

**JUVENILE PSYCHIATRIC DISORDERS
AND PSYCHOPHARMACOLOGY
Presented by Timothy E. Wilens, M.D.**

There is an emerging recognition of the presence of psychiatric disorders in children and adolescents. These disorders are impairing, highly familial and often chronic. Some of these disorders, such as attention deficit hyperactivity disorder (“ADHD”) and obsessive compulsive disorder (“OCD”), have presentations similar to their adult counterparts, but others, such as the mood disorders, have a varied presentation from that observed in adults.

Medications can be very helpful in the management of these disorders. This paper will consider juvenile psychiatric disorders and some of the major pharmacological treatments being used. These findings come from working with a group of researchers in pediatric psychopharmacology who have been together for over a decade. The team studies children and families and consists of M.D.’s, Ph.D.’s, people with master’s degrees and people on their way to graduate school. The focus is mainly on the biology, neurobiology and pharmacology.

There are many prejudices and mythologies associated with the idea of using medications in young people. Because of this mythology, many children and adolescents are not being diagnosed and many are not being treated properly for conditions that are responsive pharmacologically. Just the mention of medications in children brings up many negative thoughts in parents and it takes a lot to overcome that. Many of these problems come from misinformation. The medicines that may be used are very safe. But most of what is heard is negative and most of the negative information is mythology. This is an impediment to treatment of these young people.

A current managed care way of dealing with psychotherapy is to provide a single session of therapy and then expect the patient to snap out of it. Therapy is much more engaging and important in these kids lives. Most of the children seen in our clinics are in therapy at one point or another. Medications and therapy are not exclusive; it is helpful to employ whatever is necessary. Some situations benefit from multisystemic family therapy, while others need

individual behavioral modification. Other possibilities include individual psychotherapy or more traditional types of therapy. Therapists should be specific when prescribing therapy for a child or adolescent. It is important to know the literature and to prescribe what they need. Do they need family therapy? Do they need individual therapy? Do they need behavior modification? If what is needed is family therapy, do they need systemic family therapy, or structural family therapy? A young child of seven who is telling everyone what to do and running his parents around needs a very different type of therapy than that needed by an identified depressed child within a family. In order to provide appropriate help, treatment providers must gather data and be specific. It is critical to know what are the best types of therapy and to prescribe appropriate specific types of therapy.

People should be aware that information on the Internet can be helpful, but it can also be entirely wrong. The Internet is not always correct and there is much misinformation out there. It is critical to know good sites. A book I wrote on medications and children includes a list of resources, including good web sites. Those sites are run by child-based organizations that are connected to the Manic Depressive Society, Children in Adolescence with ADHD and other legitimate groups from which parents can get good information that is not biased and is backed by good research.

Child psychiatric disorders requiring medication are typically not disorders such as adjustment problems. For example, a girl came into the office crying and sad. She was really quite despondent because her guinea pig had died. That is a reasonable reaction to a guinea pig dying. Certainly she should not have been started on Prozac because of that reaction. However, the problem was that she tried to commit suicide when her guinea pig died and she had a long history of depression that started five years earlier when she was fourteen. So the episode itself is something that patients can manage, but the reaction that the child had and the history and the context in which it occurred would indicate that there is something more pathological there. The context is important.

Sometimes child psychiatric disorders run in families and sometimes they do not. We tend to over-emphasize the psychosocial stressors that children have, blaming them on the

disorder. The first thing to be done with a child who has a psychiatric problem is to get a good assessment. Do not treat until there is a good assessment. With a surgical decision, for example, a good surgeon spends a lot of time trying to figure out what is wrong and to think about alternative solutions, only one of which is surgery.

Assessment is important in child psychology as well. For example, it is simplistic to assume that if parents are getting divorced and the child is acting up, the divorce must be the problem. It is important to learn not only that the child is acting up, but also to know what the child is doing. It is possible that the child has been acting up for a long time and nobody has noticed because there is so much strife at home. When there is a divorce, there is usually a year or two of separation issues and talk of divorce, and the child may have been acting up and everything was missed, or the child may have ADHD and now has developed anxiety because of losing a parent. Fifty percent of children in this country now are subjected to separation or divorce. But fifty percent of children are not in need of treatment because some children have resiliency factors that others do not have. This divorce may (or may not) be connected to the child's problem. We cannot untangle that until we note that the child has behavioral, emotional and cognitive problems and then question what else is going on that may be accounting for those. The cause may be the family disruption. Or there may be some type of genetic cause.

