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Cough in general therapeutic practice

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Cough is the most common symptom in internal medicine and is traditionally a multidisciplinary problem, because it faces the doctors of different specialties. Thus, cough is among the top five reasons that force the patient to seek medical care (European Respiratory Society, 2010). In particular, such a widespread disease like ARVI is almost always accompanied by cough [7, 9], and patients with chronic cough of unknown etiology range from 10 to 38 % of patients in the pulmonologist's practice [11, 14]. Often the patient visits the doctor not because the cough itself, but a fear that it is a symptom of any serious disease such as lung cancer. In addition, the cough can cause the development of a number of complications, which include fatigue, malaise, insomnia, hoarseness, pain in the bones, muscles, sweating, urinary incontinence, arrhythmias, spontaneous pneumothorax, etc., which significantly reduces the quality of life of the patient. Despite the significant number of causes of coughing, it is possible to identify them in 88–100 % of patients, and the treatment is effective in 84–98 % of cases if the diagnosis is made correctly, and causes of coughing are eliminated. It should also be noted that a large part of patients can have simultaneously 2–3 causes of coughing, and therefore the diagnostic search should not stop after the detection of the first of them [13, 25–27].

Cough is an important adaptive response of the body aimed at the liberation of the airways from particles falling from the outside or formed endogenously. It is a sharp expiration, most often it occurs reflexively, but it also may be caused voluntarily. Cough begins with a deep breath, followed by closing of glottis and contraction of respiratory muscles. Due to the synchronous tension of respiratory and auxiliary muscles with a closed glottis, increases intrathoracic pres-

sure and narrow trachea and bronchi. At the time of opening of glottis, a sharp pressure difference creates in the narrowed airways a rapid airflow (forced jerky expiration), entraining mucus and foreign particles. Cough reflex arc consists of five components – cough receptors, afferent nerves, cough center, efferent nerves and respiratory muscles (Figure).

The cough reflex is usually initiated by stimulation of sensory nerve endings of the oral cavity, paranasal sinuses, larynx, vocal cords, pharynx, external auditory canal, the Eustachian tube, trachea and its bifurcation, places of bronchi dividing (bronchial spurs), pleura, pericardium, diaphragm, distal part of esophagus and stomach. Cough receptors localized in the airways, are represented by two types of nerve endings:

- irritant fast-adapting receptors that respond to mechani-

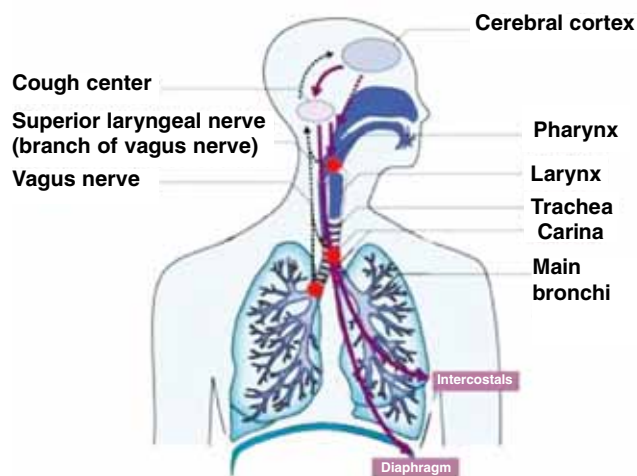


Figure. Anatomy of the cough reflex (by Calvin K.W. Tong in modification of Chung K.F., Pavord I.D., 2008) [20]

cal, thermal and chemical stimuli and located in the proximal parts of the respiratory tract;

- C-receptors or C-fibers stimulated by various proinflammatory mediators (prostaglandins, bradykinins, P substance et al.) and located more distally.

