

Emergency Conditions In The Urban Population Of Elderly And Senile People And Optimization Of Pre-Medical Care

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Abstract

The processes of population aging and changes in the structure of morbidity with a predominance of chronic non-infectious diseases are interrelated and lead to an increase in the number of patients with severe chronic disorders. About 75% of elderly patients are constantly in a state of decompensation, which leads to a decrease in the quality of life, disability and death.

The introduction of new integrative forms of organization of medical care for this category of citizens into clinical practice is extremely relevant today.

There is a need for serious improvement of organizational technologies to provide a qualitatively new level of pre-medical care to the elderly population, including the recognition of emergency conditions, taking into account the leading clinical syndrome.

Keywords: emergency conditions in the elderly, the nursing process, pre-medical care, the quality of medical care for elderly patients.

1. Introduction

According to the current regulations, in real clinical practice, the doctor may not always be in a health care facility or directly in the department. In this regard, average health workers should also be able to recognize the leading clinical syndrome, clarify risk factors, collect anamnesis in an elderly patient, and, if necessary, carry out minimal diagnostic measures before the arrival of a doctor and provide pre-medical care [1,2]. This will ensure continuity in the provision of medical care, reduce the time before the start of treatment measures and thereby improve the quality of medical care. Individual researchers have undertaken research to scientifically justify the tactics of the average medical staff in emergency situations, but they are not systematic, focused on specific situations. In real practice, a nurse and a paramedic cannot make a medical diagnosis, but use a symptomatic-syndromic approach [3,4].

Taking into account the presence of several diseases, atypical, asymptomatic course of diseases, and urgent conditions in an elderly patient, it seems necessary to create and implement algorithms for actions at the pre-medical stage in certain clinical situations [5,6].

The aim of the study is to justify the development of algorithms that allow the average medical staff to quickly and reliably determine the emergency condition in order to choose the optimal tactics of pre-medical care.

2. Materials and methods

The main method used is the method of system analysis. To perform this task, we have developed a “Map of the study of the management of an elderly patient who is admitted to the emergency department for urgent indications”.

By the method of continuous sampling, a statistical population was formed – patients with acute internal organ disease, in relation to which emergency care was provided. The unit of observation was each such patient.

A total of 331 patients were included in the study.

Among the patients, there were 147 men (44.4%) and 184 women (55.6%) aged 60 to 91 years. The median age was 66.6 years.

Statistical processing of the study results included the use of the following methods:

1. Calculation of the average absolute and relative values with the calculation of the error of the average.

2. Determining the nature of the distribution. To do this, we used the χ^2 method .

4. Assessment of the significance of the differences between the two populations. The Student's t criterion is applied. The difference in the indicators is reliable at $t \geq 2$, in this case $p < 0.05$. The Student's t criterion was used to identify significant differences between the quantitative characteristics of preventive programs at the stages.

3. Results and discussion

In the course of the study, the structure of polymorbidity in emergency conditions of the therapeutic profile was studied. A clinical analysis of emergency situations at the admission of elderly and senile patients to the department of pulmo-allergology profile was carried out and the provision of care to 470 patients aged 60 to 86 years (average age 69.7 ± 3.8 years) was analyzed. With exacerbation of bronchial asthma, 199 people were admitted, which was 42.6%; with exacerbation of chronic obstructive pulmonary disease, 111 people, which was 23.4%; with a diagnosis of community-acquired pneumonia, 61 people (12.8%); with Quincke's edema, 29 people, which was 6.4%; with acute contact dermatitis, 31 people, which was 6.4%; with worsening of bronchiectatic disease, 19 people, which was 4.3%; with a diagnosis of fibrosing alveolitis, multiforme exudative erythema in 10 people, which was 2.1% each.

Clinical analysis of emergency situations when elderly and senile patients were admitted to the department of nephrology showed that 32 patients aged 60 to 80 years (average age 68 years) were under observation. With exacerbation of chronic pyelonephritis were received 10 people — that was 31.3%; with exacerbation of chronic glomerulonephritis 5 people, which was 15.6%; chronic glomerulonephritis with

the outcome of nephrosclerosis 4 — 12,5%; diabetic nephropathy 5 15,6%; chronic pyelonephritis with the outcome of nephrosclerosis 3 people — 9,4%; chronic pyelonephritis on the background of exacerbation ICD 3 people — this is 9.4%; with a diagnosis of hypertension with renal impairment 2 people - 6,3%; acute renal failure 2 people -6,3%.

