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IN THIS ISSUE

Focus of the Month: ADHD

- Prescribing and Dosing Stimulants: Practical Issues
- Meds for ADHD: An Update
- Research Update
- Expert Q & A:
Benedetto Vitiello, MD:
Risks of ADHD Medication

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Prescribing and Dosing Stimulants: Practical Issues

By Daniel Carlat, MD
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Dr. Carlat has disclosed that he has no relevant relationships or financial interests in any commercial company pertaining to this educational activity.

How high to dose stimulants?

There is little agreement on how high to dose stimulants. One common rule of thumb is to prescribe 1 mg/kg body weight of methylphenidate (MPH) vs. 0.5 mg/kg of amphetamine (AMP) preparations (Sachdev P et al., *Aust N Z J Psychiatry* 2000;34(4):645-50). Using this for the average 12-year-old boy (50th percentile is 40 kg, or about 90 pounds), Ritalin (MPH) would be dosed at 40 mg/day and Adderall (AMP) at 20 mg/day. The average adult male weight is about 75 kg or 165 lbs, meaning the weight-based dose of Ritalin is 75 mg/day or 37.5 mg/day of Adderall.

If we follow this logic, though, we run afoul of the FDA, since the maximum recommended dose of almost all stimulants is 60 mg. The fact is that many patients need much higher than recommended doses, especially adult patients. Maximum recommended doses are arrived at based on initial clinical trials by drug companies. Companies will typically err on the side of caution and choose as the maximum tested dose a relatively low one to prevent side effects and maximize the chances of FDA approval. But in the real world, many patients may need higher doses.

Generally, when patients are dosed according to algorithms that specify increases in doses when response is sub-optimal, patients are given doses higher than those given in community settings. For example, in the NIMH-sponsored Multimodal Treatment Study of Children With ADHD (known as the MTA) 579 children with ADHD were randomly assigned to four treatment groups: medication management, medication management combined with behavioral therapy, behavioral therapy alone, and community care (in which patients received care of their choosing, often from a pediatrician).

The average final dose of Ritalin in the community care patients was 18.7 mg/day, whereas patients assigned to researcher-clinicians received an average of 32.8 mg/day. The patients on the higher doses improved more (Jensen PS, et al., *J Dev Behav Pediatr* 2001;22:60-73).

The MTA study used a “forced titration” strategy. This meant that at monthly visits symptoms were rated with the Clinical Global Improvement scale. If patients had ADHD residual symptoms (or if they had significant side effects), the algorithm required a specific change—an increase in dose for residual symptoms or a decrease or switch to another drug in cases of side effects. This active approach to dose titration was designed to rapidly lead to a state in which there was “no room for improvement” within the dosing limits set by the study and FDA, using the terminology of the authors (Vitiello B et al., *J Am Acad Child Adol Psychiat* 2001;40(2):188-196).

Continued on Page 5

Learning objectives for this issue: 1. Describe logistical considerations when dosing and prescribing medication for adults with ADHD. 2. Compare the available medications for patients with ADHD. 3. Outline the risks of ADHD medications in children. 4. Understand the most current findings in the literature regarding psychiatric treatment. This CME/CE activity is intended for psychiatrists, psychiatric nurses, psychologists and other health care professionals with an interest in the diagnosis and treatment of psychiatric disorders.