The most sensitive reflexogenic zones in the airways are the posterior surface of the epiglottis, the front interary tenoid surface of the larynx, area of the vocal cords and infraglottic space, tracheal bifurcation and ramus area of the lobar bronchi. Cough receptor density decreases toward the distal parts of the bronchial tree; at the same time, they become more sensitive to irritants causing coughing. Afferent part of the reflex arc of the cough reflex is formed by the fibers of the trigeminal, glossopharyngeal, superior laryngeal, and vagus nerves. Impulse that occurs during irritation of the reflex zones is transmitted through afferent fibers into the cough center located in the medulla oblongata. Reflex arc closes with efferent fibers of the recurrent laryngeal, phrenic and spinal nerves going to the muscles-effectors – muscles of the chest, diaphragm and abdominal muscles. All of this explains the fact that except coughing patients often present a variety of other complaints when visiting a doctor.

As previously mentioned, the causes of cough onset in patients are numerous and varied, but they can be divided into the following groups.

1. Inhalation of various irritants (smoke, dust, gases).
2. Aspiration of a foreign body, discharge of the upper airways (rhinitis, sinusitis) or gastric discharge (gastroesophageal reflux disease).
3. Inflammation and infiltration of the mucosa of the airways, their compression and bronchospasm (acute and chronic bronchitis, bronchiectasis, pertussis, bronchial asthma – BA, chronic obstructive pulmonary disease (COPD), lung cancer, carcinoid, sarcoidosis, tuberculosis, compression of the trachea and bronchi by enlarged lymph nodes, mediastinal tumors, aortic aneurysm, etc.).
4. Parenchymal lung diseases: histiocytosis, pneumonia, lung abscess.
5. Heart failure due to peribronchial and interstitial edema.
6. Adverse effects while taking inhibitors of angiotensin-converting enzyme (ACE), nitrofurans, oily solutions for intranasal application.
7. Rare causes, among which can be psychogenic reflex cough that occurs in case of pathology of the external auditory canal (cerumen impactions), middle ear, etc.

In practical activities, there are different types of cough, on basis of which can be suspected the presence of a certain disease: dry, wet, barking, spastic, husky, whooping, staccato cough, bitonal, coughwith syncopes. For example, a dry cough is frequently observed in dry bronchitis, throat or pleura irritation, miliary tuberculosis, intrathoracic lymphadenopathy. Wet cough is noted usually in bronchitis and pneumonia. Barking cough is most often observed in laryngitis and tracheitis, often it has a metallic overtone. Spastic cough is typical for BA, acute obstructive bronchitis, bronchiolitis or intrusion of foreign body into the airways. It is usually unproductive, compulsive often it has a whistling overtone at the end. Husky cough usually occurs in inflammation of the vocal cords. Whooping cough ending by vomiting at the end of the cough attacks is observed in pertussis in children, in some forms of pulmonary tuberculosis, chronic pharyngitis due to irritation of the sensitive mucous membrane of the throat by viscous sputum. In pertussis such cough is accompanied by inspiratory whoops(convulsive whistling breaths). Cough without inspiratory whoopssuggests the possibility of intrusion of a foreign body into the lumen of the trachea or bronchi. Staccato cough is most often observed in chlamydial pneumonia in children during the first months of life. It is dry, intermittent, ringing, paroxysmal, but without inspiratory whoops, accompanied by rapid breathing. Bitonal cough (at first low, then high tones) occurs in lymphobronchial-fistulas, sometimes – in case of intrusion of foreign bodies into the large bronchi. Cough with syncopes (brief loss of consciousness) occurs due to the decrease in venous inflow and reduction of cardiac output while increasing of intrathoracic pressure.

In the literature, there are many attempts to classify cough, but the most widely used in practice is the classification of cough on the following grounds:

- bynature: non-productive (dry) and productive (wet);
- byintensity: semicough, mild and strong;
- by frequency: occasional, short-termor paroxysmal and persistent;
- byduration: acute – 3 weeks, subacute – from 3 to 8 weeks, chronic – more than 8 weeks.

At that, most often difficulties appear when determining the causes of chronic cough, because it occurs in a variety of thoracic and extrathoracic diseases (Table 1).

