

# Cyclic Behaviors in Persons With Developmental Disabilities: Are Cluster and Migraine Headaches Being Overlooked?

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Headaches are among the most common reasons for physician visits in the general population. Migraines affected approximately ten percent of the US population in 1999. Migraines and cluster headaches often occur intermittently and can cause cyclic behaviors, including self-injury. Yet, in the DD literature, headaches were virtually ignored over the past twenty years. The lack of interest among DD clinicians in headaches contrasts with the great interest in another disorder with a cyclic course - bipolar disorder. The following will be reviewed in this article: similarities between chronic headaches and bipolar disorder; the rationale for distinguishing between chronic headaches and bipolar disorder; and clues towards distinguishing between bipolar disorder and chronic headaches in person with DD.

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Physical aggression (PA) and self-injurious behavior (SIB) are cyclic in some persons with developmental disabilities (DD). While PA or SIB may be caused by environmental or psychosocial reasons, illness is also a potential etiology. Illnesses that chronically occur and have cyclic patterns are especially intriguing. The classic illness with a cyclic pattern is bipolar disorder. Other illnesses also can have a cyclic course. Headaches are among the most common illnesses with cyclic patterns. Among headache categories, migraines and cluster headaches are the ones most associated with a cyclic course. Headaches are among the top ten causes for physician visits.<sup>13</sup> Migraines affected 28 million Americans in 1999.<sup>8</sup> Cluster headaches not only have a cyclic pattern, but also can involve SIB such as pressing on the eyeball, striking the face or banging the head against the wall to provide distraction from the severe head pain.<sup>6,13</sup> It is, therefore, surprising that headaches have been neglected as a potential cause for cyclic PA and SIB. From 1980 to 1998, no article focused on headaches in persons with DD.<sup>12</sup>

Since the 1980's, bipolar has been associated with PA and SIB. The common treatments for bipolar disorder proved helpful for some instances of PA and SIB.<sup>9</sup> Interestingly, some of the treatments for bipolar disorder can also be helpful

for certain forms of headaches. The paper will review: a) similarities between chronic headaches and bipolar disorder, b) the rationale for distinguishing between chronic headaches and bipolar disorder, and c) strategies for diagnosing headaches in persons with DD. The authors acknowledge broadly using the concept of headache. Some comparisons will be between migraines and bipolar. Others are made between cluster headaches and bipolar. The switching between migraine and cluster headaches may be somewhat confusing at first, but the overall purpose of the article is to stimulate discussion on why it may be important to screen for headache in persons with DD, especially in those individuals who cannot communicate that they are experiencing pain.

## SIMILARITIES BETWEEN CHRONIC HEADACHES AND BIPOLAR DISORDER

Table 1 lists the similarities between chronic headaches and bipolar disorder. It is commonly accepted that bipolar disorder is familial. Twin and adoption studies offer compelling evidence of a genetic link for bipolar disorder.<sup>1</sup> Migraine headaches also are familial. Initially, cluster headaches were thought to lack a familial predilection.<sup>2</sup> A recent Italian study, however, found nearly a forty-fold increased risk of cluster

**TABLE 1. FEATURES THAT CAN BE FOUND IN BOTH HEADACHES  
AND BIPOLAR DISORDER**

- Increased familial prevalence
- Episodes can last for weeks
- Illness course can change from episodic to chronic
- Altered mood
- Psychomotor agitation
- SIB can occur
- Altered appetite
- Can cause poor sleep
- Increased risk of suicide
- Associated cognitive decline during episodes
- Medications that may provide prophylaxis include: lithium and valproic acid

headaches among first-degree relatives compared to the general population.<sup>7</sup>

Although headaches are commonly thought to last minutes to hours, certain headaches, such as cluster headaches, can occur daily for several weeks at a time.<sup>16</sup> Bipolar episodes commonly last weeks to months. In some types of bipolar disorder (e.g., ultra-rapid cycling), however, irritability can last for only a few hours. Most headaches last just a few hours.

Mood disorders can change from episodic to a more chronic course. Similarly, cluster headaches can evolve from an episodic to a chronic course with brief periods of remissions.<sup>19</sup> Usually, a person must suffer with cluster headaches for several years before the course becomes chronic. Interestingly, head injury as well as cigarette smoking, may convert an episodic pattern into chronic cluster headaches.<sup>19</sup> Neither a history of head injury nor cigarette smoking are rare for persons with DD.