The Official 2010 TCPR ADHD Medication Comparison Chart

Medication	Dose (starting-max)	Available Strengths (in mg except where noted)	Duration of Action	Can it be Split?	Generic Available?	Ages Approved for ADHD	Delivery System/Notes
Methylphenidates							
Short-acting							
Ritalin	5 mg BID-20 mg TID	5, 10, 20	3-4 h	yes	yes	6-17, adults	Immediate release tablet
Focalin (dexmethylphenidate)	2.5 mg BID-10 mg BID	2.5, 5, 10	3-4 h	yes	no	6-17, adults	Tablet. D-enantiomer of Ritalin
Methylin	5 mg BID-20 mg TID	5, 10, 20	3-4 h	yes	branded generic of Ritalin	6-17, adults	Immediate release tablet
Methylin CT	5 mg BID-20 mg TID	2.5, 5, 10	3-4 h	yes	no	6-17, adults	Chewable tablet
Methylin Oral Solution	5 mg BID-30 mg BID	5 mg/5ml, 10 mg/5ml	3-4 h	NA	no	6-17, adults	Clear, grape-flavored liquid
Intermediate-acting							
Ritalin SR	10 mg q AM-60 mg q AM	20	4-8 h	no	yes	6-17, adults	Continuous release tablet (less predictable because of wax matrix)
Metadate ER	10 mg q AM-30 BID (max 60mg/day)	10, 20	6-8 h	no	branded generic of Ritalin SR	6-17, adults	Continuous release tablet (less predictable because of wax matrix)
Methylin ER	20 mg q AM-60 mg q AM	10, 20	4-8 h	no	branded generic of Ritalin SR	6-17, adults	Hydrophilic polymer tablet; possibly more continuous than others in category
Long-acting							
Concerta	18 mg q AM-72 mg q AM (if 12+ y.o.)	18, 27, 36, 54	10-16 h	no	no	6-12; up to 54 mg, 12+; up to 72 mg	Initial, then continuous, release capsule. Hard shell may make it more difficult to abuse
Daytrana (methylphenidate transdermal system)	10-30 mg q AM. Remove after 9 hours	10, 15, 20, 30	8-12 h	no	no	6-12 only	Continuous release patch. Duration can be shortened by decreasing wear time
Focalin XR (dexmethylphenidate XR)	6-17: 5 mg q AM-30 mg q AM; adults: 10 mg q AM-40 mg q AM	5, 10, 15, 20, 30	8-12 h	can be sprinkled; do not crush or chew	no	6-17, adults	Capsule of 50% immediate release beads & 50% delayed release beads. Mimics BID dosing
Metadate CD	20-60 mg q AM	10, 20, 30, 40, 50, 60	9-12 h	can be sprinkled; do not crush or chew	no	6+	Capsule of 30% immediate release beads & 70% delayed release beads. Mimics BID dosing
Ritalin LA	20-60 mg q AM	10, 20, 30, 40	8-12 h	can be sprinkled; do not crush or chew	no	6+	Capsule of 50% immediate release beads & 50% delayed release beads
Amphetamines							
Short-acting							
Dextrostat (dextroamphetamine)	3-5: 2.5mg qAM-20 mg BID; 5-16: 5 mg q AM-20 mg BID	5, 10	3-5 h	yes	branded generic of Dexedrine	3-16	Tablet
Liquadd (dextroamphetamine)	5-20mg BID	5 mg/5 ml	3-5 h	N/A	no	3-16	Bubble-gum flavored liquid
Desoxyn (methamphetamine)	5 mg q AM-10 mg BID	5	3-5 h	yes	yes	6-17, adults	Tablet
Intermediate-acting							
Adderall	5-30 mg BID or 5-60 mg q AM	5, 7.5, 10, 12.5, 15, 20, 30	4-8 h	can be crushed	yes	3+	Tablet. Mixed salt of l- and d-amphetamine.
Long-acting							
Dexedrine Spansules (dex-troamphetamine)	5 mg q AM-20 mg BID	5, 10, 15	10-14 h	can be sprinkled; do not crush or chew	yes	6+	Capsule of immediate and delayed release beads

Meds for ADHD: An Update

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With the many medication options available for ADHD, it can certainly be confusing deciding which to choose. Typically, the medication of first choice is one of the stimulants, as they are more consistently effective than the non-stimulants.

Exceptions to this rule would include patients with any of the following: 1. Contraindications to stimulants: These could include a history of stimulant abuse; cardiac arrhythmia or other significant cardiac problem; or a history of psychiatric adverse events to stimulants, such as anxiety or paranoia. 2. Clinical “two-fers:” For ADHD + tobacco dependence or depression, try Wellbutrin or desipramine. For ADHD + hyperactivity + hypertension, try guanfacine or Tenex.

If you choose to start with a stimulant, many clinicians pick a long-acting formulation for patient convenience. These include methylphenidates (Concerta, Ritalin LA, Metadate CD, Focalin XR) or amphetamines (Dexadrine SR, Adderall XR, Vyvanse). Other psychiatrists start with short-acting stimulants, for a number of reasons: first, they are cheaper and are covered by insurance; second, by virtue of being short-acting, they can be titrated more aggressively and in more of a fine-tuned manner; and third, you can always transition patients to long-acting formulations once you’ve arrived at the right dose.