A list of the most frequent causes of acute and chronic cough

Table 1

Acute cough (duration up to 3 weeks)	Chronic cough (duration 3-8 weeks or more)
Non-productive (dry)	
ARVI, rhinitis and sinusitis (allergic and non-allergic), pulmonary embolism, cardiac asthma, dry pleuritis, external otitis, pericarditis, pneumothorax, foreign body aspiration, pertussis	Bronchial asthma (cough variant), chronic inflammatory diseases of the nasopharynx, interstitial lung diseases, intake of ACE inhibitors, expansive processesin the mediastinum, neurotic (psychogenic) cough
Productive (wet)	
Acute bronchitis, pneumonia	Chronic bronchitis, COPD, bronchial asthma, bronchiectasis, bronchial cancer, mucoviscidosis, congestive left ventricular failure

In practice, in some cases, can be suspected precisely enough the presence of a certain disease by the nature of cough (Table 2) or the character of sputum (Table 3).

Earlier R.S. Irwin et al. [25–27] conducted an interesting prospective study in order to identify the main causes of chronic cough, which resulted in the following: in 54 % of patients was found postnasal drip syndrome, in 28 % – gastroesophageal reflux, in 7 % – chronic bronchitis, in 31 % – bronchial hyperreactivity, in 12 % – other causes of cough, and in 1 % of cases the cause of cough could not be established. It is also important that almost 1/4 of the surveyed had two causes of cough, and 3 % – even three causes. Some authors suggest that in a group patients of different age, who do not smoke, do not take ACE inhibitors and have normal chest X-ray, chronic cough in 93,6 % of cases develops as a result of the diseases, which include postnasal drip syndrome, BA and gastroesophageal reflux, and which are currently called «cough triad».

At the heart of postnasal drip syndrome is mechanical stimulation of the afferent arc of the cough reflex by secretion that flows down to the laryngopharynx, which causes coughing. Diagnosis is based on the history data (patient describes distinctive sensation of the secretion on the posterior wall of the throat), physical findings and laboratory test results.

Positive result of appropriate therapy with the elimination of cough is a key point in the diagnostics of this disease. Therapeutic strategy depends on the nature of rhinitis and/or sinusitis (infectious, allergic, professional) causing postnasal drip syndrome.

Bronchial asthma (especially its cough variant) is one of the most common causes of chronic cough. Diagnostics of this disease is based on the identification of bronchial hyperresponsiveness using bronchoprovocation tests. Cough in this version of BA may be its only manifestation and qualified as an analogue of asthma attack, and cough reduction after basic anti-inflammatory therapy confirms the diagnosis.

Gastroesophageal reflux is the third most common cause of chronic cough. At that, the mechanism of cough development lies in vagus-mediated esophageal tracheobronchial reflex. Herewith in 2/3 of patients other gastrointestinal symptoms may be absent, although they may complain of heartburn after meals associated with chronic cough. Increased acidity in the lower esophagus is a precondition for chronic cough, and the most sensitive test is a 24-hour esophageal pH monitoring. In this case, it is important to assess the duration, frequency of reflux episodes, as well as to establish their relationship with episodes of coughing.

The relationship between the nature of cough and the reasons for its development

Table 2

Nature of cough	Possible causes of cough
Loud, sonorous	Tracheitis, bronchitis, compression of the trachea (by tumor or enlarged lymph nodes)
Rough, barking	Larynx damages (hives)
Paroxysmal cough with long and deep breaths	Pertussis
Painful	Tracheitis
Night cough	Bronchial asthma, heart failure, sinusitis, COPD, chronic bronchitis, pertussis
Morning cough	Bronchiectasis, chronic bronchitis, COPD, gastroesophageal reflux
Coughing and wheezing	Bronchial asthma
Coughing and shortness of breath	Bronchial asthma, chronic bronchitis, COPD, heart failure

The relationship between the nature of sputum and causes of cough

Table 3

Nature of sputum	Possible causes of cough
Mucoid (whitish, transparent)	ARVI, COPD
Purulent (yellow-green, contains many white blood cells)	Bacterial infections of the airways
Viscous, vitreous	Bronchial asthma
Rust-colored	Heart failure
Blood streaked	Pneumonia, lung cancer, tuberculosis
Pink, albuminoid	Pulmonary edema
Purulent, malodorous, in a large amount	Lung abscess, bronchiectasis

