



A CASE OF AUTOIMMUNE HAEMOLYTIC ANEMIA IN A PATIENT OF SYSTEMIC LUPUS ERYTHEMATOSUS

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ABSTRACT

Background: SLE (Systemic lupus erythematosus) is an auto immune disease with multisystemic manifestations. The cell and organ undergo damage owing to tissue binding antibodies and immune complexes [1]. Ninety percent of patients are women of child-bearing age. Prevalence of SLE in India is estimated to be 14-60/1 lakh population and females are affected more frequently [2]. The diagnosis of SLE is done by new ACR (American college of Rheumatology) and EULAR (European League Against Rheumatism) criteria [3].

KEY WORDS : AST, ALT, ALP, Autoimmune haemolytic anemia

BACKGROUND

SLE also has hematological manifestations. The most common is anemia which is mostly normocytic normochromic anemia reflecting anemia of chronic disease. AIHA (Autoimmune haemolytic anemia) may manifest in SLE patients. Its incidence is less common and It may present at the time of diagnosis or within first year of disease. It may recur and can be associated with other comorbidities like lupus nephritis and auto immune thrombocytopenia [1].

Serum Anti-nuclear antibody (ANA) is considered an important diagnostic marker of SLE. However, 2-3% of patients with typical clinical picture of SLE may have persistently negative ANA tests [4]. AIHA in SLE is usually mediated by warm IgG antibodies. Rarely, it can also be mediated by IgM cold antibody [5].

HISTORY

A 30-year-old female presented with gradual onset generalised weakness which remained constant throughout the day and was not associated with fever, loss of appetite, loose motion, palpitation. She also complained of shortness of breath during exhaustion for 10 days. There was no history of chest pain, cough, orthopnoea, swelling of feet, altered sleep pattern, constipation, weight loss, intolerance to cold, amenorrhoea and menorrhagia. There was no history of dark coloured urination. She had a history of similar illness 6 months back for which she was hospitalised and had received 2 unit of blood transfusion and was then diagnosed provisionally with Iron deficiency anaemia. She was not a known case of sickle cell disease, diabetes mellitus, hypothyroidism. Her ANA (Anti-nuclear antibody) was within normal limit (0.7 IU and 0.9 IU) 6 months and 2 months ago respectively. Family history was insignificant.

EXAMINATION

On examination, there was pallor, icterus, non-scarring alopecia and discrete maculopapular rash over face. On oral examination there were ulcers over soft palate and angular stomatitis. Her blood pressure was 106/70 mm of Hg and pulse rate was 108 per minute. There was no cyanosis, clubbing, neck swelling, lymphadenopathy and organomegaly.

INVESTIGATION

Patient had a haemoglobin of 5.5 g/dl, total leucocyte count of $8.22 \times 10^3/\text{ul}$ and total platelet count of $406 \times 10^3/\text{ul}$. Haematocrit was 26%. ESR was 65 in first hour. Renal function tests revealed urea of 36 mg/dl and creatinine of 0.9 mg/dl. Serum bilirubin was 3.2 mg/dl

with indirect fraction 2.4 mg/dl. Serum lactate dehydrogenase was 765 U/L. AST, ALT and ALP was 80 U/L, 98 U/L and 90 U/L respectively. Test for HIV, hepatitis B and Hepatitis C were negative. Comment on peripheral smear revealed marked anisocytosis, poikilocytosis and presence of large number of spherocytes. Direct Coombs test was positive. Autoimmune workup revealed ANA titre of 11.8 U ($>1.2\text{U}$), ds-DNA was 59.25 IU/ml. Thyroid function test revealed TSH of -0.31 IU/ml with FT3 of 3.72 pg/ml.

So, the above findings are suggestive of hemolytic anaemia with positive direct coomb's test, positive ANA and raised dsDNA. The clinical and biochemical parameters contributed 14 points according to ACR criteria. With this, a diagnosis of SLE with autoimmune haemolytic anaemia was made. Patient was started with iv steroids and received one unit of packed blood cells. Then she was started high dose oral steroids (prednisolone-1mg/kg) which was tapered gradually. There was improvement in haematocrit levels and disappearance of icterus with decreasing bilirubin levels on subsequent monthly follow-up.



Figure 1: Showing oral ulcers involving soft palate and maculopapular rash .

DISCUSSION

Serum ANA is one of the important markers of SLE whereas ds-DNA titre contributes to specificity. ANA is positive in >95% of patients, usually at the onset of symptoms. A few patients develop ANA within 1 year of symptom onset. 2-3% of patients may have negative results. ANA negative results are usually associated with other antibodies (anti-Ro or anti-DNA). One of the proposed mechanisms for ANA-negative SLE was the use of low-sensitive mouse liver substrate in indirect immunofluorescence assay. Now a days, exclusive use of human epithelial (Hep-2) substrate has increased the sensitivity of diagnosis [6]. Thus, in an appropriate setting, where

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clinical suspicion for the disease remains high despite a negative screening ANA, it may be reasonable to proceed with repeated ANA testing and additional specific antibody testing including anti ds-DNA, anti-Sm, anti-Ro and anti-RNP [4]. In our patient ANA was negative even if patient had transfusion dependent anemia and her peripheral smear was also suggestive of microcytic picture of anemia of chronic disease. After a span of 6 months, she had positive ANA titre along with severe anemia with signs of hemolysis like jaundice and high serum lactate dehydrogenase.

Autoimmune hemolytic anemia in SLE can be both extravascular or intravascular. Opsonisation by complements and activation of macrophages causes extravascular hemolysis in spleen, whereas formation of membrane attack complex by classical complement pathway can cause intravascular lysis of red blood cell [7][8]. In our case absence of splenomegaly may suggest intravascular haemolysis but additional investigations like serum haptoglobin are required to confirm [9].

Most patient respond to high dose steroids with gradual dose tapering. In refractory cases (10%), rituximab can be used as a second line agent [10].

CONCLUSION

Autoimmune hemolytic anemia is one of the manifestations of SLE and can even be life threatening. Serial testing of ANA along with other autoimmune antibodies and a complete hematological profile can help us to reach to a diagnosis for early initiation of treatment.

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