

# Thought Broadcasting, Cognitive Impairment, Depression and Odd Social Behavior in a Diagnosed Case of Systemic Lupus Erythematosus (SLE) with Autoimmune Hepatitis of 12 Years Old Boy in Bangladesh

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**Abstract:** *Systemic Lupus Erythematosus (SLE) with Autoimmune Hepatitis challenging in both physical and mental aspect of health. When an adolescent is diagnosed as a patient of Systemic Lupus Erythematosus (SLE) and another autoimmune disease such as Autoimmune Hepatitis is included with it, then complications related to SLE are getting more priority to exclude. Like other complications psychiatric complications are more common nowadays. But more studies are required to find many psychiatric complications in a chronic and autoimmune disease. SLE with Autoimmune Hepatitis has presented with cognitive impairment, depression, anxiety and psychosis are more common. In this case a 12 year old boy has diagnosed as a case of SLE with Autoimmune Hepatitis and presented with many psychiatric complications. Pediatric SLE with Autoimmune Hepatitis, in a male child with psychiatric complications is not common. Here the boy has presented with thought broadcasting and also with other psychiatric complications such as cognitive impairment, poverty of thought, depression and odd social behavior.*

## 1. Background

According to journal of Annals of Indian Academy of Neurology, an article named Neuropsychiatric manifestations of Systemic Lupus Erythematosus (Iranian experience) shows, out of 407 patients of SLE, 11.3% had neuropsychiatric complications. The most frequent findings were seizure (63%), headache (60%), and decreased level of consciousness (50%), cerebrovascular disease (28.3%), seizure disorder (26.5%) and acute confusional state (19.6%).

According to Journal, Indian Academy of Clinical Medicine an article named Primary psychiatric presentation in Systemic Lupus Erythematosus shows, Neuropsychiatric manifestations in the course of Systemic Lupus Erythematosus (SLE) occur in about 60% of cases. However, primary neuropsychiatric presentation is seen in 20% and psychiatric presentation alone in only 10% of patients.

Systemic Lupus Erythematosus (SLE) is characterized by frequent neuropsychiatric involvement, which includes cognitive impairment. Anti-phospholipids, disease activity, and chronic damage are associated with cognitive dysfunctions in SLE.

## 2. Introduction

Systemic Lupus Erythematosus (SLE) and Autoimmune Hepatitis are autoimmune diseases. These diseases are chronic diseases and closely related to changes in mental state causing loss of reality testing, impairment of insight and distortion of personality. SLE is a chronic autoimmune disease characterized by multisystem inflammation and the

presence of circulating autoantibodies directed against self-antigens. Chronic disease presents both physical and emotional challenges for affected children and adolescents. Compared with adults, children and adolescents with SLE have more severe disease and more widespread organ involvement. The most common presenting complaints of children with SLE include fever, fatigue, hematologic abnormalities, arthralgia, and arthritis. Common psychiatric complications include cognitive impairment occurs in 80% cases (journal of clinical psychiatry'2012), depression occurs in 39% cases (journal of clinical psychiatry'2012), anxiety disorder in 24% cases (journal of clinical psychiatry'2012), psychosis (delusion, hallucination, thought disorder, mania, hypomania), obsessive compulsive disorder. But in case of children neuro-cognitive dysfunction has been shown to occur in 30–60% of children with SLE and psychosis, behavioral symptoms are relatively less common in this age group. Autoimmune Hepatitis is an immune-mediated process in which patients can be asymptomatic or have fatigue, malaise, behavioral changes and anorexia.

## 3. Case Presentation

A 12 years old boy, student of class 6, right handed person, Muslim, son of belated parents, with good intelligence level, with normal age appropriate developmental milestone, belongs from lower middle-class, socio-economic status and hailing from semi-urban area of Dhaka city was admitted in pediatric rheumatology department of Bangabandhu Sheikh Mujib Medical University has presented with the complaints of fever for seven months, low mood for 6 months, pain and swelling of multiple joints for 2 months, abnormal behavior and yellow discoloration of skin and sclera for 1.5 months. According to the statement of the informant and patient that he was relatively well 7 months back then he develops occasional fever associated with oral ulceration. Then

