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Mini Review Open Access

Recognizing Depression, Anxiety, and Externalizing Behaviors in Children of a Parent with Mood Disorders: Weekly Symptom Monitoring in the Child Network

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Mini Review

High levels of depression, anxiety and externalizing disorders are common in the general population of children in the USA. These disorders are further dramatically increased in the offspring of a parent with bipolar disorder followed up prospectively for 7 years [1] or in the offspring of a parent with unipolar depression followed up for 20 years [2], yet few receive early or adequate treatment. This is particularly problematic as early onset mood disorders have a more difficult course and outcome than adult onset illness, and are associated with long delays to first treatment, which is an additional independent risk factor for a poor outcome [3]. One way to attempt to change this lack of awareness and treatment is to use parental ratings as a way of assisting physicians and other clinicians in the recognition of problematic and continuing symptoms.

We have started a Child Network as one way to begin to address these problems. The informed consent is available at *www.bipolarnews.org* (click on Child Network). In the Child Network, parents of children (aged 2-12) with mood or behavioral problems can rate their child on a weekly basis on the severity of 1) depression, 2) anxiety, 3) ADHD, 4) oppositional behavior, and 5) mania on a secure web site under a Johns Hopkins IRB-approved protocol. Ratings can then be printed out longitudinally, which will facilitate assessment of symptom course, need for treatment or referral, and response to any psychotherapeutic or pharmacological treatment.

We believe such an approach is needed for a multitude of reasons.

1) The problems of childhood illness in the USA are vastly underestimated and appreciated. In a recent study by Axelson et al. [1] the offspring of a parent with bipolar disorder had a major psychiatric diagnosis 74.2% of the time, while the offspring of the USA community controls still had a disturbingly high incidence of illness of 48.4%. The lifetime diagnosis rates in the high risk children included: an anxiety disorder (39.9%); major depressive disorder (32.0%); ADHD (30.7%); disruptive behavioral disorder (27.4%); substance use disorders (19.9%); and full to sub-threshold bipolar disorder (22.5%). In Weissman's [2] study of the offspring of a parent with unipolar had a major psychiatric diagnosis 83% of the time, while the offspring of the controls again had a considerable incidence of illness of 56% [2].

These data are also supported by data in epidemiological studies in the USA.

For example, in the National Comorbidity Study [4] adolescents (aged 13 to 18) 49.5% had a major psychiatric diagnosis, and, similarly, 49.2% were diagnosed in the Great Smokey Mountains study [5].

2) Some types of childhood psychiatric illness may be more prevalent in the USA than in many other countries. Data from our international network indicate that patients with bipolar illness from the USA have an earlier age of onset of bipolar disorder and a more pernicious course of illness than those from the Netherlands and Germany [6]. The findings of more childhood onset of bipolar disorder in the USA compared to Europe have been replicated by Bellivier et al. [7] and Etain et al. [8]. The increased incidence of childhood onset bipolar disorder in the USA is likely related to two vulnerability factors - an increased genetic/familial risk and greater amounts of psychosocial adversity in childhood [6]. The problems in the USA are also multigenerational. Compared to those from Europe, relatives of patients with bipolar disorder in the USA have more psychiatric illness, including depression, bipolar disorder, suicide attempts, alcohol abuse, substance abuse, and "other" illness. This higher incidence extends backward 2 generations to the patient's parents and grandparent, sideways to their siblings and spouses, and forward 1 generation to their offspring. In our study without prospective evaluation or follow up, 43.6% of the offspring from the USA had a major disorder, while only 16.1% in those from Europe [9-11]. The degree of familial loading for illness was related to the increases in illness rates in the offspring.

Other types of evidence also support the view of a greater incidence of childhood onset bipolar disorder. Epidemiological studies that included sub threshold manic symptoms (BP-NOS) in the assessments also showed higher incidences of childhood mood disorder in the USA compared to non-USA studies [12]. High risk studies of offspring of a bipolar parent carried out in the USA consistently show more childhood onset bipolar disorder than those conducted in Europe or Canada [6].

Thus, the findings based upon several different methods of ascertainment are striking and suggest that as many as ¾ of children of a parent with a mood disorder and ½ of those in the general community in the USA will have a major psychiatric diagnosis upon long term follow-up. The other diagnoses, besides bipolar disorder, reported in the offspring in the high risk studies are also associated with considerable short and long term morbidity.

Yet in the Weissman's study [2] only a minority of those with any diagnosis was in any kind of treatment. In an epidemiological study, children with a bipolar disorder diagnosis were treated with any medications 18% of the time, and of those treated only 44% received a specialty referral [13]. However, 90% of those with a bipolar diagnosis had severe impairment [14]. Given these findings of high illness burden with life-long implications for health and well-being in both high risk

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children and those in the community in the USA, new approaches to public and clinician awareness and to early diagnosis and treatment are indicated.

3) Marrying another individual with a mood disorder (assortative mating) adds to genetic heritability [15]. There is both more assortative mating and spouses are more ill in those from the USA compared to Europe [6].

4) Cohort and anticipation effects driving earlier onset illness are well documented [16], but largely ignored in favor of other artifactual reasons for increases in early onset illness, such as changes in diagnostic criteria, over-diagnosis, coding alterations aimed at better re-imbursement. Stigma may play a role as many are unwilling to accept a diagnosis of serious psychiatric illness requiring pharmacological treatment in very young children.

5) The majority of children with psychiatric problems are seen by pediatricians or other primary care providers [17]. Many of these physicians are too busy or too inexperienced to take a detailed psychiatric history, so that primary documentation of symptom course by parents in the Child Network would be invaluable to them. It also helps relieve some of the burden on busy physicians, as parents are supplying the bulk of the effort and time required for longitudinal assessment. Repeated studies have indicated that parental ratings are more valid than those obtained from the child or their teachers see Youngstrom et al. [18].