A clinical analysis of emergency situations when elderly and senile patients were admitted to the cardiology department found that 47 patients aged 60 to 91 years (average age 68.5 years) were under observation. With a diagnosis of CHD: Unstable angina, 18 people were admitted, which was 38.3%; IHD: Acute myocardial infarction 12 people — 25.5%; with a diagnosis of complete AV block III ST with attacks of MAS 5 people — 10.6%; IHD: Repeated myocardial infarction 4 people -8.5% hypertensive crisis 1 person — 2.1%; TELA 1 person — 2.1%; with a diagnosis of chronic rheumatic heart disease 1 person - 2.1%; chronic heart failure with attacks of cardiac asthma 3 people — 6.4%; with paroxysm of atrial fibrillation 2 people, which was 4.3%.

Clinical analysis of emergency situations when elderly and senile patients were admitted to the Department of Endocrinology revealed that 33 patients aged 60 to 80 years (average age 66.3 years) were under observation. With a diagnosis of type 2 diabetes mellitus, secondary insulin consumption were observed 29 people, which was 87.9%, with a diagnosis of type 1 diabetes mellitus 4 people, which was 12.1%. Clinical analysis of emergency situations when elderly and senile patients are admitted to the department of Gastroenterology. 48 patients aged 60 to 85 years (mean age 65.5 years) were followed up. With a diagnosis of peptic ulcer, the aggravation was noted with 11 people, 22.9 per cent; acute hepatitis 7, 14,6%; with exacerbation of chronic biliary pancreatitis 6 people to 12.5%; and cirrhosis of the liver 5 people at 10.4%; with a diagnosis of cholelithiasis chronic calculous cholecystitis 3 people — 6,3%; exacerbation of chronic pancreatitis 3, which was 6.3%; primary biliary cirrhosis 3 people — 6,3%; ulcerative colitis 3 people -6,3%; peptic ulcer complicated by bleeding 2 people, which was 4.2%; ovarian cancer 2 people — 4,2%; lymphocytic colitis 1 person — 2,1%; endophytic gastric cancer 1 person — 2.1%, celiac disease 1 person — 2,1%.

An important step was to identify the leading clinical symptoms and syndromes in emergency geriatric practice in polymorbid pathology, while we conducted direct dynamic monitoring of the applied medical technologies for 4 months in order to identify the leading clinical symptoms and syndromes in geriatric practice in emergency conditions.

Complaints made by elderly patients upon admission to the pulmo-allergological department.

Cough 38 (80.9 per cent), shortness of breath is 32 (68.1 percent), the temperature rise of the body 12 (25.5%), dyspnea 11 (23,4%), weakness 7 (14,9%), palpitations 7 (14,9%), headache 3 (6,4%), edema of the lower extremities 2 (4,3%), loss of consciousness 2 (4.3%), dizziness 1 person (2,1%).

Complaints made by elderly patients upon admission to the nephrology department.

A persistent increase in AP: 22 (68,8%), weakness of 21 people (66%), headache 3 (6,4%), edema of the lower extremities 16 (50%), lower back pain 12 (37,5%), dizziness 6 (18,8%), nausea 3 (9,4%), vomiting 1

people (3.1%), shortness of breath 7 (21,88%), chest pain 1 people(3.1 %), frequent urination 2 (6,3%), the decrease in amount of urine 4 (12,5%), pruritus 2 (6,3%).

Complaints made by elderly patients upon admission to the gastroenterology department.

Abdominal pain 36 people (75 %), weakness of 19 people (39.6 percent), headache 3 (6,3 %), edema of the lower extremities 1 person (2,1%), chest pain 5 (10.4%), and dizziness 3 (6,3%), palpitations 2 (4,2%), nausea 11 (22,9%), vomiting 6 (12.5%), dry mouth 4 (8,3 %), heartburn 6 people (12.5%), bitter taste in the mouth 6 people (12.5%), regurgitation of bitter 3 (6,3%), bloating 4 (8,3%), constipation 5 (10.4%), and rapid liquid feces 7 (14,58%), change in color of feces 3 (6,3%), increased abdominal volume 2 (4,2%), shortness of breath 3 (6,3%), epistaxis 5, the increase in body temperature of 1 person (2%), weight loss of 11 people (22.9 per cent), itch 3 (6,3%), yellowness of the skin, sclera 4 (8,3%).