Chronic bronchitis is also characterized by the presence of chronic cough. According to the WHO classification, chronic bronchitis is a disease, in which during two years at least 3 months in a year patient has productive cough without specific causes of the disease, such as bronchiectasis, BA or tuberculosis. Therapeutic approach of chronic bronchitis is aimed at reducing sputum production, improvement of its excretion, reducing inflammation in the airways. At that, it is extremely important that the patient stopped smoking.

Bronchiectasis, which is characterized by gross violations of mucociliary clearance and congestion of bronchial mucous with the development of dilatation of the bronchi, clinically is presented by chronic cough. Its diagnostics is based on history data on the duration and nature of the disease, chest X-ray, bronchography, as well as computer tomography data with high resolution. It should be noted that cough in bronchiectasis is a factor that contributes to a discharge of large amounts of mucus that accumulates in bronchi, therefore this symptom requires treatment only during exacerbation of the disease. Therapeutic measures in bronchiectasis include physical therapy, drugs that enhance mucociliary clearance, broad-spectrum antibiotics.

Lung cancer, which can also be a cause of chronic cough, more often is diagnosed in men of 40 years and older with many years of smoking or exposure to occupational hazards. Diagnosis is confirmed by X-ray examination of the chest, fiberoptic bronchoscopy data, cytologic analysis of sputum and bronchoalveolar lavage.

Pulmonary tuberculosis also refers to the diseases, which cause the syndrome of chronic cough. At that, diagnosis is based on additional symptoms that are typical for pulmonary tuberculosis (weight loss, night sweats, general weakness, loss of appetite, low-grade fever, which last more than 2–3 weeks), results of sputum analysis for mycobacterium tuberculosis and data of chest x-ray examination.

In cardiology practice, patients, who with hypotensive aim were prescribed to take ACE inhibitors, may also have chronic cough. Usually it is unproductive, accompanied by throat irritation and is not dose-dependent. Cough occurs within a few hours or even months after initiation of the therapy with ACE inhibitors, and its reduction is observed after 4–6 weeks or more after withdrawal of specific drugs.

It should be noted that diagnoses of certain diseases, causing coughing, relate to diagnoses by exclusion. This applies primarily postinfection and psychogenic cough. Postinfectious or postviral cough appears after ARVI in past. It may disappear by its own and is not accompanied by the presence of pathological changes on the chest X-ray. If the cough is protracted, patient can be assigned to inhaled ipratropium bromide, which improves the patient's condition. Psychogenic cough is typical mainly for children and adolescents. If it is suspected, the patient needs to consult a psychiatrist. Treatment in this case includes the recommendations of this specialists and short courses of non-specific antitussive therapy, however, the efficacy of these agents has not been proven in large randomized trials.

Thus, cough is typical for diseases of different etiology and prognosis, and proper treatment order requires accurate assessment of the causes and mechanisms of formation of this symptom.

Currently are published various consensus documents regarding the diagnostics of cough syndrome (especially chronic) in adults and children [19, 28, 32, 38], including the British Thoracic Society (BTS), American College of Chest Physicians (ACCP) and recommendations developed by an ad hoc working group of European Respiratory Society (ERS) under the direction of A. Morice. Basically, they recommend the following approach to the etiological diagnostics of cough. After the doctor has established the mere fact of cough, he collects in all patients detailed medical history and performs physical examination. In case of identifying the fact of influence of tobacco smoke and other irritants or receiving ACE inhibitors, it is recommended to eliminate them, taking into account long-term effects of these measures (up to 1 month for irritants, and up to 3 months for ACE inhibitors in accordance with the recommendations of ERS). It should also be remembered about the possibility of developing of chronic cough when taking nitrofurans or oily solutions for nasal instillations. As obligatory methods of patients' examination are recommended chest X-ray and study of respiratory function (spirometry with tests for reversibility of bronchial obstruction and monitoring of peak expiratory flow rate). If these methods allow to find an etiological cause of chronic cough, further treatment of patients is carried out according to clinical standards of management of such patients.