Mood alterations are so fundamental to bipolar disorder that without a significant change from the usual mood, a diagnosis of manic-depression immediately becomes suspect. Mood changes are not part of the diagnostic criteria for cluster or migraine headaches. Nevertheless irritability can accompany either headache. Moreover, prior to an actual migraine, some individuals have extreme mood changes. They can be withdrawn or euphoric.<sup>4</sup> Some individuals with migraines notice surges of energy, an unusual sense of well-being or increased talkativeness the day before a migraine attack.<sup>4</sup>

Psychomotor agitation is a criterion for a manic episode.<sup>1</sup> Pacing is a behavioral equivalent for psychomotor agitation.<sup>18</sup> Pacing can also be a

significant part of a cluster headache attack.<sup>6</sup> The pain of a cluster headache can also be so severe that the sufferer tries anything including pacing, head banging or pressing their eyeballs. The potential for self-injury is seen in both cluster headache and bipolar (e.g., mixed states).

A core criterion of the depressive part of a mixed bipolar picture is significant appetite/weight changes. While appetite disturbances are usually not sustained in migraines, pre-headache symptoms occurring 12-36 hours before the actual migraine can include extreme hunger or anorexia.<sup>4</sup> Furthermore, in some sensitive individuals, skipping meals can provoke a migraine attack.

Sleep problems are classic features of bipolar disorder. During mania, one can go days or longer with a reduced need for sleep. Dalessio<sup>3</sup> notes that cluster headaches can occur during sleep, often within an hour of falling asleep. One can imagine how disrupted the sleep pattern would be for a person with DD and profound MR who suffers with nocturnal cluster headaches during a several week cycle.

The risk of suicide in persons with bipolar is well known. Up to 15% of persons with Bipolar I disorder die from suicide.<sup>1</sup> Less recognized is that the pain in a cluster headache can also be so severe that there is an increased risk for suicide.<sup>20</sup> The risk can occur from a conscious attempt to end one's life because the pain attacks are so disabling. Alternatively, one could overdose by taking more of the prescribed analgesics and sedatives while attempting to achieve immediate pain relief.

Thinking clearly is more difficult in a manic episode. A person becomes more distractible.

**TABLE 2. RATIONALE FOR DISTINGUISHING BETWEEN BIPOLAR DISORDER AND MIGRAINE OR CLUSTER HEADACHES IN PERSONS WITH DD**

- Search for prodromal features has greater significance in migraine (and possibly cluster) headaches than in bipolar disorder
- Response to acute interventions are quite different
- During prophylaxis phase, some interventions for migraine or cluster headaches may worsen bipolar disorder

Decision-making can be impulsive. Concentration is harder. Similarly, during the episode of a migraine or cluster headache, cognitive functioning declines. Furthermore, these temporary declines were detectable with bedside screens, such as the Mini-Mental State Exam and Cognitive Capacity Screening Examination.<sup>11</sup>

Another striking similarity between bipolar disorder and migraine or cluster headaches is that lithium and valproic acid may be prophylactic for both illnesses.<sup>4,5</sup>

#### **RATIONALE FOR DISTINGUISHING BETWEEN CHRONIC HEADACHES AND BIPOLAR DISORDER**

If lithium or valproic acid can help bipolar disorder as well as chronic headaches, why is it important to distinguish between the two? Table 2 lists three rationales for distinguishing between bipolar and chronic headaches. First, some headaches have auras. Auras are predictable visual, sensory, or motor phenomena that generally precede a migraine by less than an hour and does not last for more than an hour. Auras occur in about 33% of individuals with migraines.<sup>17</sup> Examples include: zigzag lines, stars or flashes, holes in one's vision, numbness, temporarily impaired speech, or temporary limb weakness. Though most clinicians believe that clusters do not have auras, premonitory symptoms occurring days before cluster headaches have been reported.<sup>14</sup> Detection of the aura can lead to acute treatment before the full impact of the migraine attacks.

Ideally, proper treatment of an evolving headache can provide quick relief. There is no comparable treatment for bipolar disorder that can so rapidly restore previous functioning. Recent reviews provide comprehensive treatment options for the acute treatment of either migraine or cluster.<sup>3,4,6,20</sup> Acute migraine treatment can be divided into over-the-counter headache remedies,

oral prescriptive drugs, suppositories, nasal sprays, and injections. The current treatment of choice for moderate to severe migraine is a selective 5-HT<sub>1</sub> receptor agonist (triptans). Triptans can be delivered orally, nasally, or subcutaneously. Triptans can also relieve acute cluster headaches. Another effective option is 100% oxygen by mask. In still other cases, some clinicians advocate up to a ten day course of steroids to treat episodic bouts. Steroid use, however, can precipitate manic-like episodes.<sup>1</sup>

Some prophylactic treatments for migraine headaches can either worsen bipolar disorder or cause considerable side effects. Heterocyclic antidepressants can precipitate mania. Beta-blockers can worsen mood disorder. Other potential treatments for refractory chronic cluster headaches include gamma knife surgery and invasive nerve blocks.<sup>10</sup> Some surgical procedures require putting a hole in the skull, so one would want to ensure that the distinction between refractory cluster headaches and bipolar was indeed accurate.