Complaints made by elderly patients upon admission to the cardiology department.

Increased blood pressure 3 (7,1%), general weakness, 41 (97.6 percent), headache 11 people (26%), palpitations 8 (19%), edema of the lower extremities 2 (4,8%), dizziness 16 (38,1%), nausea 6 (14,3%), vomiting 2 (4,8%), dry mouth 5 people (11.9%), shortness of breath 26 people (61,9%), chest pain 42 (100%), chest pain radiating 19 people (45,2%), feeling of shortage of air 20 people (47.6 per cent), communication with a load 16 (38,1%), with the rest 13 (31%), relieved by nitroglycerin 15 people (35,7%), not relieved by nitroglycerin 4 (9,5%), abdominal pain 8 (19%), weakness, numbness in the left upper limb 4 (9,5%), loss of consciousness 5 people (11.9%), cough 4 (9,5%), the temperature rise 3 (7,1%).

Complaints made by elderly patients upon admission to the endocrinology department.

Raising AP 13 (39,4%), weakness 11 (33,3%), headache 9 person (27,3 %), palpitations 3 (9%), edema of the lower extremities 3 (9%), dizziness 4 people (12.1%), thirst 23 (69.7 percent), pain in the lower extremities of 20 people (61%), dry mouth 24 (72.7 per cent), chest pain 8 (24,2%), cramps in the calf muscles 11 (33,3%), numbness of the lower extremities 15 (45,5%), decreased vision 16 (48,5%), nausea 1 (3%), vomiting 1 (3%).

Complaints made by elderly patients upon admission to the surgical department.

Abdominal pain 63 people (91,3%), weakness of 37 people (53,6 %), nausea 44 (63,77%), vomiting 26 people (37,7 %), dry mouth 26 people (of 37.69%), heartburn 6 (8,7%), bitter taste in the mouth 12 people (17,4%), regurgitation of bitter 6 (8,7%), bloating 2 (2.9%) and constipation 4 people (5.8%), delay of gases 2 (2.9%) and change the color of the feces 5 (7.2 %), pain in the herniation 3 (4,3%), shortness of breath 3 (4.3%), decreased appetite 2 (2,9%), and fever 6 (8,7%), decrease of body weight 1 (1.4%), itchy skin 4 (5.8%), the yellowness of the skin, sclera 21 people (30,4%).

Complaints made by elderly patients upon admission to the neuro-vascular department.

Raising AP - 11 people (20%), general weakness 6 (10,9%), headache 15 (27,3%), mist in eyes 7 (12,7%), noise in the head 5 (9,1%), weakness(awkward) and numbness in the limbs 34 men (61.8 percent), immobilization in the limbs 4 (7,3 %), absence of speech 7 (12,7%), difficulty (slurred) speech 28 people (

50,9%), dizziness 14 (25.5%), nausea 8 (14.5%), and facial asymmetry 7 (12,7%), vomiting 5 (9,1%), shortness of breath 1 person (1,8%), pain (discomfort) in the chest 4 (7,3%), numbness of half of the face 4 (7,3%), unsteadiness when walking 12 people (21.8%), memory impairment 1 person (1,8%), loss of consciousness 2 (3,6%), difficulty swallowing 2 (3,6%), dysfunction of the pelvic organs 1 person (1,8%), anxiety, some inadequacy of the actions of 1 person (1,8%), negativism 1 person (1,8%).

Thus, the main complaints made by elderly patients upon admission to the emergency department were presented in the general scheme presented in table 1.

Table 1. Distribution of the leading clinical symptoms in elderly and senile persons when applying to the emergency department.

