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NEBULISING THERAPY OF BRONCHIAL ASTHMA ATTACKS

The data indicate that for the relief of asthma attacks in ambulance use of combined bronchodilator drug Berodual and method of its delivery are most effective and safe. Application of nebulized therapy with the drug Berodual provides quick and robust result in the treatment of bronchial obstruction. The advantage of for this therapy is the lack of side effects, reduction of repeat calls and hospitalization.
Keywords: bronchial asthma attacks, inhalation therapy

Introduction

Relevance of the research topic. For many centuries to treat diseases of the lungs used inhalation therapy. It is known that inhalations of vapors of menthol, eucalyptus were used civilizations of Egypt, India and the Middle East. Mentions of fragrant smoke inhalation various plants found in the works of Hippocrates. For lung disease inhalation therapy is the most substantiated, because medicament goes directly to that place where he must act - in the respiratory tract. The successful inhalation therapy depend not only on the correct choice of the drug, but also from appropriate method of drug delivery to respiratory tract. Currently, there are several types of delivery systems: dose inhaler the combination metered-dose inhalers with spacers, powder inhalers, and nebulisers.

The longest history of use nebulisers are - they have already been applied over 100 years. The word "nebulizer" is derived from the Latin "nebula" (fog, cloud), was first used in 1874 to refer to a tool which converts a liquid into an aerosol for medical purposes. First nebulisers were steam and used for inhalations of vapors of resins and of antiseptics in patients with tuberculosis. Modern nebulisers little resemblance to these devices, but they fully meet the old definition - the product aerosol of a liquid drug.

Currently depending on the type of energy which transforms the liquid into an aerosol, there are two main types of nebulizers: inkjet or compressor - using a jet of gas (air or oxygen), ultrasound - using the energy of the oscillations of the piezoelectric crystal.

Nebulizers are used for intensive and urgent therapies: at obstructive lung diseases, respiratory tract infections, a change in bronchial secretions, coughing, for diagnosing airway responsiveness in the samples. Nebulizers used in the outpatient, steady-state conditions, and also in-home therapy in various diseases of the respiratory tract.

The Absolute indications: insufficient effect preceding bronchodilator therapy, the inability to use the inhalers dosing, lack of dosage forms for metered-dose inhalers, the need for targeted drug delivery especially in the bronchi and alveoli.

Relative indications: the need for delivery to the lung a large dose of medicinal substances in a short period of time, patient preferencewhose practical convenience.

Advantages of nebulising therapy: absence of necessity in coordination breathing with the arrival of the aerosol, the possibility of using of high-dose, continuous supply of medicines using a compressor, absence freon gas (hlorflyuorokarbona), which may increase bronchial reactivity, fast delivery, portability.

Disadvantages nebulising therapy: the relatively high cost, limited number of medicines for nebulizers, caring for the device for excluding contamination, the need for a source of electrical energy.

Are prohibited for nebulization: clean water, hypotonic solutions, distilled water, suspensions and solutions containing suspended particles. decoctions and herbal infusions, oil solutions, aminophylline, platifillin, papaverine, diphenhydramine, etc., as having no substratum impact on the of the mucous membrane of the bronchi.

Rules on the use of nebulizers:

1. During inhalation, the patient should be in a sitting position, not to talk to and keep the nebulizer upright.
2. Before inhalation necessary check the expiry date of the drug.
3. Used as a solvent sterile saline solution for refueling inhalation solution - sterile needles and syringes.
4. It is recommended to use the the nebulizer fill volume 2.4 ml flow "working" 6-8 liters of gas per minute (use of compressors this option is set).
5. During inhalation try to breathe deeply and slowly through your mouth (especially important when using a mask), to try to hold their breath for 1-2 seconds before each breath (this is often not feasible in critically ill patients, they are encouraged to breathe calmly).
6. Continue to inhalation while in nebulizer chamber is liquid (usually about 5-10 minutes), at the end of inhalation - Tapping lightly nebulizer for the better use of the drug.
7. After inhalation of steroid medications and antibiotics should carefully rinse your mouth.
8. After inhalation, flush the nebulizer clean as possible with sterile water, dry the by using napkins and a jet of gas (hair dryer). Frequent washing of the nebulizer necessary to prevent the crystallization of drugs and bacterial contamination.

Goal of carrying out study was to evaluate the efficacy of combined bronchodilator drug Berodual administered by nebulizer for edema attacks of a dyspnea patients with bronchial asthma, compared with conventional therapy. In this paper was used nebulizer "Boreal" (Italy).

Berodual - combined bronchodilator drug, which consists of fenoterol (beta-2-agonist) and ipratropium bromide - M-cholinergic receptor blocker. Ipratropium bromide blocks cholinergic receptors, beta-2-agonist causes stimulation of beta-receptors of smooth muscle cells and

prompt bronchodilation. The combination of substances with different mechanisms of action potentiates the bronchodilator effect and increases its duration.