Experts point out that first of all it is necessary to analyze the data history, especially paying attention to the basic characteristics of cough (its beginning, severity, sputum production and character, presence of individual sound phenomena, circadian periodicity, presence of concomitant symptoms, effect of previous therapy, etc.). Results of physical examination, obligatory in this case X-ray and spirometry, contribute to the diagnosing. At that firstly should always be excluded so-called «specific cough». If there are not enough data for this, a provisional search diagnosis «non-specific chronic cough» is made, in which are possible two therapeutic and diagnostic solutions. Patient is advised to eliminate the effects of active and passive smoking and other irritants. If the patient suffers from cough to a small extent, an expectant management «watch, wait, and review» is possible for 2–3 weeks with a recommendation to stop all previous therapy, taking into account the ability of some drugs to provoke cough, to keep a «cough diary», fixing its frequency and intensity. In some cases during this period cough disappears spontaneously without treatment. In some patients during the detailed observation are revealed additional symptoms that may lead the doctor to a correct diagnosis.

If more severe cough disturbs normal daily activities of the patient, in accordance with the ERS in this clinical situation it is possible to use two strategies for diagnostic search. The first one is a strategy «test all, then treat» – use of all diagnostic range to reveal one or more causes of chronic cough and further targeted treatment of the patient. This approach, being more expensive, results in shorter term of therapy with positive results. Another strategy is an approach «treating sequentially» – sequential assignment of empirical therapy of the most common clinical entities underlying the non-specific chronic cough, which corresponds to the well-known principle of clinical medicine «*terapia ex juvantibus*».

In the recommendations of BTS and ACCP is stated that in children such empirical therapy is often not justified and should be used with some caution. Thus, the doctor should always seek to identify the most probable cause of the cough and to start relevant causal treatment of the patient, even if the patient has only “micro-symptoms”

To help the practicing physician, Respiratory Societies in particular ACCP, ERS and BTS have developed guidelines for the management of patients with cough [19, 28, 32, 38]. The most effective was the causal therapy of cough, suggesting the elimination of the causes of cough (withdrawal of drugs provoking cough, elimination of exposure to allergens, smoking) and/or the elimination of the pathological process that caused the cough (antibiotic treatment of pneumonia and other respiratory infections, therapy for gastroesophageal reflux disease, compensation of chronic heart failure). Treatment of cough as a syndrome is indicated only in those cases when it significantly affects health, state and quality of life of the patient. At that, it should always be started with the elimination of the cause of cough. Along with it can be carried out also symptomatic therapy of cough – antitussive, depressing and eliminating cough, or expectorant, providing its better efficiency.

Antitussive therapy is indicated in those cases, when coughing does not help to clear the airways (pertussis, oncopathology). It is possible to talk at that about specific antitussive therapy that has etiotropic and pathogenetic direction (e.g., smoking cessation, elimination of the causes of postnasal edema, reflux), and non-specific (symptomatic) that has a limited place due to a high probability to determine the cause of cough and to order targeted treatment. Expectorant therapy is indicated in those cases, when the cough fulfills a useful function and it needs to be stimulated (e.g., bronchiectasis, mucoviscidosis, etc.).

It is clear that success in treating patients with cough in many respects depends on the correctness and timeliness of diagnostics of the underlying disease and prescription of appropriate therapy. Here with it should be considered also the fact that when treating a patient with cough (especially chronic), even if the cause of its development is determined, in some cases the expected effect cannot be reached. At that, it should be remembered that the practicing physician is always experiencing some difficulties in the prescription of the drugs influencing the cough, especially considering that the majority of these drugs are potentially not safe for the patients, as evidenced by numerous published data [8, 10, 12, 31].

