Helping Children Hospitalized for Rages

July 10, 2009 | ADHD [1], Bipolar Disorder [2], Schizophrenia [3], Comorbidity In Psychiatry [4], Attention Deficit Disorders [5], Mania [6], Addiction [7], Alcohol Abuse [8]
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Rages are part of a syndrome of severe mood dysregulation, which is defined by markedly increased and frequent reactivity to negative emotional stimuli.

Temper outbursts, sometimes called rages, are a major reason for outpatient and inpatient referral. These behaviors have also been a focus of assessment in child psychology and psychiatry since rating scales were developed. In fact, items consistently loading on the same factors in frequently used behavior rating scales for children reflect negative mood (mood changes quickly/explosive, easily angered/stubborn, sullen, irritable), oppositionality (being demanding, uncooperative and disobedient) and aggression (argumentativeness, having temper tantrums).1

Rages have been associated with extreme irritability or mania, Tourette disorder, intermittent explosive disorder and conduct disorder, autism/Asperger disorder, and other conditions.2-6 Rages are part of a syndrome of severe mood dysregulation, which is defined by markedly increased and frequent reactivity to negative emotional stimuli (eg, response to frustration with extended temper tantrums, verbal rage, and/or aggression toward persons or property) that occurs at least 3 times a week in the context of chronic anger or sadness.7 This co-occurs with other symptoms, such as those related to attention-deficit/hyperactivity disorder (ADHD) or anxiety (ie, hyperarousal, distractibility, rapid speech/racing thoughts, insomnia).

Case Vignette

Jordan, 8 years old, has been referred for psychiatric evaluation because of his restless, distractible, impulsive, unpredictable, oppositional, and defiant behavior. He has difficulty in following directions; sometimes he refuses to do a task, other times he doesn’t seem to understand what is needed. His frequent frustration often results in prolonged outbursts at home. In school, he has to be removed from class because his behavior becomes dangerous. When he is restrained by his parents or a classroom aide, he becomes even more agitated, and rages violently.

The term “rage” implies that these outbursts consist solely of high-intensity anger, but we actually
know little about their content or structure. It has been suggested that outburst content and/or structure might vary with psychiatric conditions, such as oppositional defiant disorder, depression, and mania.²

Our team at Stony Brook has studied rages by direct observation (rather than parent interview), measuring the duration of outbursts, the kinds of behaviors that occur in them, and their diagnostic specificity.⁸ We examined rages in inpatients at a pediatric psychiatric service, which cares for children aged 4 through 12 years—rage outbursts precipitated admission in over half the children. The median length of stay of about a month gave us ample opportunity to observe behavior. Because of our long-standing interest in bipolar disorder and because rages have become synonymous with bipolar disorder, we were interested in whether these rages reflect a manic rapid cycle and/or occur disproportionately in children with mania.²

**Behavior during rages**

To understand rages better, we collected diagnostic and observational data for more than 18 months. The study involved 130 children aged 9.7 ± 2.1 years (one-fifth female), for 151 hospitalizations.⁹ Examining first admissions, we found that 71 (54.6%) were admitted for rages, but only 37 (52.1%) had an outburst of rage while hospitalized. (Seven other children also had rages but had been hospitalized for different reasons.) Of the 44 children with rages observed in the hospital, 23 had just 1 episode; the remaining 21 had 2 to 9 outbursts. No significant gender differences were found. Half of the children with serious dysregulation at home or in school were able to maintain self-control on a structured inpatient unit that had clear expectations, positive support, and a less stressful environment than at home or in school.

A rage was defined as having started when the child became loudly verbally defiant and out of control when asked to do or stop doing something by the staff. The outburst was observed at 5, 15, 30, 45, 60, 90, and 120 minutes after onset by the nursing staff. Behaviors coded during each rage included verbal acts (whining, verbal threats, cursing, yelling, screaming), discrete physical acts (stamping, pushing, pulling, throwing things, biting, scratching, punching the wall, hitting, kicking), and expressive psychomotor behaviors (tearful/sad, anxious/fearful, withdrawn/unresponsive). Notably, manic symptoms were never seen.

During more than 18 months of data collection, 117 outbursts were recorded for 49 patients. Of the coded behaviors observed, angry behaviors (eg, yelling, screaming, cursing, violent threats, stamping, kicking, hitting, throwing objects) were the most common and occurred in 93% of the episodes; tearful/sad or anxious/fearful behaviors occurred in fewer than half (46%) the rages. An episode of rage generally lasted over 45 minutes, but length varied widely, with 19% of outbursts lasting less than 30 minutes and 19% lasting longer than 60 minutes.