Complaint	Result	Frequency of occurrence
general weakness	142	42,9%
abdominal pain	107	32,3%
shortness of breath	103	31,1%
nausea	65	19,6%
chest pain	60	18,1%
dry mouth	59	17,8%
increased blood pressure/AP	49	14,8%
vertigo	44	13,3%
headache	44	13,3%
cough	42	12,7%
weakness (awkwardness) and numbness in the extremity	38	11,5%
vomiting	41	12,4%
difficulty (slurred) speech	28	8,5%
jaundice of the skin, sclera	25	7,6%
edema of the lower extremities	24	7,3%
thirst	23	6,9%
the increase in body temperature	22	6,6%
heartbeat	20	6,0%
pain in the lower extremities	20	6,0%
bitterness in the mouth	18	5,4%
reduced vision	16	4,8%
numbness of the lower extremities	15	4,5%

Complaint	Result	Frequency of occurrence
heartburn	12	3,6%
weight loss	12	3,6%
lower back pain	12	3,6%
unsteadiness when walking	12	3,6%
cramps in the calf muscles	11	3,3%
feces delay	9	2,7%
loss of consciousness	8	2,4%
itchy skin	9	2,7%
burp	9	2,7%
changing the color of the feces	8	2,4%
nausea	8	2,4%
facial asymmetry	7	2,1%
liquid rapid feces	7	2,1%
lack of speech	7	2,1%
fog in eyes	7	2,1%
bloating	6	1,8%
nosebleeding	5	1,5%
noise in the head	5	1,5%
immobilization in the extremities	4	1,2%
numbness of half of the face	4	1,2%
decrease in the amount of urine	4	1,2%
pain in the area of hernial protrusion	3	0,9%
gas retention	2	0,6%
difficulty swallowing	2	0,6%
loss of appetite	2	0,6%
increase in the volume of the abdomen	2	0,6%
frequent urination	2	0,6%
memory impairment	1	0,3%
dysfunction of the pelvic organs	1	0,3%
negativism	1	0,3%
increased excitability, some inadequacy of actions	1	0,3%
(empty)		0,0%

Complaint	Result	Frequency of occurrence
Overall result	1188	358,9%

Complaints that occurred in more than 5% of cases, we took for the development and scientific justification of clinical and organizational algorithms of the nursing process in the event of emergency situations in the elderly and senile age, which are based on symptoms.

The quality of the diagnosis in elderly patients is determined not only by the discovery and introduction of instrumental-technical and other methods of recognizing diseases in clinical medicine, but also by the use of reliable algorithms for the nurse's actions without waiting for the doctor to arrive.

The diagnosis must meet three basic requirements: 1) A necessary condition for a correct diagnosis is a firm assimilation of the diagnostic meaning of the symptoms, correct interpretation, and understanding of the pathophysiological mechanisms that explain the appearance of the symptoms. Of great importance is the understanding of symptoms in their relationship, the establishment of a single etiopathogenetic mechanism of development, the formation of syndromes from symptoms. The ability to think constructively, to generalize the resulting symptoms that form the expected form of the disease, based on diagnostic knowledge of the mechanisms of their origin determines the success of the diagnostic operation. At the final stage, the doctor determines the identity of the validity of the diagnosis — the establishment of a diagnostic consonance..

Diagnostic consonance — the presence of a coherent, logical relationship between the symptoms obtained during the verification of the diagnostic hypothesis by physical and special research methods. That is, the diagnosis must be correct and accurate (reliable). That is why we proposed the concept of “nursing diagnosis”.

2) Another necessary requirement for a diagnosis is its timeliness. The diagnosis should be made as quickly as possible, sometimes urgently, i.e. without delay. In the practice of medical professionals, situations are created when the diagnosis must be made urgently, immediately, since the patient's life depends on how quickly the diagnosis is made. As an example, situations with an acute abdomen with a perforated stomach ulcer, intestinal necrosis, perforated purulent cholecystitis, pancreatic necrosis, purulent appendicitis with peritonitis, or situations where there is bleeding from internal organs and you need to quickly determine the cause and source of blood loss. In such critical situations, medical professionals have only a few minutes to establish a diagnosis. So, with a perforated stomach ulcer, if the diagnosis is made immediately and the operation is performed, all patients survive. If the diagnosis is made after 6 hours and the operation is performed, the mortality rate is 2 %, if the operation is performed after 12 hours, the mortality rate is 50 %, after 24 hours, only a few survive.

With timely diagnosis of acute myocardial infarction and early thrombolytic therapy carried out during the first 6 hours, 30 deaths per 1000 treated patients can be prevented, if later, in the interval from 7 to 12 hours, then 20 deaths per 1000 can be prevented, later than 12 hours, thrombolytic therapy is useless.