#### **COMMON CLINICAL PRACTICE**

Commonly, identification of episodic headaches in persons with DD is difficult due to the inability of most patients to adequately articulate their headache symptoms and history of attempts to manage headaches. For example, Mr. A is in his 60's. He has a history of mild MR and cyclic sleeplessness along with PA lasting for a few nights. He reported suffering from frequent headaches, although the old record does not include what he took for headaches. Nor is it mentioned if there was any relationship between sleeplessness and headaches. He was treated with lithium and seems to be stable. One could argue that if cycle length is four nights, then it is probably most likely in the rapid-cycling variant. Rapid cyclers tend to respond less well to lithium. One wonders if the lithium was actually useful as

**TABLE 3. DISTINGUISHING BETWEEN BIPOLAR AND MIGRAINE OR CLUSTER HEADACHES IN PERSONS WITH DD**

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| <ul style="list-style-type: none"> <li>• Family history</li> <li>• History of recurrent cyclic vomiting</li> <li>• Prodromal signs</li> <li>• Extreme sensitivity to noise or light accompanied by nausea or vomiting</li> <li>• Exacerbation by physical activity</li> <li>• History of motion sickness</li> <li>• Behavioral disturbance happening at nearly the same time over several weeks</li> <li>• Tears and nasal congestion primarily from one side of face accompanied by an inability to obtain relief from lying in bed</li> </ul> |
|---|

prophylaxis for chronic headaches. Obviously, this is pure speculation and without more clinical information, any firm conclusions would be tenuous. While Mr. A's case shows that it may be sometimes better to be lucky than accurate, Mr. B is a different situation.

Mr. B is in 30's. He has profound MR and a long history of agitated, aggressive behaviors, crying spells, and SIB. He was referred because of property destruction, agitation and aggressive behaviors towards staff and peers. His sleep was disturbed. Staff felt that he had frequent headaches, and he received acetaminophen. Previous treatments included thioridazine, lithium and valproic acid, including the latter two together. No treatment, nor combination of treatments, was successful. The headache hypothesis as a primary cause for his SIB was never comprehensively pursued. In retrospect, non-response to acetaminophen does not rule out cluster headaches (or migraines). What else could determine if he suffered from chronic headaches?

#### **DISTINGUISHING BETWEEN BIPOLAR DISORDER AND CLUSTER OR MIGRAINE HEADACHES IN PERSONS WITH DD**

Table 3 lists several clues that may raise the possibility of chronic headaches, though none absolutely clinch the diagnosis. While it is routine to ask about a family history of psychiatric or substance abuse, it is less common to ask if first-degree relatives suffer from migraines or cluster headaches. A first-degree relative with migraines (and probably clusters) may cause a clinician to view the history differently. Although cyclic vomiting in a person with DD who has responded to lithium is suggestive of bipolar disorder,<sup>15</sup> recurrent episodic vomiting may be a sign of

chronic migraine. As in Mr. A's case, if the person responds to lithium, it is probably only of academic interest whether the accurate diagnosis is bipolar or migraine (or cluster headaches). If lithium (or valproic acid) become intolerable, then an accurate diagnosis will guide the next choice. Furthermore, if the person with cyclic vomiting actually has migraines, proper treatment can bring relief in hours, instead of days to weeks.

A careful functional or contextual analysis can detect clues of migraine or cluster headaches. Clues to a migraine include extreme sensitivity to noise or light during an attack, especially if physical exertion exacerbates the behavior. Cluster headaches may be discovered if the behavioral disturbance occurs at the same time, (especially at night) over a several week period. Other helpful historical features of cluster headaches would be unilateral tears and nasal stuffiness accompanied by an inability to obtain relief from lying in bed. Finally, a history of motion sickness is more common in sufferers of clusters.

#### **CONCLUSION**

Clinicians often consult about PA or SIB in persons with DD. When a cyclic pattern is found, accompanied by sleep disturbance, mood irritability and psychomotor agitation, it is often reasonable to tentatively diagnose bipolar disorder. Yet episodic headaches can share several of these features with bipolar disorder. In the general population, episodic headaches are a more common sign of cyclic distress than bipolar disorder. The DD field has ignored headaches as a potential cause for almost 20 years. DSM-IV, however, does not even include migraines or clusters in the differential of bipolar disorder,

because there should be little diagnostic confusion. While the diagnosis may be clear in persons who can complain of headaches, in persons with severe or profound MR, such as Mr. B, the distinction is much more murky. Adding to the confusion, some treatments can help both chronic headaches and bipolar prophylactically. The main reason to clearly differentiate is that acute relief (in hours) exists for chronic headaches, and certain prophylactic treatments for chronic migraines or clusters can worsen mood disorders. Hopefully, it will not be another 20 years before more clinicians publish articles about chronic headaches and cyclic PA and SIB or other cyclic behaviors in persons with DD.

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