Among the possible drugs for causal and pathogenetic therapy of patients with acute and chronic cough should be noted fenspiride. Prospects for its use in the treatment of patients with cough are based on the fact that the drug has pronounced anti-inflammatory properties, acting primarily to the mucosa of the airways. Fenspiride acts through the metabolism of arachidonic acid with activity inhibition of phospholipase A₂, synthesis decrease of prostaglandins and leukotrienes. Furthermore, using of this drug suppresses histamine release from mast cells, decreases vascular permeability of airways induced by histamine, reduces leukocyte infiltration, decreases exudation and output of thromboxanes. Fenspiride provides protection against agents causing spasm

of bronchial smooth muscles, normalizes mucus secretion by bronchial glands, as well as positively effects on mucociliary transport, which is very important in the development and progression of cough in many patients. Due to these factors fenspiride controls the inflammation process in the airways. Furthermore, due to the effect on pro-inflammatory mediators, i.e. histamine, α_1 -adrenergic receptors and mechanisms of local regulation of the neuropeptides release, fenspiride inhibits inflammation both in the first (vascular) and in the subsequent (cell) phase. All this underlies in the anti-edema and hyposensitization action of the drug [22–24, 29, 39]. This successful combination of antispasmodic, anti-allergic and anti-inflammatory properties determines the indications for the use of fenspiride in acute and chronic diseases of the upper and lower airways (rhinopharyngitis, laryngitis, bronchitis, bronchiolitis, otitis, sinusitis, BA) in adults and children from the first months of life [18, 21, 30, 33]. Also important is the fact that fenspiride can be used in combination with bronchodilators, antibiotics of systemic and local action, and antifebrile drugs [34–36].

Efficacy and safety of fenspiride for the treatment of adults and children with a variety of acute and chronic respiratory diseases accompanied by a cough, are proved in a number of clinical studies of good quality. Let us discuss the results of several of them carried out in Russia and in Ukraine. Thus, in 35 cities in Russia with the participation of 1230 physicians was conducted a large-scale program of «Elf» [1, 4]. It was an open, controlled study on the improvement of the therapy of respiratory diseases in children. The choice of drug was conditioned by indications for its use: acute and chronic laryngotracheitis, acute rhinitis and sinusitis of infectious and allergic etiology, otitis, obstructive bronchitis, additional maintenance therapy for BA of mild to moderate severity. The purpose of this program was to evaluate the efficacy and safety of anti-inflammatory therapy by fenspiride in children with acute respiratory infections. As a result of screening of 8600 children in the program were included 5541 children aged from 3 months up to 14 years with acute respiratory infections (ARI) of mild to moderate severity with clinical presentation of rhinitis, pharyngitis, laryngitis, tracheitis, bronchitis, or a combination of them. 4328 patients received fenspiride: as monotherapy – 3977 children, in combination with an antibiotic – 351. The control group consisted of 1213 children who received necessary therapy appointed by the doctor from his viewpoint depending on their condition among the approved drugs (mucolytics, antibiotics, antipyretics, nasal sprays containing vasoconstrictor preparations). The duration of therapy was 7 days, in case of insufficient effect the therapy was prolonged up to 10 days. Fenspiride was prescribed in the amount of 4 mg/kg of body weight per day in a syrup.

Program «Elf» was carried out in the period of the biggest incidence of respiratory infections (autumn-winter). Efficacy was evaluated by comparison of objective and subjective symptoms before, during and after treatment (on the 3rd and 7th days of therapy, when treatment was prolonged – on the 10th day) by the doctor and the patient (or the patient's parents). During the program the majority of patients taking fenspiride showed excellent and good tolerability of the study drug according to both physicians' and patients' (or their

parents') estimates. By the 7th day the observation was stopped due to the recovery and significant improvement in 85,8 % of patients in the fenspiride group, and in 78,4 % – in the control group. Therapy was prolonged up to 10 days in the study group in 10 % of children, and in the control group – in 20 %. Symptoms of the disease (pain throat and throat irritation, hyperemia and edema of the oropharynx, nasal discharge, nasal congestion, cough, hoarseness, physical changes in the lungs) gone faster in children receiving fenspiride. Significantly faster it acted on such symptoms as cough, hyperemia and edema of the mucous membrane of the oropharynx, nasal congestion and discharge. Positive effect was observed in both dry cough associated with edema, bronchospasm, and in wet cough also associated with edema, bronchospasm, hypersecretion, increased sputum viscosity and impaired mucociliary transport.