Stigma may also play a role in the inadequate evaluation and treatment of childhood psychiatric disorders. Most individuals at cardiac risk know their blood pressure and cholesterol blood concentration levels and accept long term pharmacological treatment accordingly. Careful monitoring and treatment have improved quality of life and longevity in adults with diabetes. Similarly, systematic ratings and monitoring in childhood onset disorder would likely be helpful.

6) Early recognition is of particular importance because it is clear that appropriate treatment works [19-22]. Then, only after mood has been stabilized, should one add low doses of stimulants as necessary for any residual ADHD symptoms. In very young children there is a high co-occurrence of ADHD with bipolar disorder. In those with ADHD, additional symptoms suggestive of a co-occurring bipolar disorder include: brief or extended periods of euphoria; decreased need for sleep; extremes of irritability and aggression; suicidal or homicidal ideation or actions; hallucinations or delusions; or inappropriate sexuality [23]. Too often children with bipolar disorder are treated with stimulants and antidepressants without adequate prior treatment with mood stabilizers.

If the child is being treated, ratings by the parent in the Child Network will also help assess the degree of treatment. It is hoped that the Child Network will also be able to provide information back to the community about how very young children are actually being treated and how well it is working.

Shonkoff and Garner [24] have advocated for pediatricians to become the primary guardians of children health. They emphasize that toxic stress in childhood (abuse or neglect) is a major cause of both medical and psychiatric problems in adulthood. That physicians also assess the health of the child's parents is an important factor in the child's health. Studies have shown that if mothers with depression are treated to remission, their offspring have fewer and less severe psychiatric illnesses than mothers whose depression has been incompletely treated [25]. An excellent, brief, validated screening tool for adults My Mood Monitor (M-3) is available on line at www.whatsmyM3.com.

Pediatricians and child and adult psychiatrists should be aware of the high burden of illness in those at increased risk because of a parental history of unipolar or bipolar disorder, as well as those with prodromal symptoms or a history of childhood adversity. Axelson et al. [1] recommend earlier intervention in children at high risk because of a parent with bipolar disorder in an attempt to slow the rate of conversion to full-blown bipolar disorder. Children initially diagnosed with depression, a disruptive behavioral disorder, or sub-threshold manic symptoms (i.e., those with only brief bursts of mania; what many have labeled bipolar not otherwise specified or BP-NOS) were the ones who were most likely to convert to full blown mania upon follow up. Being alert to and treating premonitory symptoms and syndromes may head-off the emergence of more full-blown illness.

7) Psychotherapy is effective for prodromal symptoms and syndromes. If a child has two or three vulnerability factors, including 1) parents or grandparents with psychiatric illness; 2) a history of early adversity, abuse, or neglect: or 3) has already become symptomatic, clinical awareness should be further heightened [26]. If a child has a full-syndrome depression or cyclothymia, or a BP-NOS diagnosis, psychotherapeutic treatment is indicated and pharmacological treatment may be necessary as well. For example, Miklowitz et al. [27] found that family focused treatment (FFT) was superior to treatment as usual (TAU) in children with a diagnosis of depression, cyclothymia, or BP-NOS who also had a positive family history of bipolar disorder. The effects of FFT were largest in families with high levels of expressed negative emotion. Referral for FFT or a related psychotherapeutic approach in the face of impairing symptoms is definitely recommended.

8) Most critically, early expert treatment can change the course of illness for the better as amply demonstrated by Kessing et al. [28]. Patients with a first hospitalization for mania were randomized to 2 years of specialty clinic treatment versus TAU. Specialty clinic treatment included: post-hospital transition counseling; psycho-education; symptom recognition and monitoring, psychotherapy, and pharmacotherapy. Not only were there markedly fewer relapses initially over the first 2 years in the specialty clinic group, but these differences persisted and were magnified over the subsequent 4 years even though all patients had returned to TAU after 2 years. These data together with a large number of controlled studies showing superior effects of randomized psychotherapy/psycho-education compared to TAU in children and adults with bipolar disorder [29-31], provide strong evidence for the benefits of multi-modal psychotherapeutic and pharmacological treatment.

In summary, childhood onset psychiatric illnesses are not benign and deserve the same attention and care by an integrated treatment team that is standard practice for other serious childhood medical disorders, such as diabetes, cancer, rheumatoid arthritis, or epilepsy. With the evidence now available that illness trajectory can be dramatically improved with expert treatment [28,32], providing this type of comprehensive treatment on a routine basis for children with major psychiatric illness is highly desirable. Clinicians need to be aware that children in the USA are at even greater risk for serious psychiatric illness than in many European countries, and special attention to youth in the USA is indicated [6].

Complicating this endeavor, however, is the relative lack of experts in many communities in the pharmacotherapy or psychotherapy of childhood bipolar disorder and the existence of strong feelings and stigma about recognizing and treating very young children with bipolar and related disorders. Parents can help overcome some of these difficulties by taking a proactive role in completing the once weekly brief

longitudinal assessment of a range of common symptoms experienced by children using the tools available in the Child Network.

A new emphasis on treatment research studies is also sorely needed to better inform families and clinicians about optimal treatment of these disorders in young children. Even in the absence of a new public health and research agenda, clinicians can encourage parents of young children to join the Child Network. In this way better longitudinal information can be brought to bear on treatment decisions and the need for treatment revision. The enormous burden of psychiatric illness in young children in the USA requires earlier recognition and treatment which will in turn likely lessen the long-term adverse consequences.

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