Some disorders are genetic. The younger the child presents with any type of psychiatric disorder, the more likely it is familial. "Familial" means it runs in families; it does not necessarily mean it is genetic. The earlier the onset, the more difficult course, the more problematic, and the more familial are the disorders. These are vulnerable children, either by genetics or family environment, who manifest quite serious pathology that requires treatment.

People are disturbed not by things or events or ideas, but by the views which they take of things or events or ideas. When it is time to talk to a family about considering treatment and medications for a particular disorder, one has to remember that.

It takes a lot of time to figure out what is wrong with these children. The process is to first determine what is wrong and then determine what are the available treatments and where do

medications fit in. Parents and families have to go through the same process. It is not easy having your child on a medication and the media is very anti-medicines for children. Though it is now pretty much agreed that adolescents have problems that can be helped with medication, that understanding does not exist for children of six, seven, eight or nine. These often are lifetime disorders and my sense is the earlier they are treated, the better outcome there will be. That is true for substance abuse and ADHD. Studies found that aggressive treatment of ADHD reduces the risk for substance abuse by 65%. We need to treat these other childhood disorders early.

There is a debate about the use of alternative agents. Certain alternative agents are appropriate for kids with different types of symptoms, but we must be concerned about a couple of things. For a medication to be used in this field, two things must be satisfied. First, is the medicine safe? And second, is the medicine effective? Does it work? Safety and efficacy are two critical aspects that must be understood when considering the use of medications in kids. Those are very reasonable questions for a parent or caregiver to ask. Ask, “Do we know that this medicine really works? What does the literature say and what is your experience, doctor?” And number two, “Is it safe? And in what combinations is it safe and what do we know about the safety?” The problem with alternative agents is that they have failed to look at those two issues of safety and efficacy.

ALTERNATIVE MEDICATIONS

An example of the issue of alternative medications is the use of St. John’s Wort. It is effective for adult depression and because it works, it is a reasonable option for people who have to pay out-of-pocket for medications. The problem is that it has many drug interactions. It has the same level of drug interactions that Prozac has in terms of inhibiting the liver to break down other compounds. If a patient is on Prozac, the doctors and the pharmacists know that and they will not prescribe or authorize certain medications. But if the patient is on St. John’s Wort or a number of other similar natural compounds, they may be having the same effect but nobody knows it. There is not much information or research in this area. There are no studies about alternative medications in children or adolescents. It is important to use compounds where there is data available. Data must drive the decision making process.

ATTENTION DEFICIT HYPERACTIVITY DISORDER

Attention deficit hyperactivity disorder (“ADHD”) is the most controversial disorder. ADHD is a heterogeneous disorder with many different causes. It affects 3% to 5% of school age children, not only in the United States, but also in all countries. In an excerpt from an 1856 textbook, the British comment on the notion of concentrativeness. There has been awareness of this disorder for 150 years.

Children with ADHD are at risk for developmental sociopathy, alcohol and drug abuse problems, depression and anxiety. Before writing a prescription for the problem, it is critical to know what disorder is being treated. ADHD is a pervasive persistent impairment. It is considered a neuro-behavioral disorder. It is neurologically based with behavioral symptomatology and highly cognitive. These symptoms of inattention persist in children as they grow up to be adolescents and into adulthood. The behavioral symptoms tend to diminish a bit as children grow up. The attentive symptoms include careless mistakes, difficulty sustaining attention, problems reading, problems focusing, failing to finish tasks, starting one thing and moving onto something else and difficulty not listening. This not listening is not oppositional; it is a form of spacing out. An example is the person who is not really listening to you and appears to be looking through you because their mind is elsewhere. These children have difficulty organizing, they lose things, they misplace things – book bags, pencils, homework – and they are distractible and forgetful. In the hyperactive realm, they show much impulsivity, hyperactivity and fidgeting. Childhood onset is typically before the age of seven and it is present for more than six months. Sudden onset of these symptoms may not be ADHD. Typically, these symptoms are present in more than one setting, though there could be a high functioning child with a high I.Q. with only the attentional problems showing up only in school.