Rage outbursts usually occurred early in the course of hospitalization. For instance, 44% of children with outbursts had their first/only episode within 2 days of admission. The remainder occurred 2 days after admission through discharge. Half of the children had an episode of rage immediately after admission; then, after “testing the waters,” they quickly desisted.
In addition to the question of whether outburst content and/or structure might vary depending on psychiatric conditions, we were mindful of frequent parental comments to the effect that their rage-prone child had “never outgrown the terrible twos.” This raised the hypothesis that rages might resemble childhood temper tantrums. A set of factor analyses of coded behaviors identified 5 groups: 3 were interpretable as progressive levels of anger intensity, 2 others as levels of distress (ie, sadness/anxiety). This model of outburst organization accounted for 54% of total variance. An independent cluster analysis of behavior slope revealed that anger behaviors peaked early and declined relatively rapidly; distress behaviors were more evenly distributed. Thus, rages closely resembled the observed tantrums of typically developing preschoolers with respect to behavior types and time course (early peaking anger, more evenly distributed distress). However, in terms of severity and duration, they were similar to parent-reported tantrums of preschoolers with depression and disruptive behavior disorders whose rages lasted more than 20 minutes. Inpatient rages lasted at least twice as long as temper tantrums of typically developing preschoolers, and because the patients were bigger, they were more destructive.

**Diagnostic considerations**

In determining how children with observed rage outbursts during hospitalization differed from their hospitalized peers, we found that younger children were marginally more likely to have rages (r = −0.155). Their IQ, history of abuse, and living status (with or without a parent) had no significant effect. Best-estimate diagnoses encompassing parental and school history, child mental status, and hospital course were made after discharge. Considering single psychiatric diagnoses, children with outbursts were almost 5 times more likely to have a best-estimate diagnosis of ADHD than children without rages. They were over 5 times more likely to have a learning or language disorder but 3 times less likely to have an anxiety disorder. However, children with rages were almost 3 times more likely than those without rages to have 3 or more concurrent diagnoses. The most common combination was ADHD, oppositional defiant disorder, and learning/language disorder. This was seen in 70% of children who had rages compared with 34% of those who did not. The association between language disorder and outbursts is consistent with the more general connection between language and behavior; however, it is almost never studied in research based solely on structured interviews.

Given the current interest in rages as a symptom of mania and severe mood dysregulation, we examined the frequency of those conditions based on referral information and subsequent best-estimate diagnoses for all hospitalizations (N = 151) because a child might have been admitted...
for mania on 1 admission but not another. In fact, hospitalized children with rages had been referred with a diagnosis of mania more often than those without rages (34.7% vs 15.7%, odds ratio [OR], 2.8; confidence interval [CI], 1.3, 6.3). However, of the 33 admissions where a referral diagnosis of mania had been given, mania was observed and confirmed in only 5 children. Of 44 children with rages, we observed only 9% with mania or manic symptoms (ie, bipolar not otherwise specified), compared with 4.7% of 86 children without mania, and always comorbid with other disorders. Mania, as defined by DSM-IV, did not account for most children whose rages occurred while hospitalized, nor were their outbursts examples of rapid cycles.

We also tried to determine how many children might have met criteria for severe mood dysregulation. Two-thirds of children with rages (65.9%) were defined as having this condition based on behavior at home, compared with only one-quarter of children without rages in the hospital (25.6%) (OR, 5.6; CI, 2.55, 12.39). Once hospitalized, 1 child had rage episodes 3 times a week. He was given a diagnosis of childhood-onset schizophrenia.

**Treatment**

The evidence-based treatment algorithm for ADHD and aggression consists of medication and behavior modification. If there is treatment resistance, an atypical antipsychotic is added, and then lithium or divalproex. While treatment makes some positive impact, the reality is that complete remission is rare in children with ADHD who have outbursts of rage. For example, in the Multimodal Treatment of ADHD study, rigorous treatment with stimulant medications with or without behavior modification significantly improved behavior in children with comorbid ADHD and in children with the Child Behavior Checklist bipolar phenotype (T scores greater than 67 on the ADHD, aggression, anxiety/depression scales). At the end of 14 months, however, these children were still considerably more impaired than those with uncomplicated ADHD.

Another study of outpatient children with ADHD in a summer treatment program revealed that the combination of stimulant medications and rigorous behavior modification reduced symptoms on the Young Mania Rating Scale (YMRS) from 23.7 ± 3.5 to 15.4 ± 6.1. Aggression and irritability were shown to be decreased by almost 45% with treatment; ADHD symptoms improved as well, but to a lesser extent. The data specifically address comorbidity and suggest that the combination of ADHD and irritability/mood symptoms improves with treatment but does not completely remit with strategies directed at ADHD alone. Four “manic” symptoms (elevated mood, sexual interest, sleep disorder, and thought disorder) decreased from mild to even less impairing. There is no evidence that children with severe mood dysregulation respond to lithium alone.

