MINISTRY OF HEALTH OF UZBEKISTAN

TASHKENT MEDICAL ACADEMY

DEPARTMENT OF CLINICAL PHARMACOLOGY

Case Technology on the topic:

"PHARMACOLOGICAL APPROACHES TO THE MANAGEMENT OF MEDICATIONS AT SYNDROME OF HYPERTENSION"

Training and guidelines (case - studies) is intended for teachers and students 6 - year medical schools

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Education technology approved:

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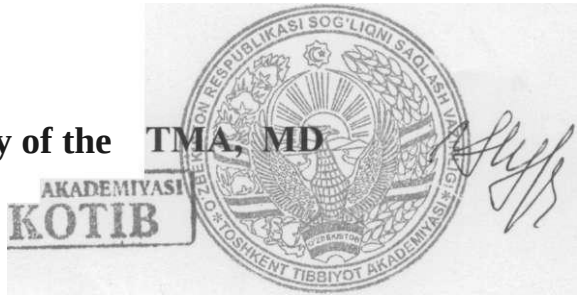
Scientific Secretary of the TMA, MD  **NM Nurillaeva**

Teaching abstract

The subject: "Clinical Pharmacology"

Topic: "Clinical and pharmacological approach to the management of medicines in the syndrome of hypertension"

The purpose of this case: Shaping the students of clinical thinking in choosing antihypertensive drugs for rational treatment of hypertension syndrome in primary care.

Expected learning outcomes - the results of the work with a case students learn how to:

- assessment and analysis of the situation;
- select the dosage of drugs with respect to age, function eliminates bodies of hypertension severity (mild, moderate, severe, hypertensive crisis);
- planning prolonged antihypertensive therapy according to the severity of the patient and the potential danger of the drug selected;
- selection criteria and deadlines for evaluating the effectiveness and safety of ongoing antihypertensive therapy;
- selection of the most appropriate combination for each situation;
- the application of theoretical knowledge to solve situational problems;
- definition of the problem and its solution;

For the successful resolution of the case study student should know

- the mechanism of action of antihypertensive drugs
- indications and contraindications to antihypertensive drugs
- dosing of drugs
- side effects of antihypertensive drugs
- the most significant interactions of antihypertensive drugs
- monitoring the effectiveness and safety in the use of antihypertensive drugs

This case reflects the real situation in primary care

Information sources case:

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3. Ю.М. Мамадов. Клиник фармакология. Ташкент, 2006.
4. Бертрам Катцунг. Базисная и клиническая фармакология. М., 2001.
5. Зуфаров П.С. и соавт. Методическое пособие «Клинико-фармакологический подход к выбору лекарственных средств для лечения синдрома артериальной гипертензии». Т., 2012.

6. Кобалава Ж.Д. Современные проблемы артериальной гипертонии. 2004.
7. Аляви А.Л. и соавт. Артериал гипертензиялар диагностикаси ва уларни даволаш, 2004.
8. Кириченко А.А. Гипертоническая болезнь у мужчин и женщин, 2003.

Characteristics of case study according to typological features
This case is classified as a desk, scene. He volume, structured. This case-issue.

For didactic purposes case Training, stimulating thinking in the real world in a hovercraft and primary care.

Case can be used in the disciplines: clinical pharmacology, therapy

I CASE
"The rational treatment of the syndrome of hypertension"
INTRODUCTION

Hypertension (HT) - a syndrome that is the increase in blood pressure (BP) (systolic blood pressure above 140 mm Hg or diastolic blood pressure greater than 90 mm Hg).

The current treatment of hypertension syndrome is aimed at restoring blood pressure in the normal or optimal levels binding effect on all modified risk factors. Treatment of hypertension should be an early and differential aimed at preventing the progression of the disease and prevent complications, active and long-lasting. In essence, it continues throughout life. Intermittent, a course of treatment is permissible only if gipertnonicheskoy disease and functional class. Indications for drug therapy:

- family history with regard to hypertension, myocardial infarction and stroke in relatives;
- increase in blood pressure during the night and morning, and pronounced blood pressure variability;
- presence of target organ damage (heart, blood vessels, brain, kidneys);
- identification of other major cardiovascular risk factors: hyperlipidemia, impaired carbohydrate tolerance, hyperuricemia.

Currently, several classes of antihypertensive drugs recommended for long-term treatment of hypertension. Antihypertensive agents that are suitable for both monotherapy and combination therapy, are: 1) angiotensin-converting enzyme (ACE), 2) AT1-blockers, angiotensin receptors, and 3) a thiazide (and thiazide) diuretics, and 4) calcium antagonists, and 5) β-blockers, and 6) selective blockers α1-adrenergic receptors, and 7) the central α2 agonists - adrenergic receptors, and 8) agonists I1-imidazoline receptors.