Received during the open comparative randomized multicenter surveillance of leading Russian pulmonologists [15] results of the use of fenspiride in patients with chronic obstructive pulmonary disease (COPD) allowed the authors to draw the following conclusions.

1. Adding to the treatment regimen of patients with stable COPD stage II of anti-inflammatory therapy using fenspiride had certain advantages over monotherapy with bronchodilators.

2. When using fenspiride there was a decrease in severity of cough – the main symptom of COPD stage II, as well as reduction in need for the use of inhaled salbutamol.

3. Therapy with fenspiride in patients with COPD stage II allows to slow the progressive decline in forced expiratory volume in one second (FEV₁).

4. Under the influence of fenspiride is improved the quality of life of patients, and it is noted marked improvement of condition according to patients' and researchers' estimates.

5. Number of side effects, when fenspiride is added in a therapy scheme, is not increased as compared with standard therapy using bronchodilators.

6. Received results confirm the feasibility of the systematic use of fenspiride as a means of basic therapy of patients with stable COPD stage II.

The study of efficacy and safety of fenspiride use in patients with acute inflammatory respiratory diseases and COPD, accompanied by a cough, was also carried out in Ukraine. According to researchers [16, 17], fenspiride can be recommended for the use in treatment of acute inflammatory respiratory diseases (signs of inflammation of the upper airways, cough, bronchial hyperreactivity). The drug showed high efficiency (over 90 %), which presented in reduction of the symptoms of inflammation in the upper airways, pronounced decrease of cough and improvement of lung auscultation pattern, indicating the effectiveness of fenspiride in patients with bronchial hyperreactivity. Similar to Russian results were obtained during a multi-center (Kiev, Dnepropetrovsk, Donetsk) study of the effectiveness and safety of fenspiride in patients with COPD [16, 17]. According to the researchers, fenspiride using in the basic therapy of patients with COPD in three months significantly reduced the severity of clinical symptoms. Thus, severity of dyspnea and cough decreased by 1,4 and 1,7 respectively, more than by 2 times decreased

the amount of sputum and the frequency of use of «emergency» medications. On treatment with fenspiride significantly increased FEV₁ and decreased bronchial resistance (R_{tot}), as well as increased respiratory muscles strength, quality of life of patients (patients taking fenspiride significantly better tolerated physical activity). All this allows to recommend to include fenspiride in the scheme of basic therapy of patients with COPD.

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PROBLEMS OF COUGH IN GENERAL PRACTICE

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Abstract. The article analyzes the mechanisms and the most common causes of acute and chronic cough, modern approaches to the diagnosis and treatment of the relevant categories of patients. The difficulty in determining the causes of chronic cough in some patients is shown. The article also includes principals of international guidelines for the management of children and adults suffering from cough. The efficacy and safety of fenspiride in adults and children with various respiratory diseases accompanied by cough are given.

Key words: cough, mechanisms of development, diagnosis, treatment, fenspiride.

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ПРОБЛЕМА КАШЛЮ У ЗАГАЛЬНОТЕРАПЕВТИЧНІЙ ПРАКТИЦІ

A. П. Гришило

Резюме. В статті проаналізовано механізми розвитку та найбільш часті причини виникнення гострого і хронічного кашлю, а також сучасні підходи до діагностики і лікування відповідних категорій пацієнтів. Показано складнощі визначення причин розвитку хронічного кашлю у частини хворих. Наведено основні положення міжнародних узгоджувальних документів з ведення дорослих та дітей із кашлем. Показано ефективність і безпечність застосування фенспіриду в лікуванні дорослих і дітей з різними захворюваннями органів дихання, що супроводжуються кашлем.

Ключові слова: кашель, механізми розвитку, діагностика, лікування, фенспірид.

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