Mycoplasma Pneumonia associated with severe cold autoimmune hemolytic anemia

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Abstract

We report a case of cold autoimmune hemolytic anemia secondary to *Mycoplasma pneumoniae* in an 18 years old lactating mother presenting with respiratory symptoms and severe anemia. Her direct agglutination assay was strongly positive with marked IgG and C3d titre and cold agglutination test was high titre with anti I specificity. Mycoplasma antibody titre by complement fixation was 1280. She was treated with Azithromycin and Predisolone for pneumonia and packed red cells for anemia.

Keywords: Cold agglutination; Hemolytic anemia; *M. pneumoniae*

Introduction

Mycoplasma pneumonia is a well-recognized atypical pneumonia caused by *Mycoplasma pneumonia*, among middle aged school students[1]. Here we presented a case of cold autoimmune hemolytic anemia secondary to *Mycoplasma pneumoniae* in an 18 year old lactating mother and subsequently recovered with oral Azithromycin and Predisolone therapy.

Case Report

An 18 year old lactating mother presented with a one day history of fever, dry cough and shortness of breath followed by jaundice and dark colored urine. On examination, she was ill, febrile, dysponeic, pale, mild icteric and haemoglobinuria. Her pulse rate was 76 beats per minute, regular and blood pressure was 110/70 mmHg. Chest examination revealed bilateral few crepitations over lower zone of lungs with respiratory rate of 24/minute.

Her initial full blood count on admission revealed hemoglobin (Hb%) of 6.9g/dL, mean corpuscular volume (MCV) 81.3, mean corpuscular hemoglobin (MCH) 33.8, mean corpuscular hemoglobin concentration (MCHC) 41.6, leukocytosis (white cell count 17,000/mm^3) with predominant neutrophils (80%) and normal platelets. Her full blood count on next day of admission showed rapid hemolysis with Hb of 5.4g/dL, MCV 117, MCH 135, MCHC 114 and leukocytosis with predominant neutrophils and normal platelets. Total bilirubin was 52.4 micromol/L of which 43.8 micromol/L was indirect. The reticulocyte count was 7.2%. Lactate dehydrogenase (LDH) was 1398 U/L. The serum level of C-reactive protein was 64 mg/dL and the erythrocyte sedimentation rate was 150 mm in 1st hour. Other blood chemistry, liver profile, and coagulation studies were within normal limits. Blood, sputum and urine cultures were negative. The chest X-ray (PA view) showed left lower lobe interstitial infiltration. Direct Coombs' test was strongly positive and cold agglutinin titer was high, with anti-I specificity. Mycoplasma pneumoniae IgM antibody was positive. *M. pneumoniae* IgG antibody titres determined by immunofluorescence test were 1280. The ultra sound scan of abdomen revealed moderate hepatomegaly. The patient was diagnosed with severe hemolytic anemia complicating *M. pneumoniae* infection. She was treated with Azithromycin 500 mg daily and two packed red cell transfusion (10 ml/kg). Then the symptoms were rapidly resolved and Hb was increased to 11.4 g/dL. The antibiotic was continued for five days. The patient was discharged in good health after four days of hospital stay. At discharge, the thrombocyte count, blood biochemistry and coagulations studies were within normal limits.

Discussion

Mycoplasma pneumoniae is a well-recognized cause of respiratory tract infections.[1] It usually causes clinical pneumonia which is mainly benign among 3 to 10% of patients[2]. Twenty-five percent of the patients develop extrapulmonary manifestations including hematologic, dermatologic, neurologic, musculoskeletal, renal, cardiac, and gastrointestinal complications[3]. These manifestations may present before, during, after, or in the absence of pulmonary signs. Hemolytic anemia, thrombocytopenia, thrombotic thrombocytopenic purpura, and hemophagocytosis are the hematological complications associated with M. pneumonia[4].

Antibodies (IgM) against the I antigen on human erythrocyte membranes appear during the course of *M. pneumoniae* infection and produce a cold agglutinin response. A high cold agglutinin titres is frequently observed in *M. pneumoniae* infection and is reported among 50-60% of these patients[5]. Cold agglutinins is more specific for I antigen of the red blood cell surface, usually mediated by an IgM molecule and often result

in mild, subclinical hemolysis and mild reticulocytosis. However, Severe hemolytic anemia is usually rare and is commonly associated with marked pulmonary involvement[6]. Two days after pulmonary signs, our patient developed severe hemolysis, which required blood transfusion.

The organism is fastidious and difficult to grow in culture. Therefore, diagnosis of mycoplasma infection is usually confirmed with serological tests or polymerase chain reaction-gene amplification techniques. In our patient, the diagnosis of post *M. pneumoniae* pneumonia was based on the high antimycoplasma antibody titer (1:1280) and a positive direct Coomb's test in the presence of cold agglutinins.
The condition is usually self-limiting and most patients recover with supportive care. The use of antibiotics is limited value in mycoplasma associated hemolytic anemia. However, treatment of the underlying mycoplasma infection has been associated with more rapid resolution of the hemolytic process[7]. Hemolytic anemia associated with *M. pneumoniae* is usually self-limited and resolves spontaneously, but it may require transfusion support. The packed red blood cell transfusions can potentiate hemolysis, and their use should be limited. The risk of transfusion-related hemolysis could be reduced by using an in-line blood warmer at 37ºC and keeping the patient warm[7]. Corticosteroids are effective in inducing a remission in about 80% of patients in case of autoimmune hemolytic anemia[8]. Our patient was treated with Azithromycin, corticosteroids and was transfused two units of packed red cells.

Conclusions

We reported a case of *M. pneumoniae* infection presenting as severe hemolytic anemia. In this case, pulmonary symptoms and signs were restricted to mild nonproductive cough with minimal lung signs and interstitial infiltrates on chest radiography. In the presence of positive Coombs test, *M. pneumoniae* infection was suspected and diagnosis was subsequently confirmed by the detection of elevated antibody titres to *M. pneumoniae*.

Conflicts of interest- None declared

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