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Acetazolamide in the Treatment of Acute Mania

A Case Report

Key Words

Acetazolamide

Mania

Carbonic anhydrase inhibitor

Abstract

Several antiepileptic drugs are also being used in affective disorders. There are some hints that also the carbonic anhydrase inhibitor acetazolamide might be useful in the treatment of bipolar affective disorder. We report a 39-year-old male patient with a history of bipolar affective disorder who presented with his second manic episode. Acetazolamide was added to a low dose of valproic acid and to perazine. A marked decrease of the BRMAS score was achieved. The implications of this case are discussed.

Several antiepileptic drugs (AED) are also being used in affective disorders, either in the treatment of acute mania or in the long-term prophylaxis of bipolar disorders. There are some hints that also acetazolamide (AZA) might be useful in the treatment of bipolar affective disorder [1].

AZA is a carbonic anhydrase inhibitor that is in use as an AED since the 1950s [2]. Its anticonvulsant effect correlates with the degree of inhibition of brain carbonic anhydrase. It probably acts by the increase of carbon dioxide in the brain but also as a GABAergic agent itself. As the antiepileptic properties show tolerance after several weeks of treatment, AZA is mainly used as an adjunctive drug during periods of acute seizure exacerbation or for the prevention of catamenial seizures. It is usually well tolerated although lethargy, paresthesias, rashes, abdominal distention and cyanosis may appear [3]. Severe adverse effects might be cardiac disturbances due to loss of electrolytes caused by polyuria.

We report a 39-year-old male patient with a history of bipolar affective disorder with a depressive episode with psychotic symptoms at the age of 34 years and a manic episode with psychotic symptoms at 38 years. This

episode had been treated successfully with valproic acid (VPA) and lithium. The patient had discontinued drug treatment 2 or 3 months later due to intolerable weight gain. He came to our hospital after manic symptomatology had exacerbated 1 week ago. His main complaints were agitation, sleep disturbances, concentration disturbances, accelerated thinking and irritation. There were no psychotic symptoms this time.

Three days before he came under our charge he had been started on VPA 600 mg and perazine 400 mg. As he was reluctant to take an increased dose of VPA, we added AZA, starting with 250 mg and gradually increasing to 1,000 mg/day. The doses of VPA and perazine were kept unchanged. At treatment onset he had a score of 19 on the BRMAS, gradually decreasing to 8 on day 17. The medication was well tolerated with only transient nausea, mild sedation and polyuria. Serum levels were 17.6 µg/ml on day 2 for VPA and 250 ng/ml for perazine.

In summary, we report a patient with a manic episode due to bipolar affective disorder who had a good response to add-on therapy with AZA. Mainly two issues have to be discussed: The patient was also on VPA which is widely regarded as an antimanic agent. Efficacy in antimanic

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treatment, however, is not expected at the serum level of 17.6 µg/ml [4]. Potentiation of the efficacy of other AED is discussed as one mechanism of action of AZA. So, the combination of AZA and VPA may have been successful in this case. The other medication in this patient was perazine. Perazine as a neuroleptic agent of medium potency is not seen as a powerful antimanic agent. So we do not regard its contribution to be very high. Nevertheless, there are still questions concerning the efficacy of AZA in this case. Like the responders in the study of Hayes [1] our patient had responded well to another AED-VPA during a previous episode. Unlike their responders he

was not in a depressive but in a manic episode of a bipolar affective disorder. As this is only a single case, further studies on the efficacy and safety of AZA in acute mania should be done. Other carboanhydrase inhibitors like sul-tiam are in use as AED. To our knowledge there are no experiences with this drug in bipolar affective disorders.

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