In chronic diseases, there are also situations when “catastrophes” can develop. These situations may be associated with a sharp exacerbation of the disease or the development of complications that require an immediate decision on the revision of the diagnostic hypothesis and the determination of treatment tactics.

Thus, the medical professional should strive to establish an early diagnosis, especially in critical situations, when it is justified and dictated by the current circumstances. However, sometimes the desire for a quick diagnosis is not always reasonable. The need for rapid diagnosis depends on many factors: the nature of the disease, its possible consequences, the characteristics of the clinical course in this patient, as well as the diagnostic capabilities of the doctor available in the current specific situation. In addition, it should be borne in mind that reliable diagnosis in some diseases is possible only after a certain period of time, since the full clinical picture and specific symptoms appear later. In such situations, when the time factor does not require an urgent solution and the delay in establishing the diagnosis does not lead to disastrous consequences, it is necessary to monitor the patient. It should also be borne in mind that the key symptoms appear more often over time and become more numerous, they do not disappear, and their number does not decrease with the progression of the disease.

3) Another requirement that satisfies the diagnosis is its completeness. It is necessary to determine the main, leading pathology, its complications, as well as concomitant diseases, if any. The ability of the doctor to identify the main pathology, to explain all the symptoms by a single pathophysiological mechanism, to link them into a coherent unified system and to compare the clinical picture of the disease with similar previous observations is the basis of diagnostic art. It is also important to take into account the concomitant pathology and complications that have a negative impact on the course of the underlying pathology. The prognosis and treatment tactics of the underlying disease depend on the degree of completeness and comprehensive nature of the diagnosis.

The diagnostic algorithm provides for the gradual execution of mental operations in a certain sequence to establish a diagnosis. Following the algorithm guarantees the solution of typical tasks and ensures the effectiveness of diagnostic search.

The role of symptoms and syndromes in making a nursing diagnosis was determined

Diagnostic data detected by a medical professional during the examination of a patient are called symptoms, which are the initial stage of the diagnostic process and serve as reference diagnostic criteria for reasonable actions. When symptoms are detected, it is necessary to conduct a comprehensive analysis of each feature. Symptoms act as a consequence in relation to the causes that gave rise to them. Therefore, understanding the mechanisms of the appearance and development of symptoms can indicate a specific cause of their occurrence. This is the meaning of the determinism of each symptom.

The symptoms obtained by questioning are called subjective, and the physical methods of investigation are called objective. Subjective and objective symptoms can be early and late. If you have a certain range of diseases in your field of vision, which can be indicated by the detected early symptoms, then you can predict the appearance of late signs. In this case, it is necessary to direct the diagnostic search in a specific direction to detect the likely sign during a more in-depth examination, taking into account the frequency and degree of probability of a particular disease. For example, if a dissecting aneurysm of the thoracic aorta is suspected, the early sign is the sudden development of intense pain in the chest (in the heart area and along the spine), and the late one is the development of anemia, and in the rheumatic process, the symptoms of polyarthrititis are the initial manifestations, and later — carditis with the development of heart disease.

The diagnostic significance of symptoms increases dramatically when composing symptom complexes, which are called syndromes. Syndromes are formed on the basis of the general etiopathogenetic relationship of a group of clinical, instrumental and laboratory symptoms. The symptoms that make up the syndrome characterize a violation of the activity of a particular organ or system. The syndrome is the first result of the synthesis and the second stage of the diagnosis.

A characteristic feature of symptoms and syndromes is their dynamism and variability. They appear and change depending on the stage of the disease. For example, in croup pneumonia, the character of the dynamics of signs is manifested in relation to the change in percussion sound from blunted to dull, and the nature of the change in vesicular respiration from weakened to pathological bronchial.

When establishing the diagnosis of acute mesenteric occlusion, at the beginning of the disease, the combination of such symptoms as sudden cramping, acute epigastric pain, bloody diarrhea, repeated vomiting, short-term increase in blood pressure by the type of hypertensive crisis, leukocytosis, but in the absence of symptoms of peritoneal irritation, becomes crucial. At a later stage of mesenteric thromboembolism, with the development of destructive changes in the intestine, the early symptoms of mesenteric occlusion change to later ones: the pain is blunted and becomes permanent, intestinal paresis develops with the absence of peristalsis, symptoms of peritoneal irritation and endotoxic shock appear with a drop in blood pressure.

