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# Hydralazine-Induced Lupus Syndrome Presenting with Different Symptoms and Signs in a Female with an 18-Year History of End Stage Renal Disease

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## Abstract

**Background:** Nearly 40 drugs induced lupus erythematosus. Hydralazine is one of these drugs. Stopping them to treat the disease is essential.

**Case report:** We describe a 24-year-old single lady, nursing student with an 18-year history of end stage renal disease that had symptoms including fever, severe headache, dyspnea, orthopnea and pleuritic chest pain with positive anti-nuclear antibody (ANA) and anti-double stranded DNA (Anti-dsDNA) with hydralazine treatment. We stopped the hydralazine treatment and patient was started on prednisone with well outcomes.

**Conclusion:** The doctors should pay attention to who are placed on treatment with hydralazine a long time to reduce the risk of drug-induced SLE.

**Keywords:** Hydralazine-induced lupus syndrome; Different symptoms and signs; End stage renal disease

## Introduction

In 1951 hydralazine was used into routine drug for treatment of hypertension [1]. In 1952, it was reported a number of patient cured with hydralazine that have features similar to systemic lupus erythematosus [2]. The hydralazine-induced lupus syndrome has symptoms including arthritis, arthralgia, myalgia, pleural effusion, fever, fatigue, hepatosplenomegaly, pericarditis, rash, glomerulonephritis and neuropsychiatric [3]. We introduce a patient using hydralazine and has different symptoms and signs.

## Case Report

A 24-year-old single lady, nursing student with an 18-year history of end stage renal disease was referred to university hospital. At first visit in April 2016, the patient had symptoms including fever, tachycardia, loss of consciousness, disorientation, transient aphasia and severe headache so she

was admitted to the neurology section. According to symptoms, different diagnostics such as herpes encephalitis and hypoxia encephalitis recognized and all of them were rule out. The hypertension treated with hydralazine 100 mg three times daily for years. Physical exam showed a pulse of 100 beats/min, temperature of 38°C, blood pressure of 128/70 mmHg, and respiratory rate of 16 per minute. Laboratory tests including complete blood count, complement test including C3, C4, CH50, lupus anti-coagulant, thyroid function test, C-reactive protein (CRP), rheumatoid factor (RF) were in normal limits but anti-nuclear antibody (ANA), anti-double stranded DNA (Anti-dsDNA) and erythrocyte sedimentation rate (ESR) were higher than normal limits. CH50 was lower than normal limits. Urine and cerebral spinal fluid analysis were normal. Polymerase chain reactive for the diagnosis of herpes simplex virus was negative. Electrolytes including Na and k were in normal limits, but Ca was lower than normal limits. The magnetic resonance imaging was normal. The electroencephalography is seen generalized slowing of the background which could be due to an encephalopathy state. The echocardiography reported an ejection fraction 50 percent.

The second visit in university hospital, the patient had symptoms including dyspnea and orthopnea and she was admitted to the internal section. Breathing sounds were not normal. Crackle sound was heard at the base of the lungs. The patient had a jugular venous distention and pitting edema. Volume overload was diagnosed because of end stage renal disease. The patient was discharged after a short time. She was re-admitted June 2016, because of headache, frequent seizure and loss of consciousness. Soon after admission she went in to coma. Blood pressure was 180/90. Pulse rate was 84 per minute. Laboratory studies during this admission showed a complete blood count in normal limit. A computerized tomography (CT) scan of abdominal and pelvic reported pleural effusion, pericardial effusion and abdominal ascites. furosemide, hydralazine, labetalol, captopril, clonidine, spironolactone and methyl dopa were used to control blood pressure. phenytoin and diazepam were used to control seizure. Antibiotics including ceftriaxone, meropenem and vancomycin were used. After use these drugs, the patient was well, and she was discharged. During the last week of July 2016, the patient was complained because of dyspnea,

pleuritic chest pain and general edema and high blood pressure. There for, she was admitted. The patient was under daily dialysis. According to symptoms, the tamponade was diagnosed, and the patient underwent open heart surgery. she was discharge after several days. According to a medical history that was taken from the patient again a diagnosis of hydralazine-induced lupus erythematosus was established, and patient was started on high-dose prednisone after stopping hydralazine. the patient was well after receiving prednisone.

## Discussion

40 drugs currently in use have symptoms similar to systemic lupus erythematosus. Hydralazine is one of these drugs [4]. The hydralazine-induced lupus commonly has symptoms including arthralgia, myalgia, malaise, fever and weight loss [5]. Risk factors preparing for hydralazine-induced lupus are including over dose (150 vs. 76 g), white race [1], female sex, slow acetylation, human leukocyte antigen (HLA)DR4, long-term treatment above three months [5]. Serologically hydralazine-induced lupus is associated with ANA, anti-histone antibodies, Anti-dsDNA, anti-lactoferrin antibodies, Anti neutrophil cytoplasmic antibodies (ANCA). The patient's medical history that receives hydralazine with symptoms including butterfly rash, malaise, arthralgia, autoimmune pancytopenia bedside positive ANCA, ANA, anti-lactoferrin antibodies, even without anti-histone antibodies is diagnosis for hydralazine-induced lupus syndrome [6]. Stop of hydralazine use is necessary for treatment of disease. Two

important drugs including corticosteroids and immunosuppressive therapies are useful in life-threatening cases of hydralazine-induced lupus syndrome [1]. we introduced a case of end stage renal disease that used hydralazine and had different symptoms and signs.

## Conclusion

The doctors should alert and pay attention to who are placed on treatment with hydralazine a long time to reduce the risk of drug-induced SLE. All patients should be evaluated for rheumatology problems as part of their follow up.

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