**Diagnostic criteria**

**Ⅰ. CAP**

1. Acute infection of the pulmonary parenchyma acquired at community；
2. a: Cough with sputum production or change in color of respiratory secretions with or without chest discomfort, dyspnea or hemoptysis;

b: Fever;

c: Signs of lung consolidation and auscultatory findings such as altered breath sounds and/or localized rales;

d: WBC > 10×109/L or < 4×109/L;

1. An acute infiltration on a chest radio graph with or without pleural effusion;

If meet 1, 3 and any of 2, and exclude tuberculosis, lung abscess, interstitial lung disease et al, we could establish the diagnosis.1,2

**Ⅱ. HAP**

1. Patients with pneumonia that occurs 48 hours or more after admission and did not appear to be incubating at the time of admission;
2. Patient has a radiographic infiltrate that is new or progressive, along with clinical findings suggesting infection, which include the onset of fever, purulent sputum, leukocytosis, and decline in oxygenation.3

**Ⅲ. AECOPD**

Patients with COPD develop acute exacerbations of respiratory symptoms (dyspnoea, cough and/or sputum beyond day-to-day variability) and need to change drug therapy. Patients with Anthonisen Ⅰ and Anthonisen Ⅱ were enrolled in study.4,5

**Ⅳ. AEBX**

Patients with bronchiectasis develop acute exacerbations of respiratory symptoms (increasing sputum volume or purulence, worsening dyspnea, increased cough, declining lung function, increased fatigue/malaise) or the appearance of new symptoms (fever, pleurisy, haemoptysis, requirement for antibiotic treatment).6

**Ⅴ. CAP-ICH**

Patients with CAP meet following conditions should be considered immunocompromised, such as HIV infection, hematological cancer, chemotherapy during the last 3 months, biological drug use, lung transplantation, long term steroid use, lung cancer with either neutropenia or chemotherapy, other solid tumor with either neutropenia or chemotherapy.7

**Ⅵ. Lung abscess**

According to the history of oral surgery, disturbance states of consciousness, frequent vomiting, aspiration, fever with shivering, cough, and the significant increase in the total number of white blood cells and neutrophils, and chest radiography showing a lung cavity with an air-fluid level, and computed tomographic (CT) scans , 8,9the diagnosis can be made.

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