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Renal Impairment as a Possible Side Effect of Gabapentin

A Single Case Report

Key Words
Gabapentin
Mania
Bipolar disorder
Side effects
Renal
Creatinine

Abstract
A bipolar I manic patient was treated successfully by adding gabapentin to perazine and clonazepam. Also initially tolerated well, an increase of creatinine after several weeks of GP (2000 mg) was observed which was reversible after discontinuation of GP. It is suggested that the possibility of renal dysfunction should be kept in mind with the usage of gabapentin.

Introduction

Gabapentin may be a valuable addition in treating bipolar disorder [1]. Generally, it appears that gabapentin (GP) exhibits a very good safety profile. Although rare, milder side effects described with the use of GP in epileptic patients include somnolence, fatigue, ataxia, dizziness and gastrointestinal upset [2, 3]. However, interference of gabapentin with renal function has not been observed yet.

Case History

This 27-year-old inpatient was admitted with a severe manic syndrome (initial BRMAS score 38) [4]. He was previously diagnosed as bipolar I disorder according to DSM IV, having had 5 manic episodes since age 20, with no full remission in between. Treatment was always complicated as he showed allergic reactions or severe side effects to the following: lithium (severe acne), carbamazepine (Lyell syndrome), carbamazepine in combination with clozapine (liver failure with coma, haemolytic anaemia and pancreatitis), haloperidol (increased liver transaminases, severe extrapyramidal side effects), and, earlier during this episode, lamotrigine (increase of bilirubin, liver transaminases and creatinine kinase). Gabapentin was initialised and rapidly dosed up to 2,000 mg. Concomitantly, he received clonazepam and perazine. The treatment response, followed up with BRMAS ratings for 3 weeks, was satisfactory (see table on following page).

Laboratory controls after 1 week of GP showed normal values, including retention parameters (creatinine 0.96 mg/dl). After being 6 weeks on GP, creatine showed a rise to 1.38 mg/dl, but it was decided to continue on the drug regimen with frequent controls. After being relatively stabilised on a treatment regimen with GP 2,000 mg/day, clonazepam 3.5 mg/day and perazine 450 mg/day, he was transferred to a day clinic at a local state hospital. Side effects observed at that time were sedation and slight ataxia which was then contributed to clonazepam and perazine. Admission laboratory controls at the state hospital showed a creatinine of 1.3 mg/dl with otherwise normal parameters after being now for 10 weeks on this regimen. Comedication remained unchanged except for a dose reduction of clonazepam to 2.5 mg/day. Within 9 days (= 12 weeks of GP) creatinine rose to 1.7 mg/dl without any subjective complaints of the patient, obvious signs of urinary infection and inconspicuous sonogram of the kidneys. Gabapentin was discontinued, and serum creatinine declined to 1.3 mg/dl within 1 week without any further treatments. With the discontinuation of GP, sedation and ataxia improved significantly, too. As gabapentin is not metabolized even in severe kidney disease [5], those side effects may have been retrospectively due to GP accumulation; unfortunately, GP plasma levels were not measured at that time.

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Comedication before GP	GP mg/day	Comedication after 3 weeks of GP	BRMAS				
			day 0	day 3	day 7	day 14	day 21
Clonazepam 4 mg, perazine 600 mg	2,000	Clonazepam 3.5 mg, perazine 450 mg	38	38	25	14	14

Conclusion

To our knowledge, renal functional impairment has not been described yet as a likely delayed side effect of gabapentin. It has to be said, however, that this special patient has already shown allergies or complicating side effects to lithium, carbamazepine, clozapine, haloperidol and lamotrigine pointing towards a high vulnerability for allergic reactions.

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