SUB-TYPES OF ADHD

There are several sub-types of ADHD. The combined sub-type is the most common. These children have all the attentional difficulties and are somewhat impulsive, are hyperactive, are fidgety, jump into things without understanding the consequences, intrude, interrupt, are impatient and have low frustration tolerance. Fifty to seventy-five percent of children with

ADHD are in this category. About 20% of children with ADHD have only the inattention difficulties and a very small percentage have just the hyperactivity and impulsivity.

ADHD commonly occurs with other disorders. This is known as co-morbidity or co-occurring problems. About half of children with ADHD have it alone. The other half of children with ADHD have ADHD plus conduct issues, plus opposition disorder, plus depression, plus anxiety, plus learning disabilities. Many kids have ADHD, anxiety and depression. It is not uncommon to see kids who have all three overlapping: anxiety, depression and conduct disorder. It is important to determine whether there are other disorders in addition to ADHD so that the right treatment may be chosen. If the child has ADHD alone, it is best to start with stimulants and move down. But if the assessment shows ADHD plus anxiety disorder, it is important not to start stimulants so quickly because, if stimulants are started, they may develop anxiety. If a child has ADHD along with tics and spasms, stimulants could exacerbate the tics. An example is a patient who has obsessive compulsive disorder and ADHD. This child was doing beautifully on treatment for the OCD, and then started ADHD treatment because she had a lot of problems with attention and focusing. That helped, but she then developed tics. Tics and OCD run together in families. One family member may have OCD, while another family member has tics. Parents whose children are on these medicines should look for such symptoms. If they are seen, it is necessary to move to a different agent for ADHD.

Children who are on medicine for ADHD and then develop other symptoms that indicate bipolar disorder must be re-diagnosed. To make sure the medicines are not leading to the disorder, the medicine must be withdrawn. If the diagnosis confirms the development of bipolar disorder, the data are very clear that the bipolar disorder must be treated first. Then treat the ADHD. ADHD treatments that may have stopped working with that co-morbidity of bipolar disorder may now work. Data indicate that the likelihood of responding with ADHD is much lower if the mania is out of control than if the mania is controlled.

If a child has ADHD and substance abuse, the addiction should be treated first, then the ADHD. There is not much evidence that treating the ADHD will help the addiction in the short term. If a child has depression, attempt to get him or her off the substance to see if the depression

will start to clear on its own. If not, then go ahead and treat the depression. When treating a child with anxiety, stay away from benzodiazepines such as Valium because of the addiction potential.

TREATMENT OF ADHD

The treatment of ADHD is non-specific. Even if other things may have caused the ADHD-like symptoms, the medicines work for those children. The medicines work for the symptoms. The effects of stimulants are not paradoxical. So if non-ADHD kids are given medication for ADHD such as amphetamine, they focus better, they are more attentive, they are less hyperactive and they are more vigilant. College students use amphetamines to help them study. What helps them is the anti-ADHD properties of these medicines -- the focus, the attention and the side effect of insomnia. They do not just make a hyperactive person calm. They work on everybody. But when there are many more problems to start with, we see the greatest change.

The response to stimulants is not diagnostic. About three-fourths (3/4) of people respond to stimulants, but about one-fourth (1/4) do not. If the underlying disorders are too severe, the medicines do not work. Sometimes that occurs with ADHD. It is not necessarily a function of severity; it could be simply that the ADHD does not respond to the medications. That is true for all psychiatric disorders across the life span; it is not only an issue with children. Because the medications work on different disorders, not just ADHD, and because they don't work in all cases, and because the effects are not paradoxical, it is not appropriate to say, "I don't know if this child has ADHD, so let's put him on medicines, and if he responds, then we know that he had ADHD." It is critical to make a diagnosis first and then try out the diagnostic hypothesis. Many children who have been diagnosed properly do not respond to stimulants. If that occurs, move on to other agents.

There have been two studies to determine if there is a difference in results when using medicines alone or in combination for ADHD. In one study, fifty children were put on methylphenidate (Ritalin) alone, and fifty children were given methylphenidate plus very good multisystemic therapy, behavioral modification, teachers' aides, etc. At the end of twenty-four months, there were no differences between the ADHD groups who were treated with medication

alone and those who were treated with medication plus psychotherapies. This study was replicated in a major study with more than 500 children. There were four treatment groups: (1) medicine alone, (2) medicine plus therapies, (3) therapy (behavioral modification) alone, and (4) community care. The best responders were those who were on medication, followed by those receiving behavioral management techniques. Nobody was on placebo because that was unethical. This does not mean that we should not use psychotherapy because the problem with these studies is that they took all comers, and all children are not typically put into therapy. Only those children who need therapy go into therapy. These studies really show that, first, medicine is essential for ADHD treatment. It is a foundation. And second, not everyone needs therapy along with the medication. Children who need therapy are those who are behaviorally disinhibited, argumentative and non-flexible, have outbursts, are anxious and have severe self-esteem issues. Those are the children who will benefit from therapy.