Amphetamines are thought by some to be more rapidly effective than methylphenidates (MPH), but at the expense of more side effects, such as irritability and

insomnia. This is all anecdotal evidence however, since there are very few head-to-head studies comparing stimulants.

The stimulant Vyvanse (lisdexamfetamine) merits special mention, because, while it is relatively new, it has been around for three years—long enough to allow some clinical experience. It appears that Vyvanse represents an incremental, albeit small, advance in long-acting stimulant treatment. It is a pro-drug of dextroamphetamine, and therefore needs to be absorbed in the GI-tract to be converted to its active form. This property theoretically makes it more difficult to abuse via snorting, but it doesn’t prevent it from being abused orally. In fact, at higher doses it will provide speed addicts with plenty of buzz.

Vyvanse has developed the reputation as the longest-acting stimulant on the market, which may be true or may be a reflection of its metabolic consistency (there is evidence of less interpatient variability in its duration of action than other stimulant formulations). The onset seems smoother as well. In some ways, one can think of Vyvanse as the amphetamine response to the success of Concerta—another very long-acting, smooth onset and off-set stimulant—but with the potential advantage of being an amphetamine and, therefore, (anecdotally) more potent than MPH preparations.

The non-stimulants sit somewhere between placebo and stimulants in terms of efficacy, explaining why they are usually second-line choices. Nonmedication options, such as behavioral therapy, while not as effective as medication for core ADHD symptoms, are helpful for improving parenting skills and peer relationships, both of which are crucial for children with ADHD (The MTA Cooperative Group, *Arch Gen Psychiatry* 1999;56: 1073-1086).

For detailed information on all available ADHD medications, see the chart on the previous page.



Adderall XR	5 mg q AM–40 mg q AM	8–12 h	can be sprinkled, do not crush or chew	yes	6+	Beads. Mixed salt of l- and d-amphetamine; mimics BID dosing
Vyvanse (lisdexamfetamine)	30 mg q AM–70 mg q AM	8–12 hrs	Can be dissolved in water	no	6–12, adults	Capsule. Lisdexamfetamine is prodrug of dextroamphetamine
Non-stimulants						
Strattera (atomoxetine)	Dosage varies. See below *	24 h	no	no	6–17; max daily dose of 70 mg; 18+: max dose of 100 mg	Capsule. Norepinephrine Reuptake Inhibitor
Wellbutrin (bupropion)	1.4–6 mg/kg/day	6–9 h	yes	yes	Not FDA-approved for ADHD	Tablet. Bupropion SR & XL versions exist
Provigil (modafinil)	100 mg q AM–400 mg q AM	18–24 h	yes (200 mg tabs are scored)	no	Not FDA-approved for ADHD	Tablet. Studies have shown modafinil to be helpful for ADHD, but low incidence of serious rash
Intuniv (guanfacine extended release)	1–4 mg daily (do not increase faster than 1 mg/wk)	24 hrs	no	no	6–17	Extended release tablet. α2a agonist (orthostatic hypotension). Do not stop abruptly. Not a 1:1 conversion from IR. Do not give with high-fat meals.
Tenex (guanfacine immediate release)	1–4mg daily (do not increase faster than 1 mg/wk)	17 hrs	can be crushed	yes	Not approved for kids or ADHD. Approved only for adults 18+ for hypertension	Tablet
Norpramin (desipramine)	Dosage varies. See below **	8–24 hrs	can be crushed	yes	Same as above.	Tablet. Desipramine (TCA). Gradually titrate

*Strattera dosing: Weight < 70kg, start 0.5 mg/kg, target 1.2 mg/kg, max 1.4 mg/kg; weight >70 kg, 40–100 mg. **Desipramine dosing: Adults: 75–300 mg/day; off-label: 6–12 y.o., 10–30 mg/day; 12–17 y.o., 25–150 mg/day



This Month's Expert:
Risks of ADHD Medication
Benedetto Vitiello, MD

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Dr. Vitiello has disclosed that he has no relevant financial or other interests in any commercial companies pertaining to this educational activity.

