed to improve the technical equipment of an ambulance, its work level became higher.

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