There is another point to make about these studies that have looked at medicine with ADHD. The children who were given medication received very good medicine management. There was very aggressive therapy, which included not only high doses but also a lot of interaction with the families, the schools and other aspects like that as well as very close observation.

The medications used for ADHD are the stimulant class agents and the stimulant medications. Typically, we use Ritalin (methylphenidate), which is a shorter acting compound, or Dexedrine (dextroamphetamine), which is also shorter acting, Adderall (amphetamine sulfate), which is a little bit longer acting, and Cylert (magnesium pemoline), which is used less frequently. Ritalin is very safe, and it has been around since the 1950's. Until recently, the only problem with it is that people prefer the shorter acting form and it must be given two or three times a day and that can be a real problem with a school nurse. The other problem is what occurs later on after school, when there may be social problems and other issues that are not being properly managed.

Dexedrine is an amphetamine and is the oldest compound that has been used for ADHD since the 1930's. It is more potent and only half as much is used. It tends to be longer acting, so

its behavioral consequences last longer. The child is more attentive, more focused and less impulsive. But, because it lasts longer in the blood, it may cause more insomnia. It has somewhat harsher some side effects. More moodiness may be noted, but typically that occurs when it is wearing off in the late afternoon.

Adderall is an amphetamine compound. It has salts, some of which release quicker and some slower. It also has mirror image compounds that provide longer action. It is the longest acting currently available preparation of medication in the amphetamine/methylphenidate class. Typically it can be dosed twice a day and therefore it allows the child to get through the school day without school time administration. Then he or she takes a repeat of half the original dose. It is very similar to Dexedrine, which has been around for years. Adderall has also been around but has been re-marketed in the last few years.

Cylert is the longest acting compound, but it is not as effective as the other compounds. Studies have shown that Cylert works in about 55% of the cases. It is typically given once or twice a day, and it can take up to six weeks to see if it will work. A nice quality is it provides around the clock coverage. The problem is that the FDA has put out a pretty significant warning that this medicine can cause chemical hepatitis. The FDA is recommending frequent liver function tests.

SELECTION OF MEDICINE FOR CHILDHOOD ADHD

Ritalin is usually the first choice of medicine for ADHD. But if the child or parents really do not want school administration, use Adderall. Dexedrine is somewhat longer acting. Dexedrine takes about two hours to work and it works for six or seven hours. Adderall works in about a half an hour and works for the same amount of time or a little bit longer. It starts working after about twenty or thirty minutes and it wears off nicely.

There is a new medicine, once-a-day methylphenidate, which is a once-a-day Ritalin-like compound. Once-a-day amphetamine should also be available soon. Once-a-day stimulants are the wave of the future. These pills are the size of a Tic-Tac. The pill itself does not dissolve. As it goes through the system, it absorbs water, and a polypropylene plunger expands, pushing the

chemical gradient out at a specific pharmacokinetic profile in order to provide efficacy for up to fourteen hours. It may be given early in the morning and it works all day. Studies show it works very well. In fact, it is not given at a flat rate all day because tolerance develops. It is given at a specific ascending curve of plasma concentration. Children love it because they do not have to go to school with pills. However, it does leave after-dinner time not covered.

Short-acting methylphenidate, the short-acting amphetamine, kicks in within an hour but within a few hours the therapeutic effects are gone. Adderall works quickly and it lasts for a long time. It is the longest acting current duration medication we have. A form of methylphenidate, which will be called Concerta, lasts ten to fourteen hours will soon be on the market. Most of the new compounds in the future will be in that range.

In addition to stimulants used for ADHD, anti-depressants and, in particular, tricyclic antidepressants are also used. Stimulants are the first choice, but tricyclics such as desipramine or nortriptyline are next. They are very effective for ADHD and are next to the stimulants in terms of how well they work. The anti-hypertensives, clonidine and guanfacine, are often used for the impulsive hyperactive child and for the younger child. Often they are used in combination with other medication. In addition, there are other miscellaneous medicines that may be used.