TCPR: Using stimulants as a treatment for attention deficit hyperactivity disorder (ADHD) has been a common practice for a long time. I think a good place to begin, Dr. Vitiello, is to talk about the potential safety issues associated with stimulants: namely cardiac risks and drug diversion and abuse.

Dr. Vitiello: Sure. Let's start with the cardiac risks. Stimulant medications—amphetamines and methylphenidate—are known to increase blood pressure and heart rate. In 2005, the FDA and the maker of Adderall (Shire) did a review of a number of databases for safety issues related to stimulant use in children. Around the same time, MedWatch also looked into it.

TCPR: And what did they find out?

Dr. Vitiello: There were a number of cases of children in the MedWatch database who had died suddenly while on stimulant medications, either amphetamines or methylphenidate. Some of these were dramatic, such as children taking Adderall in the morning, then going to school and doing physical exercise like running, and then collapsing and dying.

TCPR: So what did they conclude from this data review?

Dr. Vitiello: The bottom line was that one could not draw any causal inference from this data because there was no non-medication control and, because of the way MedWatch collects data (physicians call in cases of unusual side effects at their own discretion), the database was incomplete. So the tentative conclusion was that the rate of sudden cardiac death when taking stimulants was not greater than what one could expect in this population without medication.

TCPR: However, didn't the FDA advisory committee vote to take some action on this data?

Dr. Vitiello: Yes. The advisory committee observed in these cases that, when they did autopsies on the children who had died, many of them had some anatomical abnormalities of their hearts, like valvular heart disease or hypertrophy, even though these problems were unknown to the prescribers. So one conclusion was that these drugs may increase the risk of sudden death if there is an anatomic abnormality in the heart. Therefore, the FDA issued warnings that these drugs should not be used or should be used with great care in children with known cardiovascular abnormalities. In addition, it was recommended that before prescribing them, a doctor should do a physical examination and collect a family history to see if there was a first-degree relative who had died suddenly or had a history of cardiovascular conditions.

TCPR: What about other recommendations? Doesn't the American Heart Association suggest more intense screening?

Dr. Vitiello: The AHA has recommended a systematic screening that includes an electrocardiogram (EKG) of all children for whom stimulants are considered. Neither the American Academy of Child Psychiatry nor the American Academy of Pediatrics has endorsed this recommendation. They believe that the physical and the history are sufficient and an EKG is only needed if there are positive findings in the family or personal history and/or at the physical examination.

TCPR: So for practicing psychiatrists, does that mean that we should call up the pediatrician and ask if the child has any cardiac problems, or should we just start examining all the kids who come into our office?

Dr. Vitiello: Either way. It depends on whether you feel comfortable doing physical examinations, listening to the heart and collecting a family history. One has to keep in mind anyway that the majority of stimulants are prescribed by pediatricians in the United States. So psychiatrists prescribe some amount, but not the bulk of them.

TCPR: So assuming we choose to do it, what should we be looking for in the history and physical exam?

Dr. Vitiello: We are listening for rhythm abnormalities. Heart murmurs are fairly common in pediatrics and most of them are benign, but some of them may suggest that there is a valve problem. The history should include asking whether a child (or an adult) has ever had any cardiovascular event such as dizziness, fainting, palpitations, tachycardia or if a first-degree relative like a sibling died suddenly or suffers from any cardiovascular problems.

TCPR: Recently there was a study in *The American Journal of Psychiatry* about sudden death in children taking stimulants (Gould MS et al., *Am J Psychiatry* 2009;166:992-1001). Can you comment on this?

Dr. Vitiello: That was the first controlled study that linked the use of stimulants—in this case methylphenidate—with sudden death in individuals without obvious cardiovascular abnormalities. They found that the use of stimulants was greater in the group of children with unexplained sudden deaths than in a control group of children who died suddenly of known causes. However, this study has been criticized because of the potential for recall bias and because of the small number of deaths (a total of only 12 cases over

10 years in the U.S.). [For more information, see “Study Links Ritalin to Sudden Death in Children; FDA Disagrees,” *The Carlat Psychiatry Report* July/August 2009, p.9]

TCPR: So this is not the kind of study that should necessarily cause us to change our prescribing practices.