When choosing an antihypertensive drug for long-term therapy should be considered not only pathogenic mechanisms GB, and comorbidity in this patient. Are also important mechanisms of antihypertensive action of vasoactive drugs, particularly its pharmacodynamics and pharmacokinetics, side effects and contraindications for use.

DIFFERENTIAL TREATMENT OF ARTERIAL HYPERTENSION IN VIEW OF COMORBIDITIES AND OTHER RISK FACTORS

Criteria	Recommended group
Coronary artery disease	beta-blockers calcium antagonists (ACE inhibitors)
congestive failure circulation:	
- systolic dysfunction	diuretics ACE inhibitors (alpha-blockers)
- diastolic dysfunction	beta-blockers calcium antagonists ACE inhibitors (alpha-blockers, diuretics)
cerebrovascular disease	calcium antagonists (beta-blockers, diuretics, ACE inhibitors)
Peripheral circulatory disorders	Calcium antagonists (diuretics, ACE inhibitors, alpha-blockers)
diabetes mellitus	ACE inhibitors Alpha blockers (calcium antagonists)
renal failure	loop diuretics Thiazides only with creatinine clearance 30 mL / min calcium antagonists ACE inhibitors (alpha-blockers)
dyslipidemia	Alpha blockers (calcium channel blockers, ACE inhibitors)
bronchial asthma COPD	ACE inhibitors calcium antagonists diuretics Alpha blockers
advanced age	diuretics calcium antagonists ACE inhibitors Alpha blockers methyldopa

The purpose of this case study is to develop the student - user case study analysis of the abilities of the situation at admission of patients with hypertension and rational treatment of this syndrome in primary.

The solution proposed case study will enable students to achieve the following learning outcomes:

- Assessment and analysis of the situation;
- selection of the dosage of drugs with respect to age, function eliminates bodies of hypertension severity (mild, moderate, severe, hypertensive crisis);
- planning prolonged antihypertensive therapy according to the severity of the patient and the potential danger of the drug selected;
- selection criteria and deadlines for evaluating the effectiveness and safety of ongoing antihypertensive therapy;
- selection of the most appropriate combination for each situation;

Situation: It GPs approached a woman, 56 years with complaints of headaches, dizziness, tinnitus, weakness.

Anamnesis: Sick for many years. Constantly taking atenolol 100 mg per day and triampur 1 tablet 2 times a day. But in the last 6 months, this combination does not control the level of blood pressure. According to the patient, in the last six months, blood pressure mm Hg 180-190/90-100.

On examination: Skin normal color. Consciousness is clear, the situation actively.

Pulse 68 per minute, regular, blood pressure 190/120 mmHg, auscultation of the heart - the tones are muted, I-tone at the top is weak, II-tone emphasis on the aorta, abnormal noise is not revealed.

No breathing disorders on auscultation - no changes in the lungs. The abdomen is soft and painless.

Therapy was added to enalapril 10 mg once. After taking the first pill after 2.5 hours of blood pressure plummeted to 70/40 mm Hg Introduction of dobutamine, dopmina had no effect. After 48 hours, independently of blood pressure has risen to the level of 130/80 mm Hg, heart rate remained within a 60-66 minute, regular.

Questions and tasks:

1. Explain, resulting in a sharp drop in blood pressure?
2. What is the basis of this clinical situation?
3. Why hypertensive therapy was not successful?
4. Enter your side effect of ACE inhibitors, the appearance of which entails the abolition of the drug?

Task: Based on the analysis of the patient should be the cause of a condition set, make the necessary diagnosis, make an informed decision for the further management of the patient with the syndrome of hypertension.

II. Guidelines for students

2.1 The problem:

Selecting tactics patients with the syndrome of hypertension and choice of optimal therapy with possible side effects and interactions of selected drugs in primary care

2.2. Subproblems:

1. Analysis of the causes of the situation;
2. Analysis of the history and prior acceptance of drugs;
3. Analysis of the clinical situation, including side effects and interactions of the drugs;
4. Selection of the necessary preparations for a rational therapy of hypertension in this patient;
5. Come to a certain address in a hovercraft and primary care;
6. What should be the policy for further treatment of the patient?

