Psychopharmacological Treatment of Disruptive Mood Dysregulation Disorder in children with Neuropsychiatric Disorders

Sheik Hosenbocus MD, FRCPC
Department of Psychiatry, University of British Columbia, British Columbia, Canada

Abstract:

Background: Children with neuropsychiatric disorders including autism, fetal alcohol syndrome, attention deficit hyperactivity disorders (Combined) and intellectual disabilities, often exhibit severe mood and behavior dysregulation that often escalate to out-of-control explosive outbursts including aggressive behaviors and damage to property. They present an ongoing challenge to clinical management as behavior therapies are mostly ineffectual leading to heavy reliance on psychopharmacology. Drugs that work on the dopamine, norepinephrine and serotonin neurotransmitter systems are considered the modulators of the frontal subcortical loops involved in the pathogenesis of such disorders. These have been the targets of most drugs used to treat those disorders especially the atypical antipsychotics. There have been serious concerns over the increasing use of the atypical antipsychotic medication risperidone for this condition. This has led to the search for another neurotransmitter system namely the amino acid system with Glutamate as the target neurotransmitter. Drugs that modulate glutamine neurotransmitter namely NMDA (N methyl D aspartate receptor antagonist) have been a new pharmacological target. One such drug that stands out as being an effective alternative with minimal side effects is amantadine. This presentation reviews the available evidence on the effectiveness of this drug in the above conditions including the result of an open label study of its effectiveness.

Research aim: This study aimed to find a safe and effective alternative to commonly use antipsychotics for the treatment of disruptive aggressive and dysregulated behaviors in children with Neurobehavioral Disorders.

Methodology: Data were collected through a literature search accessing several data bases followed by a systemic review of pertinent literature targetting relevant studies related to mood dysregulations and aggressive behaviors in neuropsychiatric disorders in children, as well as the pharmocology and use of amantadine. This was followed by an open label trial in 60 children 6-13 years ofage, first as monotherapy on Amantadine and also as augmentation in combination with risperidone. The Modified Overt Aggression Scale (MOAS) was used pre and post treatment to assess the effectiveness of the treatment.

Finding: Amantadine showed a large positive effect on the MOAS ratings, pre versus post treatment, indicating a good potential as a safe alternative agent for monotherapy or as an augmenting agent for treating children on the autism spectrum or other neuro behavioral disorders with severe emotional, behavioral and explosive aggressive behaviors. Augmentation of risperidone with amantadine led to the use of a much lower dose of risperidone with less side effects but comparable effectiveness. Parents satisfaction was also rated as high.

Theoretical importance: This study contributes to the ongoing search for safer alternatives to current medications for the management of severe behavior disorders in children with neuro behavioral disorders. Amantadine's ability to stabilize the Glutamate Neurotransmitter System demonstrates its potential as a safer and effective medication and also highlights the association between a possible glutamate neurotransmitter dysfunction and behavior dysregulation in children with neuropsychiatric disorders.

Data collection and analysis procedures: The collected data were analyzed using statistical methods appropriate for the steady design. The pre and post treatment MOAS ratings were analysed and compared to evaluate the effect of amantadine on aggressive behaviors. Other relevant data from the literature review was synthethised to provide a comprehensive overview of the evidence.

Conclusion: Tthe study concludes that that amantadine holds aignificant potential as a safe and effective alternative to commonly use antipsychotics for the treatment of disruptive, aggressive and dysregulated behaviors in children with autism and neuropsychiatric disorders, with a very favourable profile of side effects. The findings suggest that amantadine can be used as monotherapy or as an augmenting agent to effectively manage severe emotional and behavioral disorders in children. Furthermore the high level of parents satisfaction indicates the practical value of this treatment approach.