Dr. Vitiello: No. Apparently neither the FDA nor the major psychiatry and pediatrics organizations decided to change their policies.

TCPR: Okay. Let's move on to problems with diversion and abuse. Have there been any notable trends lately?

Dr. Vitiello: Diversion and abuse of stimulants has become more of a concern in recent years. A survey of high school and college students has provided evidence that it is fairly common for students to use stimulants nontherapeutically (Wilens TE et al., *J Am Acad Child Adolesc Psychiatry* 2008;47:21-31). They don't necessarily use them to induce euphoria—so this is not classic substance abuse—but they use them to complete an assignment, to study for tests, and in other ways to enhance their academic performance.

TCPR: This makes for a difficult practical problem for psychiatrists or pediatricians, when somebody comes into the office who may know how to fake the symptoms of ADHD. Is that something we should be concerned about and, if so, how can we go about preventing it?

Dr. Vitiello: It is a serious problem and I have faced it myself many times. Actually, I face it almost every time I see young adults or adults for an ADHD evaluation. The fact is that these drugs are performance enhancers even in people who don't have ADHD. This is a nontherapeutic use, it has not been approved by regulatory agencies, and it has not been studied systematically for safety. But the problem persists. I don't think there is currently a solution for it.

TCPR: The journal *Nature* published a survey from a group of scientists advocating the practice of using stimulants or modafinil for cognitive enhancement (Greely H et al., *Nature* 2008;456:702-705). What do you make of this?

Dr. Vitiello: In my opinion, this is a risky use of stimulants. Nontherapeutic use means that these people are taking the drug without medical supervision. They could have undiagnosed cardiovascular conditions, arrhythmias. We simply don't know. If we as a society arrive at the conclusion that this is an acceptable use of these substances, then we would need to study its safety and assess the benefit/risk balance.

TCPR: At one time we were concerned about stimulants possibly leading to substance abuse. What's the latest data on this?

Dr. Vitiello: There was a concern that exposing the developing brain to even therapeutic doses of stimulants would in some way imprint it so that in adulthood the user would be more prone to seek out and react positively to stimulants, therefore facilitating a process of substance abuse. The process, called “behavioral sensitization,” is a theory that has only been proven in animals. But there has been no human evidence that the therapeutic use of stimulants leads the brain to become stimulant-dependent. Moreover, some evidence suggests that if you control ADHD, you improve academic work, you reinforce good behavior, and there are fewer chances that the child will engage in substance abuse when he becomes an adolescent (Biederman J et al., *Am J Psychiatry* 2007;165:597-603).

TCPR: Thank you, Dr. Vitiello.



Prescribing and Dosing Stimulants: Practical Issues

Continued from Page 1

Studies have shown that community doctors tend to underdose adults with ADHD as well. In one survey, average dosing in the community was 30 to 40 mg/day of Concerta and 30 mg/day of Adderall XR. Compare these paltry doses to what clinical trials have found is most effective in adults: Concerta 80 mg/day and Adderall XR 60 mg/day (Olsson M et al., *J Clin Psychopharm* 2008;28(2): 255-257).

Meanwhile, anecdotal reports indicate that some patients, particularly adults who are overweight, require much higher doses. For example, Marc Schwartz and Nicholas Schwartz carried out a study of optimal stimulant dosing in their private practice and published the results on their website, www.adultadd.info. After reviewing the charts of

260 adult ADHD patients, they found that the average optimal daily doses were 67 mg/day for MPH, 53 mg/day for AMP, and 83 mg/day for Vyvanse (lisdexamfetamine), the newest stimulant. The maximum dose was more than 200 mg/day for all stimulants. These results have not been subject to the peer review process, but they are intriguing nonetheless—especially with their finding that Vyvanse requires significantly higher dosing (about 1.5 times higher) to have the same effect as its competitors.