2.3. Algorithm solutions:

1. Analysis of the causes of the situation
- what should be the dosage of drugs for the initial treatment of hypertension
- dosing of enalapril
2. Analysis of the history and prior taking drugs
- long-term use of of thiazide diuretics.
3. Analysis of the clinical situation, including side effects and interactions of the drugs
- side effects of thiazide diuretics in long-term use
- interaction of thiazide diuretics and ACE inhibitors
4. Selection of the necessary preparations for a rational therapy of hypertension in this patient
- ACE inhibitors
- Thiazide diuretics
5. Come to a certain address in a hovercraft and primary care;
- Treatment if necessary
- Emergency hospitalization
- Emergency care

Instructions for independent work in the analysis and solution of practical situations

Leaf analysis of the situation

Stages of	**Recommendations and advice**
1. Familiarization with case	First check with case Reading, do not try to analyze the situation
2. Familiarization with the situation	Once again, read the information, select the paragraphs that seemed important to you. Try to describe the situation. Determine that it is important and what is secondary.

3. Identification, formulation and justification of the key issues and sub-problems	The problem: The choice of a rational drug combinations with the interaction of drugs for the treatment of hypertension in primary care
4. Diagnostic analysis of the situation	When analyzing the situation, answer the following questions: What are the rational drug combinations for the treatment of hypertension? What side effects may occur with prolonged use of thiazide diuretics? What are the side effects of ACE inhibitors may occur in the preliminary treatment of patients with diuretics? What types of drug interactions may occur with concomitant administration thiazide diuretics with ACE inhibitors? Pharmacokinetic parameters which are characteristic of enalapril? Why hypertensive therapy with dobutamine was not effective in this situation? How can relieve the patient of the situation when?
5. Selection and justification of the methods and means of addressing	List all the possible ways of solving this problem in a given situation
6. Development and resolution of the problem situation	Explain the reason for this situation, solve a problem in primary care

Instructions for group work to analyze and solve practical situation

Stages of	**Recommendations and advice**
Reconciliation of the situation and the problem	Discuss and agree on different views of members on the situation, the problem of the subproblems.
Analysis and evaluation of the proposed methods and means of solving problems, the choice of priority the idea to solve the problem.	Discuss and evaluate the proposed options and ways to address the problem. Select the priority, in your opinion, the idea of solving the problem.
Develop mutually acceptable solution to the problem and detailed design implementation.	Develop a mutually acceptable solution to the problem and the detailed design implementation.

	1. 2. etc.
prepare a presentation	Arrange the results in the form of an oral presentation on behalf of the group. Discuss and decide the question of who will represent the results of the group work: the leader of the whole group or with the division between the participants (co-reports), depending on the tasks to be solved by them in the course of analyzing and solving problems. Prepare illustrative materials in the form of posters, slides or multimedia. • In the preparation of reports, especially mark the rough outline of what you say, do not go into the details!

Sheet analysis and problem solving

The name of the stage with a briefcase	**The content of the stage**
Acquainted with the situation in a case	Review given the particular situation and determination essential to solving the problem of information.
analysis of the situation	When analyzing the situation, answer the following questions: What are the side effects typical of thiazide diuretics? What side effects are typical of ACE inhibitors? Which combinations of drugs are most effective and safe for the treatment of hypertension? The mechanism of interaction of thiazide diuretics and ACE inhibitors in their joint application? What pharmacokinetic parametric characteristic enalapril?
substantiation is	ustification of the problem and its key components.
Choice of alternatives addressing	Formulation of alternatives solutions situational problem.
Development and justification of solution	Detailed development and justification of a particular decision.

Table assessment of individual work with case

Participants	Evaluation criteria and indicators				
	Analysis of the current situation max 1,0	Substantiation is max 0,5	Choice of methods and means of addressing max 0,5	Detailed development of measures to implement the decision max 0.5	The overall score (max 2,5) *
1.					
2.					
№					

* 2.0 - 2.5 points - "excellent", 1.5 - 2.0 points - the "good"
1.0 - 1.5 points - "satisfactory" less than 1.0 points - "unsatisfactory"

The evaluation system options group address

1. Each group is given two evaluation points. It can give them all at once to one embodiment of the decision or split into two (1:1 0,5:1,5, etc.), not including the assessment of their own solutions.
2. All the scores for each alternative solutions are added. The winner is the solution with the highest number of points. In disputed cases, you can take a vote.