There is no evidence that an antihistamine like Benadryl would do anything for ADHD. Sometimes it may be used for sleep, since ADHD brings sleep problems.

DEPRESSION IN ADOLESCENTS

Depression is as common in adolescents as ADHD is in younger children. People are more familiar with childhood ADHD than with adolescent depression. At least 5% of adolescents have depression. Children and adolescents sometimes kill themselves or kill other children. Symptoms of adolescent depression are somewhat similar to symptoms of adult depression, but there are some differences. Adolescents with depression can be very irritable and have a very negative attitude. They look sad when they are younger. As they get older, they tend to tell you they are sad. They can act out, they can isolate and they can withdraw. Young children will have temper tantrums, while older children may cry. There is a great sense of

worthlessness and there can be self-injurious behavior. Some young people do not know how to kill themselves, so they will head-bang or hurt themselves in other ways.

Half of young people with depression show mood reactivity. They over-react to situations. They are very easily agitated, irritable and angry. If they have limits imposed, they quickly have serious problems. They may become seriously depressed, saying, “You don’t love me, you hate me” while they cry and continue to act depressed. Or they may have a major relapse. The major medicine used for mood reactivity is a serotonin reuptake inhibitors for depression. The first and second choices are the Prozac-like drugs. Prozac is the first drug to be shown effective in children with depression. Paxil and Zoloft have also been shown to be effective. All of the new generation of anti-depressants are helpful with children and adolescents. That includes Prozac, Paxil, Luvox and Zoloft. Young people tolerate them well. Blood monitoring is not needed. It can take six to eight weeks before improvement is shown. It is typical to start with very low doses and bring them up slowly, so that the child will not become agitated. About a quarter become agitated.

For youngsters about the age of ten, full adult doses are used. A pharmacokinetic study of drug metabolism showed that children metabolize the drugs twice as effectively as adults do. For the same reason, ten, eleven and twelve year old children are starting to eat as much food as adults do. So they can handle the same dosage of these medicines as adults. It was found that appropriate dosage is about twice the weight-corrected dose, because they metabolize about twice as fast. But it should be started with a low dosage in order for it to be well tolerated. Children do not like to go onto medications, so it is important to be careful about how well it is tolerated.

Other medicines, such as Wellbutrin and Serzone, can help. These are medicines that are used in adult depression. However, there is not much data for children’s use of these medicines. We believe they are effective, and we use them more for refractory cases. The first choice is to start with a serotonin reuptake inhibitor. Pharmacological treatment for juvenile depression is good, but it is not excellent. It is not as robust as pharmacological treatment for ADHD.

BIPOLAR DISORDER

About 25% to 33% of children who are depressed actually have bipolar disorder. We see the depression and the mania is hidden. Medicine is one of the things that can bring out the mania sooner. Data from two studies show that the medicine really does not cause the mania, and it probably would have occurred anyway. But it can speed up that process by unmasking what is already there. So, when using an anti-depressant in a child the results must be monitored carefully in case the child is really bipolar and mania is triggered. In such a case, pull that medicine away and treat their mania, and then work on their depression.

It is difficult to diagnose bipolar disorder because most adolescents experience both the depression and the euphoric mania at the same time, so they are miserable. They are agitated, irritable, angry, substance abusing, in your face and have temper tantrums. It is really difficult to diagnose. Many have delinquency at the same time. There can be much impairment associated with bipolar disorder; it often comes with other problems. Often they also have ADHD and conduct disorder. It is critical that people who understand bipolar disorder diagnose these children. Once a diagnosis shows bipolar disorder and the child shows more mania -- the agitation, the giddiness, the goofiness, the aggressiveness -- that is typically what should be treated.

Treatments for bipolar disorder include the new generation of atypical anti-psychotic medications including Zyprexa, Risperidone and Seroquel. Either Zyprexa or Risperidone are appropriate as first line agents for young people who are bipolar with prominent symptoms mixed, that is showing both mania and depression at the same time. Data from a 1998 study on Risperidone showed it worked to help improve the mania, psychosis and aggression. Risperidone should not be used for ADHD alone. The same result was found when Zyprexa was used. It worked for manic symptoms. It took about two weeks to start working, and by six weeks the children were much better. The more severe cases of bipolar disorder should be started with an atypical anti-psychotic.