Preventing stimulant abuse and diversion

All stimulants are controlled substances, meaning that they are classified by the Drug Enforcement Administration

(DEA) as schedule II, a category they share with other highly abusable drugs such as methadone and oxycodone. Such drugs cannot be refilled and can not be called into the pharmacy. This means that we have to require law-abiding citizens with genuine ADHD to come pick up a paper prescription every month, a chore for many patients. However, two years ago, on December 19, 2007, the DEA changed its rules to officially sanction a procedure common in medicine—namely, writing multiple sequential prescriptions of stimulants, up to a maximum of a 90-day supply. (You can read the final rule at <http://bit.ly/5IVgBp>.)

The new guidelines, however, do not allow you to actually “post-date” prescriptions. To designate prescriptions to

Continued on Page 6

be filled later, you must write the instructions for the pharmacist in the body of the prescription using wording such as “Do not fill before [date].” Thus, for example, if I see a patient on 1/1/2010, I could write out three sequential prescriptions of stimulants. All three would be dated “1/1/2010.” In the body of the first month’s script, I would simply write in the medication dose and instructions—no different from any standard prescription. In the second month’s script, somewhere below today’s date, I would add “do not fill before 2/1/2010,” and on the third month’s script I would write “do not fill before 3/1/2010.” Not all states have to agree with this federal ruling, and in states where the controlled substance laws are more restrictive, you may not be able to take advantage of the DEA’s new policy.

While the majority of patients do not abuse or divert their stimulants, every practice has a few who do. The red flag of stimulant abuse is when patients tell you that they need to fill a prescription

early. Typical reasons given are that the prescription was lost, was dropped into the sink, was stolen by a friend of the family, that the patient is going on a long trip and needs extra, etc. How to handle this will vary depending on your level of trust of the patient. A common strategy is to allow patients only one extra refill and to document that you informed them of this policy. Another technique is to tell all your patients on stimulants ahead of time that you will write no more than one prescription per month and will never make any exception.

Some completely innocent patients will complain, but unfortunately we have no way of knowing whether patients are being truthful or not. If a patient says: “Why don’t you trust me?” you can respond with some variant of, “I trust you, but it’s the drugs I don’t trust. I’ve seen too many patients get addicted to them, often with the best of intentions, and getting addicted to stimulants can cause too much damage to your life.” You can also point out to patients that

there is no dangerous withdrawal syndrome from stimulants—the worst that is likely to happen is some fatigue for a few days, and, of course, a return of the symptoms of inattention for which they are presumably being prescribed the medication.

The potential downside of this strict policy is that honest patients will be penalized for the unethical behavior of others. After all, patients with ADHD are by definition absent-minded and are particularly likely to misplace their scripts. In general, diversion of stimulants is more likely in adolescents (who might give or sell the drugs to classmates) and in lower income patients, who might need the money derived from selling prescription meds. Follow your instincts—if the patient is trustworthy, the reason for the early refill is believable, and the situation is documented in the chart, dispensing extra medication is defensible and will not get you into trouble with the DEA.



Research Updates IN PSYCHIATRY

Section Editor, Glen Spielmans, PhD

Glen Spielmans, PhD has disclosed that he has no relevant financial or other interests in any commercial companies pertaining to this article.

BIPOLAR-BORDERLINE

Borderline personality disorder often misdiagnosed as bipolar disorder

Are we misdiagnosing some patients with bipolar disorder? The rate of bipolar disorder diagnoses has increased notably in the past 15 years (Moreno C et al., *Arch Gen Psychiatry* 2007;64:1032-1039). In a recent report, researchers looked at data from a study of patients in a community-based outpatient setting (Zimmerman M et al., *J Clin Psychiatry*;69:935-940) to see whether symptoms of borderline personality disorder increased a person’s risk of being misdiagnosed with bipolar disorder. Researchers

asked 700 patients if they had ever been diagnosed with bipolar disorder. One hundred and forty five responded that they had, but a diagnostic interview confirmed bipolar disorder in only 63 patients (43.4%), meaning that over half of these patients (56.5%) had been falsely diagnosed as bipolar. Because there is substantial overlap between symptoms of borderline PD and bipolar disorder, the researchers then focused on 52 patients diagnosed with borderline PD. They found that a significantly higher percentage had been misdiagnosed with bipolar disorder (40%) when compared to those with disorders other than borderline PD (10%). Interestingly, misdiagnoses of bipolar increased with the number

of borderline PD symptoms a patient had, but this trend ceased when a patient met seven or more criteria (suggesting that at this point it is clear the patient has borderline PD and thus not misdiagnosed as bipolar disorder). (Ruggero CJ et al., *J Psychiatr Res* online ahead of print).

