

MODERN METHODS OF TREATING PNEUMONIA AND OBSTRUCTIVE BRONCHITIS

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Annotation: This article presents the opinions of domestic and foreign scientists on modern methods of treating pneumonia and obstructive bronchitis. A variety of pharmacological and nonpharmacological techniques are now used to treat obstructive bronchitis and pneumonia, marking a considerable evolution in modern treatment strategies. The way that pneumonia and obstructive bronchitis are treated today has changed dramatically, incorporating preventative approaches, supportive care, and pharmaceutical developments.

Key words: antiviral treatments such as oseltamivir (Tamiflu), Pneumonia Treatment, Antibiotics, corticosteroids (e.g., dexamethasone), Bronchodilators, Obstructive Bronchitis Treatment, Shortacting betaagonists (SABAs), Longacting betaagonists (LABAs), Inhaled Corticosteroids (ICS).

Introduction.

Pharmaceutical therapies, supportive care, and occasionally more sophisticated procedures are all part of the modern approach to treating obstructive bronchitis and pneumonia, which has undergone significant evolution. An overview of the primary methods for each condition is provided below:

Treatment for Pneumonia

1. Antibiotics

Antibiotic treatment for bacterial pneumonia is usually started according to the most likely pathogens. Depending on the severity of the disease and the patient demographics, betalactams, fluoroquinolones, or macrolides are often used options.

2. Antiviral Drugs: Oseltamivir (Tamiflu) or remdesivir are examples of antiviral drugs that may be administered if pneumonia is brought on by a virus, such as influenza or COVID19.

3. Supportive Care: It's important to manage temperature, stay well hydrated, and administer oxygen treatment if necessary.

Hospitalisation may be necessary for patients with severe pneumonia in order to provide closer monitoring and further assistance, such as mechanical ventilation.

4. Corticosteroids: Corticosteroids, such as dexamethasone, may be used to control inflammation in specific situations, such as severe pneumonia brought on by COVID-19.

5. Bronchodilators: These medications can alleviate bronchospasm in people with underlying obstructive airway disease.

6. Vaccination: Pneumococcal pneumonia and influenza can be prevented by vaccination.

Treatment for Obstructive Bronchitis

1. Bronchodilators: To reduce airway blockage and enhance airflow, doctors frequently prescribe either short-acting or long-acting bronchodilators (such as beta2 agonists and anticholinergics).
2. Corticosteroids: Inhaled corticosteroids can help patients with chronic obstructive pulmonary disease (COPD) by reducing airway inflammation during chronic obstructive bronchitis.
3. Mucolytics: Drugs that thin mucus, including acetylcysteine or guaifenesin, can help eliminate secretions from the airways.
4. Antibiotics: Antibiotics may be necessary when bacterial infections cause exacerbations.
5. Pulmonary Rehabilitation: An organised program that includes exercise instruction, lung health education, and assistance to enhance exercise tolerance and quality of life.
6. Oxygen Therapy: Supplemental oxygen may assist individuals with low oxygen levels maintain appropriate oxygenation.
7. Lifestyle Changes: Patients with obstructive bronchitis must stop smoking and stay away from pollution and respiratory irritants.
8. Surgery: Surgical procedures like lung volume reduction surgery or lung transplantation may be taken into consideration in situations of severe bronchitis or COPD.

The goals of contemporary obstructive bronchitis treatment are symptom management, exacerbation avoidance, and lung function enhancement. In contrast to a single course of therapy, obstructive bronchitis is frequently a chronic illness that requires continuing maintenance. The goals of treatment plans are to reduce symptoms and enhance quality of life.

These methods form the basis of contemporary obstructive bronchitis treatment.

1. Bronchodilators: These drugs make breathing easier by relaxing the muscles that surround the airways. Typically, inhalers are used to administer them:

Shortacting betaagonists (SABAs): Offer prompt alleviation of symptoms such as dyspnoea and wheeze. Albuterol is a typical example. used as required.

Longacting betaagonists (LABAs): Offer relief that lasts for at least 12 hours. Examples are formoterol and salmeterol. used for maintenance twice a day.

Anticholinergics: Reduce airway muscle tension by inhibiting acetylcholine's effect. Examples are tiotropium bromide and ipratropium bromide. frequently combined with LABAs.

The second is inhaled corticosteroids (ICS), which lessen airway inflammation, a major contributing cause to obstructive bronchitis. They aid in preventing exacerbations but do not provide instant relief. Budesonide and fluticasone are two examples. widely used on a regular basis, sometimes in conjunction with LABAs.

3. Combination Inhalers: For convenience and better treatment compliance, several inhalers combine an ICS and a LABA into a single device.

4. Oral corticosteroids: Used to quickly decrease inflammation during exacerbations, or abrupt worsening of symptoms. Examples include methylprednisolone and prednisone. Use is often brief because of possible adverse consequences.