Therefore, the detection and correct clinical interpretation of reliable early signs is extremely important, especially in urgent clinical situations that require rapid, decisive actions by nurses to use the algorithms of the nursing process.

At the final stage of diagnosis, depending on the diagnostic capabilities of the medical facility, the nurse can apply special methods of laboratory and instrumental diagnostics before the arrival of the doctor, which allow you to confirm or exclude a specific form of the disease. To verify the diagnosis of exudative pleurisy or pneumonia, such methods of examination are X-ray, ultrasound, and, if necessary, puncture of the pleural cavity and examination of the exudate. The choice of a diagnostic study should be made

reasonably, based on the specific diagnostic situation. At the same time, it is necessary to take into account the complexity of its implementation and economic costs.

Thus, the main purpose of the algorithms is to correctly direct the nurse's action, implementing the stages of the nursing process along a certain path and to develop a specific plan for those studies that will finally clarify the diagnostic situation. All this can be done if the following requirements are met:

1. Critical attitude is the main condition for using the hypothesis. It always needs to be checked by objective and special (laboratory-instrumental) methods of research, and, if necessary, by repeated questioning of the patient. When the hypothesis is confirmed in the course of further examination of the patient, it becomes a diagnostic fact.

2. Search for conflicting symptoms. First, you need to identify the symptoms that contradict the hypothesis. If there are no conflicting symptoms, it is necessary to step up the search for symptoms that confirm the correctness of the diagnostic hypothesis.

3. Guide to action. The algorithm directs the nurse's actions to perform a specific task – conducting a careful (thorough) study of certain organs and systems of the patient in order to detect the expected changes in the body. In this case, both positive and negative symptoms of the clinical study of the patient are important. Positive symptoms increase the probability of a diagnostic hypothesis, indicate the correctness of the diagnostic direction, and stimulate the search for new symptoms that confirm the correctness of the initial assumption. The negative results of the study encourage the nurse to discard the original hypothesis and choose another, new one.

- 4 Accounting for the degree of probability. First of all, it is necessary to assume those diseases that are most common, and among them the most dangerous. In the case of a parity competition of symptoms, in several hypotheses under consideration, it is necessary to give preference to the more frequent possibility. For example, there are many known causes of gastrointestinal bleeding, but since the most common cause of sudden bleeding is peptic ulcer disease, the health care provider should keep it in mind as the most likely. According to the degree of probability of a particular disease, it is necessary to take into account the importance of not only age, gender, but also the presence of a chronic disease.

5. To avoid originality. One of the conditions for a properly constructed algorithm is its simplicity. However, if there is a diagnostic dissonance, which is more often observed in the presence of unclear symptoms in several body systems at once, it is necessary to keep in mind the possibility of a rare disease. The exclusion of an unlikely but serious disease at the beginning of consideration of several diagnostic versions is rather may be dictated by necessity and at the same time can be dangerous. Therefore, the medical professional should also remember and consider unlikely versions

6. Validation of the algorithm. Every hypothetical judgment needs to be tested with reliable, highly specific symptoms and signs that are specific only to a particular disease. The essence of hypothesis testing is to find a clinical fact that could confirm the hypothesis and at the same time reject all others with the

same degree of probability. It is necessary to test diagnostic hypotheses in practice by observation or detection of a highly specific feature by special research methods.

4. Conclusions

The general principles of activity for achieving an acceptable level of quality are also relevant for health care institutions: record what you do; do what you write; measure results; improve performance.

1. The developed and implemented algorithms in the therapeutic department of a medical organization are an effective solution for determining the emergency condition of an elderly patient in need of emergency medical care. The model makes it possible to clearly identify numerous problems: complaints, anamnesis, risk factors of elderly patients, methods of solving them by diagnosing diseases, based primarily on scientific evidence, the effectiveness of the introduced adjustments and changes for each specific case.

2 The introduction of algorithms in a large medical organization has led to a significant improvement in the quality of medical care: a reduction in the number of defects in the provision of medical care; the absence of serious complications in diagnostic studies

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