Table evaluate options group decision problem, the score

Group	Alternative solutions to problems			
	1	2	3	№
1.				
2.				
№				
The sum				

Score presentation of the proposed solution

Group	Completeness and clarity of presentation (1 - 20)	Visibility of the universe represented presentation (1 - 20)	Mass and an active member of (1 - 20)	The originality of the proposed solutions (1 - 20)	Compliance with these evidence-based medicine (1 - 20)	The total amount of points (max 100)
1.						
2.						
№						

III. OPTION ACTION CASEY TEACHER

1. Cause a sharp drop in blood pressure, the patient was a large initial dose of enalapril (10 mg).
2. The basis of this clinical situation is reduced blood volume and sodium concentration after prolonged thiazide therapy.
3. The reason for the lack of effect of hypertensive therapy is prolonged circulation in the blood of the active metabolite of enalapril.
4. The tactics of a general practitioner:
    1. An electrocardiogram;
    2. To facilitate the patient administration of solutions containing sodium chloride;
    3. Further therapy: atenolol 100 mg / day, triampur one tablet per day and enalapril 5 mg / day once,

IV CASE - TECHNOLOGY TRAINING WORKSHOP

I4.1 model learning technologies

Topic	Rational treatment of hypertension syndrome
Hours - 2:00	Number of students: 9-10 people
Form of lesson	Workshop on widening and deepening of knowledge, development of skills tactics of patients with hypertension
plan workshop	Introduction to the training session actualization of knowledge Work with a case of mini - groups presentation of the results Discussion, evaluation and selection of the best option strategies

	Conclusion. Evaluation of the groups and students, the degree of achievement of lesson
The purpose of the training session: Improving knowledge on rational treatment of patients with the syndrome of hypertension. Developing the ability to access, analyze the situation, the choice of tactics, diagnosis, emergency care, rational treatment of patients with hypertension in primary care.	
Tasks the teacher: to consolidate and deepen the knowledge of the treatment of the syndrome AG, to develop the ability to select products for rational treatment of the syndrome. Develop skills to provide emergency assistance Develop the skills of independent decision-making in the treatment of patients with the syndrome of hypertension in primary care	Learning outcomes: access and analyze the situation, choose the algorithm of treatment of hypertension syndrome. develops independent decision-making in the event of side effects due to drug interactions in primary produce a sequence of actions for emergency assistance if required
Training methods	Case studies, discussion, practical method
Learning tools	Case, guidance
Form of training	Individual, front, group work
Conditions of learning	Audience-themed room with technical equipment, work in groups
Monitoring and evaluation	Observation, blitz poll presentation, evaluation

Flow chart of lesson based on the case

Stage and the content of the work	Activities	
	Teachers	Students
The preparat ory	Explains the purpose of case - the stage and its effect on the development of professional knowledge. Distributes materials case and	Listen Independently examine the contents of an

phase	introduces the algorithm for analysis of the situation (see Guidelines for students). Gives the task independently analyze and record the results in the "List of the situation analysis	individual case and fill the sheet of the situation.
I stage. Introduction to the training session (10-15 min)	1.1. Thread class is called, the plan, its goals and objectives and expected learning outcomes. 1.2. Introduces the mode of operation for employment and evaluation criteria (see the instructions for students)	Listen Are appropriate records
Phase II core 60 min	2.1. Justifies the statement of the problem and the choice of the situation - relevance. Conducting a poll in order to enhance students' knowledge on the topic (application number 1): The drug is used to treat symptoms of hypertension? The choice of antihypertensive drugs, depending on the degree of hypertension, age, comorbidity, including body's metabolism and elimination? 2.2. Divides students into groups. Reminiscent of the content and objectives of the case. Introduces (like) the rules of the group and the rules of the debate. 2.3. Gives the task, specify the correct perception of the job (application number 2): What side effects are characteristic of the major anti-hypertensive drugs and the most significant interaction effects of antihypertensive drugs. Rational drug combinations. Emergency measures aid in the event of side effects of antihypertensive drugs in primary care. 2.4. Coordinates, advises, directs the learning activities. Evaluates the results of individual work: Sheets of the situation. 2.5. Of the presentation on the results of the	Answer questions, discuss and ask clarifying questions. Are divided into groups Discuss, conduct a joint analysis of individual problems, determine the most important aspects of the situation, the main problems and their solutions, process, results of the decision Present options to address issues 10-15 minutes after the end of the presentation, choose the best option

	work done to address the case study, discussion. Organizer of the discussion: ask questions, remarks, recalled the theoretical material 2.6. Tells own solution CASE	Develop a unified system, the discussion
III Summary of studies, analysis and evaluation 20 min	3.1. Summarizes the results of training activities, announces a joint evaluation of individual work. Analyzes and evaluates the group, notes the positive and negative points. 3.2. Stresses the importance of case - the stage and its impact on the future specialist	Listen. self-evaluation and self-assessment Opine