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gradually he develops low mood, lack of interest and pleasure almost all the time in a day for last 6 months associated with sleep disturbance which includes delayed onset of sleep, fragmentation of sleep and terminal insomnia. His appetite increases that he is eating more food at home and taking other patient's food to eat in hospital during his stay in hospital but no proof of weight gain. His academic performance becomes poor due to lack of attention and concentration. He has feeling of worthlessness but no suicidal ideation. He shows some abnormal behavior that he wears party dresses at midnight; he goes to relative's house at unusual time. He does not want to stay alone. He also complains of pain in multiple joints. At first, pain starts in both knee joints then it spreads on other small joints. Then rash appears on face, palm, sole and other areas of the body. Then he develops yellow discoloration of skin and sclera. Moreover he shows aggressive behavior towards family members that he shouts inappropriately and snatching food from other's plate during eating. He shows stubborn behavior and compelling other family members to fulfill his demand. Then his families members visit to hospital consult a doctor and do some investigations. Investigation reports show Hb% is 7.1g/dl, ESR is 82mm in 1<sup>st</sup> hour, WBC is 8,000per cubic mm, 2.2million per cubic mm, platelet is 5lac per cubic mm, MCV is 100.4fl, RDW-CV is 24.1%, RDW-SD is 78.4fl. Peripheral blood film shows anisochromia, anisocytosis and round macrocytosis. Total cholesterol is 350mg/dl, serum creatinine is 2.13mg/dl, ALT is 171U/L. Urine has 4-6/HPF of pus cell, 3-5/HPF of epithelial cell. Anti-ds DNA is positive, ASMA is strongly positive, IgG is raised, C3 and C4 are reduced. USG shows bilateral renal parenchymal disease, bilateral pleural effusion and mildascities, suggestive of cystitis. HBsAg, Anti HAV IgM, Anti HEV IgM are negative.

He is the 2nd issue of non-consanguineous parents and his mother died at his 6 months of age, father died at his 11 years of age due to cardiac arrest. He was grown up to her grandmother. His grandmother becomes paralyzed 2 months back due to stroke. He has no history of mental illness in his family. After the onset of disease he becomes less sociable to peers, teachers and relatives. His academic performance deteriorates. He does not play with friends and sits alone. In his premorbid personality he is sociable, smiling to friends, peers, teachers, family and others; he is hopeful; loves to read story books and watching television.

General examination and systemic examination was revealed that he is anemic, icteric and not cyanosed, temperature was 100 degree Fahrenheit, no lymphadenopathy but splenomegaly and hepatomegaly was present.

Mental State Examination (MSE) was revealed that a 12 years old boy was sitting on the bed with slow posture, slow pace, gaze downward, well dressed, well kempt, well combed, rapport was established but not maintained due to his long pause between every words, social behavior and motor behavior was normal, mood was depressed and affect was congruent. There was presence of poverty of thought, thought broadcasting but no perceptual abnormalities. Attention was not sustained and there was lack of concentration. There was problem in reasoning, problem solving, abstract thinking and executive skills such as

planning, organizing, sequencing information. Immediate and recent memory was impaired but remote memory was intact. Judgment and insight were intact.

#### **4. Discussion**

In SLE with neuropsychiatric manifestation such as depression may present with slowing of thinking and cognitive impairment. But the disease itself can produce cognitive impairment, thought disorder, psychosis. In this case a diagnosed case of SLE with Autoimmune Hepatitis has presented with thought broadcasting, poverty of thought, cognitive impairment and depression with some odd behavior.

Depression may present with suicidal ideation in SLE, but chronic fatigability and anxiety symptoms are common.

Inhibition of thought or poverty of thought or slowing of thinking can defined that the train of thought is slowed down and the number of ideas and mental images that present themselves is decreased. The patient complained that his thoughts are no longer private but are accessible to others. This is known as thought broadcasting or thought diffusion (also a first-rank symptom of schizophrenia).

The few available data concerning patterns of cognitive impairment in pediatric SLE suggest issues with complex problem solving, working memory, verbal memory attention and visuomotor integration. The significant diversity in cognitive problems identified in SLE likely reflects the heterogeneous underlying pathophysiology of NPSLE.

#### **5. Conclusion**

It is a challenge for an adolescent to have SLE with Autoimmune Hepatitis with complications. Like other complication, psychiatric complications are very common. Disease itself is producing these abnormalities of thought, perception, and cognition. It causes major depressive disorder, persistent depressive disorder. In this case thought abnormalities are observed. So, thought broadcasting is most prominent in this patient. Like other SLE with Autoimmune Hepatitis patient he has presented cognitive impairment, depression and odd social behavior such as snatching other's food.

#### **6. Abbreviation**

SLE: Systemic Lupus Erythematosus

#### **Declarations**

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