5. Mucolytics: These drugs make coughing up mucus easier by thinning and loosening it. One typical instance is guaifenesin.

6. Roflumilast is an example of a phosphodiesterase 4 inhibitor (PDE4 Inhibitor). For certain individuals, especially those with chronic bronchitis and frequent exacerbations, these oral drugs help lower inflammation and enhance lung function. In general, they are regarded as an adjunctive treatment.

7. Additional Treatments:

If blood oxygen levels are low during an exacerbation, oxygen therapy may be required.

A complete program that includes education, exercise training, and breathing strategies to enhance lung function and quality of life is known as pulmonary rehabilitation. For the treatment of chronic obstructive bronchitis, this is quite helpful.

Only when there is proof of a bacterial infection are antibiotics used during exacerbations. Since chronic bronchitis is largely an inflammatory disorder, they are not frequently utilised for it.

Smoking For anyone suffering from obstructive bronchitis, cessation is absolutely essential. The primary culprit, smoking, significantly exacerbates symptoms. Programs for support and cessation are crucial.

Selecting the appropriate course of action:

The symptoms, severity, and response to treatment of each patient determine the unique treatment approach for obstructive bronchitis. A respiratory expert or pulmonologist can evaluate the patient's requirements and provide a customised treatment plan. To track progress and make any therapy adjustments, follow-up sessions must be scheduled on a regular basis.

The kind of pneumonia (bacterial, viral, fungal, or aspiration pneumonia), its severity, and the patient's general health all play a significant role in the complex modern treatment of pneumonia. The goals of treatment are to control symptoms, get rid of the infection, and avoid consequences.

1. Determining the Reason: The first important step is to find out what caused the pneumonia. This frequently entails:

Chest X-ray: To determine the degree of infection and visualise lung inflammation.

Sputum culture: To determine the causing bacteria or other infections, a sample of mucus coughed up from the lungs is examined.

Blood tests: To determine the infection's severity and look for further issues.

2. Cause-based treatment:

Antibiotics are used to treat bacterial pneumonia, which is the most prevalent kind. The antibiotic selection is based on:

The organism under suspicion: Different antibiotics are needed for different microorganisms. Until culture results are available, empiric therapy—the first course of treatment based on suspected pathogens—is frequently employed.

trends of antibiotic resistance: The selection of antibiotics is influenced by local resistance trends.

Patient factors: The choice of antibiotic may be impacted by allergies, other illnesses, and liver or renal function. In extreme situations, antibiotics are often given intravenously (IV), while in less severe ones, they are taken orally.

Viral Pneumonia: Viruses cannot be defeated by antibiotics. Until the virus is eradicated by the immune system, supportive care is the mainstay of treatment. This might consist of:

Antivirals: Antiviral drugs may be helpful in some situations, especially when treating influenza or RSV pneumonia.

Care for Support (see below).

Antifungal drugs are used to treat fungal pneumonia. The particular fungus causing the infection will determine the best course of action.

Aspiration pneumonia: In the event of a bacterial infection, supportive care and antibiotics are the mainstays of treatment. Addressing the root source of infection is necessary.

3. Supportive Care: This covers the following and is essential for all forms of pneumonia:

The purpose of oxygen therapy is to raise blood oxygen levels. may be given by face mask, nasal cannula, or, in extreme situations, mechanical ventilation.

Fluids administered intravenously: To avoid dehydration.

Rest is necessary to enable the body to combat the illness.

Pain Relievers and Fever Reducers: Ibuprofen or paracetamol to treat fever and pain.

Because coughing aids in the removal of secretions, cough suppressants should be used with caution. In general, a productive cough should not be suppressed.

If bronchospasm is present, bronchodilators may be utilised to open airways.

Nutritional Support: Recovery requires a healthy diet.

4. Hospitalisation: In order to provide close monitoring, intravenous antibiotics, and sometimes mechanical ventilation (a breathing machine), severe pneumonia frequently necessitates hospitalisation.

5. Prevention: One important preventative strategy is vaccination. Vaccines against influenza and pneumococcal disease are very effective at lowering the risk of pneumonia.

Current developments in the management of pneumonia include:

Quick diagnostic tests: Make it possible to identify the causing pathogen more quickly, which enables more focused and expedited therapy.

Targeted therapies: More precise and efficient treatments are being developed as a result of growing knowledge of the processes behind viral and bacterial pathogenesis.

Better supportive treatment: Patients with severe pneumonia now have far better outcomes because to developments in critical care and respiratory support.

Conclusion.

The course of treatment for obstructive bronchitis and pneumonia is customised for each patient based on their general health, severity, and underlying cause. For best results, early diagnosis and prompt treatment are crucial. To avoid issues and make any required therapy adjustments, routine monitoring and follow-up are also crucial.

While certain tactics for treating obstructive bronchitis and pneumonia overlap, each illness requires a different strategy. Even though these conditions might occasionally coexist or exhibit similar symptoms, it's important to realise that they are separate illnesses.

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