TCPR’s Take: Given that some symptoms (mood instability, anger/irritability, impulsivity, suicide attempts, and poor social functioning) are often seen in both borderline PD and bipolar disorder, these results are not surprising. The bottom line is that we should be careful to differentiate between these two similar conditions and that we should remember prior diagnoses are not always accurate.

CME Post-Test

To earn CME or CE credit, you must read the articles and complete the quiz below, answering at least four questions correctly. You will be given two attempts to pass the test. Please log on to www.thecarlatreport.com to take your CME test. As a subscriber to *TCPR*, you already have a username and password. For customer service, please call 978-499-0583 or email CME@thecarlatreport.com. Tests must be taken by December 31, 2010. This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the sponsorship of the Clearview CME Institute. Clearview CME Institute is accredited by the ACCME to provide continuing medical education for physicians. Clearview CME Institute is also approved by the American Psychological Association to sponsor continuing education for psychologists. Clearview CME Institute maintains responsibility for this program and its content. Clearview CME Institute designates this educational activity for a maximum of one (1) AMA PRA Category 1 Credit™ or 1 CE for psychologists. Physicians or psychologists should claim credit commensurate only with the extent of their participation in the activity.

Please identify your answer by placing a check mark or an X in the box accompanying the appropriate letter. Note: learning objectives are listed on page 1.

1. Because stimulants are controlled substances, the DEA dictates that physicians (Learning Objective #1):
 - a. May refill prescriptions by phone, but for no more than 3 months
 - b. Must write paper prescription, though 3 multiple sequential prescriptions are legal
 - c. Fax in all prescriptions to the pharmacy
 - d. Never, under any circumstances, replace lost or missing pills

2. Long acting stimulants for ADHD include (L.O. #2):
 - a. Ritalin LA
 - b. Adderall XR
 - c. Dexedrine SR
 - d. all of the above

3. Studies have shown that community doctors tend to underdose adults with ADHD (L.O. #1).
 - a. True
 - b. False

4. According to Dr. Benedetto Vitiello, which organization advocates for an EKG for all children for whom stimulants are considered (L.O. #3)?
 - a. The American Academy of Pediatrics
 - b. The American Heart Association
 - c. The American Academy of Child and Adolescent Psychiatry
 - d. The American Psychiatric Association

5. A recent study found that patients with symptoms of borderline personality disorder are at an increased risk of being misdiagnosed with bipolar disorder (L.O. #4).
 - a. True
 - b. False

PLEASE NOTE: WE CAN AWARD CME CREDIT ONLY TO PAID SUBSCRIBERS

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E-mail (REQUIRED FOR CME CERTIFICATES)

Your evaluation of this CME/CE activity (i.e., this issue) will help guide future planning. Please respond to the following questions:

1. Did the content of this activity meet the stated learning objectives? L.O.#1: Yes No L.O.#2: Yes No L.O.#3: Yes No L.O.#4: Yes No
2. On a scale of 1 to 5, with 5 being the highest, how do you rank the overall quality of this educational activity? 5 4 3 2 1
3. As a result of meeting the learning objectives of this educational activity, will you be changing your practice performance in a manner that improves your patient care? Please explain. Yes No

4. Did you perceive any evidence of bias for or against any commercial products? Please explain. Yes No

5. How long did it take you to complete this CME/CE activity? ___ hour(s) ___ minutes

6. **Important for our planning:** Please state one or two topics that you would like to see addressed in future issues.

Important CME information

Beginning with this issue, CME quizzes must be taken online. The CME test will remain in the print copy of the newsletter as a practice test and reference only. To receive CME credit, you will need to take the test on *The Carlat Psychiatry Report* website, at www.TheCarlatReport.com. As a subscriber, you already have member access to www.TheCarlatReport.com. You simply need to log in to take your test and print your certificate.

To get your login information, email us at CME@thecarlatreport.com. If you don't have computer access, call 978-499-0583 for instructions on taking your CME tests. Thank you.



January 2010

PAGE 8

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