In our sample, children with rages had had a range of treatments as outpatients, including ADHD medications, atypical antipsychotics, and mood stabilizers. In addition, 88% of children with rage outbursts had been in special education, and almost half had been hospitalized previously. The number of rages correlated positively with length of stay in the hospital (r = 0.32; P < .001): rage episodes added at least 2 weeks to the duration of hospitalization (median, 36 days for children with rages compared with 22 days for children without). Most children improved with a combination of behavior modification, family treatment, appropriate academic intervention, and medication. Our inpatient behavior-modification approach focuses on teaching children self-control and helps parents learn suitable responses to their child’s behavior. Hospitalized children who behave appropriately earn points toward fun activities and increased time for home visits. It is especially important for children with a history of rages to learn to take a Time Out. By sitting quietly in a chair for 10 minutes and then talking with a therapist or staff member, the child learns to identify the triggers that lead to a rage outburst and alternative behaviors for mitigating an episode of rage. Many children respond favorably to the unit structure and Time Outs from the time of admission. Staff members who observe children starting to lose control will also teach them to “chill out” before a full-blown raging episode occurs. This technique places self-control in the child’s hands.

Children who are unable to take a Time Out are escorted to the quiet room where the door remains open (as long as they stay in the room and don’t try to hurt themselves). A nurse unobtrusively observes until the child has remained quiet for 10 minutes and can subsequently talk about alternatives. This option has cut the use of closed seclusion and physical restraint dramatically. Some children simply cannot calm themselves down and require immediate medication intervention over and above whatever medication they are taking. An oral alternative (eg, liquid risperidone or a rapidly dissolving oral atypical antipsychotic) is offered first. When oral medication is unsuccessful, an injection of diphenhydramine is used.

A few children become so unreachable when they are angry or distressed that no corrective
intervention has been successful. Alternative strategies (such as collaborative problem solving) may be an option, but most have not been studied systematically.\textsuperscript{23} This group of children is the most difficult to manage and requires the longest duration of hospitalization. Some children may require out-of-home placement, depending on psychosocial circumstances.

**Parental involvement**

To maintain the gains made by children, work with parents begins immediately on admission. To ensure cooperation and reduce defensiveness, the therapist helps parents understand that while they didn’t create the child’s problems, these problems nevertheless require a particular approach. For parents who feel sorry for the child and think any form of consequence is unfair, the social learning paradigm (which underlies behavior modification) is reframed so that behavior that causes failure has a negative consequence and behavior that ensures success earns a positive consequence.\textsuperscript{21} Most parents want their children to succeed. Parents are taught how to use the Time Out procedure when the child is not following directions, or when he or she exhibits verbal or physical aggression.\textsuperscript{21} In optimum circumstances, parents learn this procedure and are able to get their child to take a successful Time Out before the child has a pass for a home visit and certainly before discharge. Like children themselves, parents have different learning curves in understanding and responding consistently and appropriately to their children. Time on therapeutic passes provides plenty of opportunity for parents to practice skills with the option of bringing the child back from home pass if the child is unable to take successful Time Outs. This step is vital to support the parents’ effort to gain the child’s cooperation. A confident, reasonable, and well-trained parent helps the child after discharge. Some children need a readmission before they understand that coercing caregivers into capitulating is not an option. Discharge planning included smaller, special education class placements (for 75%); 90% of children with rages received an ADHD medication and/or an atypical antipsychotic/mood stabilizer and were 4 times more likely to receive both than children without rages.

**Conclusion**

Rage behaviors may represent a disease modifier (such as psychosis) that complicates a number of disorders. A precise and accurate diagnostic label is needed to be able to undertake further studies. To date, successful treatment has required a combination of psychopharmacology and nonmedical interventions. Although most children stopped having rages once hospitalized, or perhaps had only 1 episode, children who had continued outbursts remained difficult to treat. Conceptualizing children with rages as having mania or bipolar disorder was not consistent with our observations. Few hospitalized children were observed in an episode of mania; however, we did see children with severe language-processing problems.

Multidisciplinary treatment was partially successful for most children, but children continued to need many services and polypharmacy. Successful parenting was necessary but rarely sufficient in and of itself to manage children with rage behaviors. Some children required readmission and a very small percentage needed residential placement after discharge. For a condition that is as common and disabling to children as rage outbursts, a more consistently successful series of options is sorely needed.

**References:** Drugs Mentioned in This Article

- Diphenhydramine HCl (Benadryl, others)
- Divalproex (Epival, Depakote)
- Lithium (Eskalith, Lithane, Lithobid)
- Risperidone (Risperdal)


Evidence-Based References


Links:
[1] [http://www.psychiatrictimes.com/adhd](http://www.psychiatrictimes.com/adhd)
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