

## A Case Report of a Late-Onset Systemic Lupus Erythematosus Like- Induced by Carbamazepine Therapy

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**Summary:**

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A case of systemic lupus erythematosus like induced by carbamazepine therapy in a 27 year old female patient with left sided trigeminal neuralgia had been recorded, 9 years from starting carbamazepine therapy. The patient condition improved clinically 3 days after withdrawal of carbamazepine , the titer of antinuclear antibodies dropped from 1/640 to 1/80 after 3 weeks, and disappear completely after 6 months follow up.

**Introduction:**

Lupus-like symptoms of muscle and joint pain, fever and occasionally pleuritis and pericarditis develop sometimes as a side effect of long term medication with 40 drugs currently in use (1). In all cases drugs that induce lupus also induce autoantibodies in a much higher frequency (2).

By far the highest risk drugs are procainamide and hydralazine (2). Quinidine can be considered moderate risk while sulfasalazine, penicillamine , chlorpromazine , methyldopa, carbamazepine, acebutalol , isoniazid, captopril, propylthiouracil lamotrigine , amiodarone and minocycline are relatively low risk (2-5). The remaining 27 drugs should be considered very low risk based on the paucity of case reports in the literatures. I report a case of carbamazepine induced lupus erythematosus in a 27 year old female patient with left sided trigeminal neuralgia, after 9 years of carbamazepine therapy.

**Case:**

A 27 year old female patient, a known case of left sided III –division trigeminal neuralgia. She was on carbamazepine (CBZ) therapy in a daily dose of 400mg in two divided doses. After 9 years of CBZ therapy , she presented with severe arthralgia and fever , admitted to hospital., laboratory test revealed an elevated erythrocyte sedimentation rate, with positive (1/640) fluorescent antinuclear antibody ( ANA ) , positive antihistone (1/640), leukopenia (3.300/mm<sup>3</sup>) and the patient CBZ serum level was 10.1 µg/ml. No abnormal findings were shown in the chest x-ray film or the electrocardiogram. A diagnosis of drug- induced lupus erythematosus(LE) was made ,CBZ therapy stopped. Symptoms rapidly improved after 3 days and the titer of ANA dropped from 1/640 to 1/80 after 3 weeks and disappear completely by 6 months of follow-up.

**Discussion:**

Carbamazepine induced LE is not very frequent among drug- induced SLE. Degiovgio et al (6) estimated the minimum prevalence of CBZ- induced SLE to be 2-3/100.000 patients administered CBZ. This is a report of a late onset CBZ- induced SLE. The characteristic features of CBZ-induced SLE are summarized as follows: dominant in young females, Symptoms mainly of fever, rash, arthralgia and leukopenia without involvement of kidney or central nervous system, prompt improvement after cessation of CBZ with or without prednisone administration (7). Guidelines for the diagnosis of drug-induced SLE presented by Hess (8) are as follow:

- a.No history suggestive of SLE before initiation of drug therapy.
- b.At least one clinical manifestation of SLE plus positive serologic Findings.
- c.Disappearance of both clinical and serologic findings when the Drug is discontinued.

Eleven cases of CBZ-induced SLE have been described in the lite ratures since Simpson (9) who described the first case in 1966 of these only few reported a late onset CBZ induced SLE. Schmidt et al (10) reported SLE induced by CBZ after 15 months from starting therapy. Toepfer et al (11) described a case of SLE induced by CBZ after 8 years of therapy. Amerio et al (12) described a similar case after 5 years of CBZ therapy and lastly Pelizza et al (13) reported a similar case after 7 years of CBZ therapy. Current theories propose that SLE develops when genetically predisposed individuals are exposed to certain environmental agents, commonly a drug or more commonly a reactive metabolite of the drug (1). These agents inhibit T-cell DNA methylation, increase lymphocyte function associated antigen 1 (LFA-1) (CD11a/CD18) expression and adoptive transfer of T-cell that made autoreactive by this mechanism causes a lupus like disease (2). The mechanism by which these cells cause autoimmunity is unknown.

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The present patient showed clinical improvement within 3 days of CBZ withdrawal. The titer of DNA dropped from 1/640 to 1/80 after 3 weeks and totally disappeared by 6 months of follow-up.

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