The diagnostic criteria acute asthma symptoms believed specified in the Global Strategy for the treatment and prevention of bronchial asthma, (GINA 2011): dyspnea, expressed by dyspnea expiratory character, whistling rhonchuses, feeling of constriction in the thorax and cough, intensifying at night and early morning hours. Patients excluded from the study: pregnant women, children and patients with gastric ulcer and 12 duodenal ulcer, a severe form of hypertension.

In the main group using inhalation solution Berodual 20 ml in vial for inhalation therapy: 1 ml (20 drops) contains 500 micrograms and 250 micrograms fenoterol ipratropium bromide.

Materials and research methods

According to the criteria, the study included 72 asthmatic patients with light and heavy, consult a medical emergencies. The average age of the examined (54,2 ± 7,1) years, of which 32 were male (44.4%), women - 40 (55.6%). The comparison group consisted of 37 patients receiving traditional therapy with the use of drugs aminophylline 2.4% -10.0 / O, prednisolone 30-60 mg / in.

Results and discussions

Disease duration examined patients ranged from 2 to 8 years, and an average of (5,9 ± 2,9) years. The frequency of attacks of breathlessness ranged from sporadic cases of some patients to 2-5 episodes per day in the other. To all patients underwent a comprehensive clinical inspection, including an analysis of complaints, medical history, physical and instrumental methods.

The effectiveness of treatment berodual nebulized assessed by relief of acute asthma attacks, the number of repeat calls for LUTS hospitalization rate indicators of of patients and computer spirometry done before and after treatment.

According to data computer spirometry that the best indices of external respiration were obtained in patients within 15 minutes of inhalation therapy: FEV1 increased by 11.5%, whereas in the comparison group of patients the results were slightly lower. After 30 minutes, virtually all spirometry in the two groups authentically increased ($p < 0.001$). In the group of patients receiving nebulized Berodual: FEV1 - by 17.1%, the Tiffno - by 13.9%, while in the comparison group: FEV1 - 12.0%, the Tiffno - 10.8%.

Changes in indicators spirometry 60 minutes after treat an attack was more significant in patients treated with nebulized Berodual than in the control group. In the group of patients after inhalation therapy FEV1 authentically increased by 18.6%, the Tiffno 13.3%. In the comparison group FEV1 increased by only 13.0%, the index Tiffno - by 10.1%.

In summary, nebulized therapy berodualom has allowed stop attacks of asthma in 97.2% of patients within 10-15 minutes, only 5.6% of patients required additional intravenous administration bronchial spasmolytic and glucocorticosteroids, and the patient did not require hospital treatment, the side effects were observed. In patients who received therapy without application a nebulizer observed temporary side effects such as high blood pressure (10.8%), tachycardia (16.2%), arrhythmia (13.5%), including hospitalization in 4.2% of patients needed . In applying inhalation therapy berodualom to re appealability was 5.6%, whereas in patients in the comparison group it was 1.4 times higher (8.1%) ($p < 0.001$).

Conclusions

- The findings suggest that for the relief of attacks of a dyspnea in ambulance use of combined bronchodilator drug Berodual and method of its delivery are the most effective and safe.
- Application nebulized therapy with the drug Berodual allows get a fast and robust result in the treatment of bronchial obstruction.
- The advantage of this therapy is the lack of side effects, reduction of repeat calls and hospitalization.

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БРОНХИАЛЬДЫ АСТМА АТҚЫШТАРЫНЫҢ ТЕРБЕЛІСІ

Түйін: Жедел жәрдемде демікпе шабуылын жеңілдету үшін Berodual біріктірілген бронходилаторын қолдану және оны жеткізу әдісі ең тиімді және қауіпсіз екенін көрсетеді. Бородуальды препаратты қолдану арқылы небулайзер терапиясын қолдану бронхтың обструкциясын емдеуде тез және тұрақты нәтиже алуға мүмкіндік береді. Бұл терапияның артықшылығы - жанама әсерлердің болмауы, қайталанатын қоңыраулар мен госпитализация санының төмендеуі.

Түйінді сөздер: бронх демікпесінің ұстамасы, ингаляциялық терапия

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НЕБУЛАЙЗЕРНАЯ ТЕРАПИЯ ПРИСТУПОВ БРОНХИАЛЬНОЙ АСТМЫ НА ДОГОСПИТАЛЬНОМ ЭТАПЕ

Резюме: Полученные данные свидетельствуют, что для купирования приступов удушья в условиях скорой медицинской помощи применение комбинированного бронхолитического препарата Беродуал и способ его доставки являются наиболее эффективными и безопасными. Применение небулайзерной терапии с использованием препарата Беродуал позволяет получить быстрый и устойчивый результат при лечении бронхиальной обструкции. Преимуществом данной терапии является отсутствие побочных эффектов, снижение количества повторных вызовов и госпитализации.
Ключевые слова: приступ бронхиальной астмы, ингаляционная терапия