For mild cases that may not require an atypical anti-psychotic, or for youngsters already taking an anti-psychotic, usually another medicine should be started because an anti-psychotic is

a strong medicine. One approach is to use mood stabilizers such as Lithium to help the cycling underneath. Though it must be monitored carefully, it works well. Other possibilities include Tegretol and Depakote. Neurontin is a good choice because it is metabolized by the kidney. Blood levels need not be checked, and it works. It has a very good reputation, although it is probably not as effective as Lithium, Tegretol, or Depakote, but it is reasonable and with an atypical anti-psychotic, it works well.

If a child has bipolar disorder or is psychotic and also has substance abuse, there are no good guidelines on medication. In the face of substance abuse, treat the bipolar disorder and, if necessary, hospitalize the child and put him or her in day treatment in order to have control. If the bipolarity or psychosis is under control, there will be a much better chance of getting a better response with the addiction. Addictive substances should not be used and the prescriptions must be supervised.

OBSESSIVE COMPULSIVE DISORDER

Obsessive compulsive disorder is found in approximately one percent of young children and in up to four percent of adolescents. There is an overlap with substance abuse. OCD is one of the few things that can mimic a very serious psychiatric disorder. A child might appear to be schizophrenic and actually have OCD. If the OCD is treated, they do much better. OCD is a chronic illness, with marked distress of more than one hour a day, with compulsions or obsessions. With young people there is less hand washing and more concern about contamination. They will not do certain things, they line things up in their heads and they have superstitions such as having to count license plates or doing number reversals. This can become overwhelming and they become totally distressed. OCD in young people is also highly comorbid with other disorders. The first medicine to try is a serotonin reuptake inhibitor, particularly Zoloft. A big study on Zoloft has been published in the *Journal of the American Medical Association* showing it to be effective for juvenile OCD. It is also FDA approved in that age group. Another study showed it has long-term cardiovascular safety. It is a very safe medication. Prozac has also been shown to be helpful for childhood OCD, as has Luvox, which is FDA approved for childhood OCD. Many compounds in the serotonin reuptake inhibitor family are highly effective for OCD and are well tolerated. Typically, higher doses are needed.

These medicines are started at usual doses but can go up to 40 to 60 milligrams of Prozac, or 300 milligrams of Zoloft, or 300 to 400 milligrams of Luvox, or 60 to 80 milligrams of Paxil.

Anafranil is also FDA approved for children. Anafranil is more like a tricyclic. It has more side effects and requires cardiovascular monitoring and blood monitoring, but it can be a very effective agent. Typically, first try one or two of the serotonin reuptake inhibitors such as the new generation of medicines, Prozac, Paxil, Zoloft, or Luvox. If they do not work, then move to a different agent like Anafranil. If that is not working, add some Klonopin or Valium. The anxiety breaking medicines are good because children with OCD also have anxiety and anxiety can trigger the OCD. Reducing the anxiety helps to reduce some of their obsessive-compulsive problems.

Only in extremely refractory cases of OCD are anti-psychotics appropriate. Before using anti-psychotics for OCD, serotonergic-based compounds should be tried as well as two or three of the serotonin reuptake inhibitors. Start with Prozac, Zoloft or Luvox. If the child is on other medicines, a larger dose may be needed.

PRESCRIBING THROUGH SUBSTANCE ABUSE

There is no right or wrong to prescribing through substance abuse; there are no good guidelines. My sense is that if child has bipolar disorder or is psychotic treat the psychotic disorder and, if necessary, hospitalize the child or put him or her in day treatment in order to have better control. If the bipolar disorder or psychosis is under control, there will be a much better change of getting a better response with the addiction. Addictive substances should not be used and the prescriptions must be supervised. For adolescents with ADHD, the addiction typically is treated first and sequence back to the ADHD because there is not a lot of evidence that treating the ADHD will do much for the addiction in the short term. For depression, the aim is to get the child off of the substances and evaluate whether or not the depression will start to clear on its own. Anxiety is treated with a similar approach. Benzodiazepines should not be used for anxiety because of the addictive potential. Again, each case is examined individually and there is no cookbook methods. If after 2-3 months into treatment and the child is getting worse, stop the medicines and re-evaluate. Hospitalizing the child at this point may be appropriate.

KEEPING CURRENT WITH THE FIELD OF PSYCHOPHARMACOLOGY

Textbooks are not very good in this field. Every year there is a Massachusetts General Hospital course in pediatric psychopharmacology. *The Child Psychiatry Journal* and its web site are helpful. *The Journal of Child and Adolescent Psychopharmacology* is also good.

About the Presenter

Timothy E. Wilens, MD, completed undergraduate and medical school at the University of Michigan, and his psychiatric training at Massachusetts General Hospital. He is board certified in child, adolescent, adult, and addiction psychiatry. He is currently Director of Substance Abuse Services in the Pediatric and Adult Psychopharmacology Clinics at Massachusetts General Hospital, and is Associate Professor of Psychiatry in the Harvard Medical School. Dr. Wilens has extensive clinical and research experience in both pediatric and adult psychopharmacology and the Addictions having published over 250 articles, chapters, and abstracts. He has also recently written a popular book, *Straight Talk About Psychiatric Medications for Kids* (Guilford Press, 1999/2001). Dr. Wilens has federal funding from the National Institutes of Health as well as pharmaceutical support and is currently involved in pediatric and adult-related research projects including the characterization and treatment of attention deficit hyperactivity disorder (“ADHD”) across the lifespan; overlap of ADHD, bipolar disorder and the addictions, the pharmacologic treatment of juvenile psychiatric disorders and studies of the children of substance abusing parents.

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Suggested Readings

Ambrosini, P.J., Bianchi, M.D., Rabinovich, H. & Elia, J. (1993). Antidepressant treatments in children and adolescents: I. Affective disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32, 1-6.

Biederman, J. & Jellinek, M. (1984). Psychopharmacology in children. *New England Journal of Medicine*, 310, 968-972.

Biederman, J., Baldessarini, R.J., Wright, V., Knee, D. & Hartz, J.S. (1989). A double-blind placebo controlled study of desipramine in the treatment of ADD: I. Efficacy. *Journal of the American Academy of Child and Adolescent Psychiatry*, 28, 777-784.

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Gittelman, R. (Ed.). (1986). *Anxiety Disorders of Childhood*. New York: The Guilford Press.

Kafantris, V. (1995). Treatment of bipolar children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34, 732-741.

A recent update on the pharmacological treatment of juvenile mania. The review points out the relative lack of positive data derived from systematic trials in the antimanic agents commonly used in Child Psychiatry.

Leonard, H.L & Rapoport, J.L. (1989). Pharmacotherapy of childhood obsessive-compulsive disorder. *Psychiatric Clinics of North America*, 12, 963-970.

This is an excellent review of the basic neurobiology and characteristics of juvenile obsessive compulsive disorder. A thorough review of the data and pharmacological management of OCD in children and adolescents is presented.

Popper, C. (Ed). (1987). *Psychiatric Pharmacosciences of Children and Adolescents*. Washington, D.C.: American Psychiatric Press.

This issue of the Progress in Psychiatry Series provides a comprehensive review of the basic biochemical and neurobiological mechanisms in developmental psychiatry attentive to issues of development. The differences in metabolism of major classes of medication are provided in children and adolescents compared to adults.

Riddle, M.A. (Ed). (1995). Pediatric psychopharmacology, Vol. 1 & 2. *Child and Adolescent Psychiatric Clinics of North America*.

A two issue very timely and extensive update on the research and clinical usefulness of the various diagnosis and agents employed within ADHD. These volumes are a compilation of various clinician researchers in Child Psychiatry and Neurology. Given that there are no "classic" texts in this area, these editions will serve very adequately as a text in the area.

Spencer, T., Biederman, J., Wilens, T., Harding, M., O'Donnell, D. & Griffin, S. (1996). Pharmacotherapy of ADHD across the lifecycle. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35, 409-432.

A comprehensive review of the stimulant and nonstimulant medication trials for ADHD. This review offers an analysis of the existing data on the efficacy of the various agents employed in ADHD in children, adolescents and adults.

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This review of the literature covers the data on the cardiovascular effects of the TCAs with comparisons between specific TCAs and the effect of development. Data on dynamic cardiovascular testing including 24 hour and graded exercise testing are listed. The tertiary and secondary amines are compared systematically. Guidelines on vital signs and ECG parameters are given when using the TCAs.

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