

# ADHD and Comorbid Disorders



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# Comorbid disorders with ADHD:

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- ❑ CD & ODD
- ❑ Emotional and mood Dis, Anxiety Dis
- ❑ Bipolar Dis
- ❑ Specific learning Dis
- ❑ ASD
- ❑ Developmental coordination Dis
- ❑ Tic Dis, OCD
- ❑ Sub abuse
- ❑ Sleep Dis

# Comorbid disorders with ADHD:

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- In **childhood** 65 to 75 percent of children with ADHD have one or more comorbid conditions
- Many of these comorbidities continue into adolescence

# Comorbid disorders with ADHD

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## □ In adolescence:

*Academic and social problems, which erode his/her self-esteem and promote the gravitation to a negative peer group.*

# Comorbid disorders with ADHD

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Adolescents with untreated ADHD: (compared to peers with no mental disorder):

- ✓ **Threefold** increase in substance use and abuse
- ✓ More frequent delinquent acts
- ✓ Trouble with the law
- ✓ Increased rates of car accidents

# Comorbid disorders with ADHD

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## **Adolescents with ADHD:**

- ❑ Higher rates of Sexually Transmitted Diseases and unwanted pregnancy (starting sexual intercourse earlier with a higher number of sexual partners & greater frequency of unprotected sex)
- ❑ Increases the rate of depression and anxiety in adolescence due to many functional problems.

# Comorbid disorders with ADHD

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## Adults at the time of ADHD diagnosis:

- ❑ 42% had another active major psychiatric disorder.
- ❑ 38% had two or more other mental disorders.
- ❑ The diagnostic question is not, “**Is it one or the other?**” but rather “**Is it both?**”

# Comorbid disorders with ADHD

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## **Adults with ADHD:**

- ❑ May have an unhealthy lifestyle, with smoking, alcohol, drug abuse & risky sexual behavior
- ❑ chronic sleep problems (frequent)



# In adulthood, comorbidity is the rule

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## □ **The most common comorbidities:**

- ✓ Anxiety
- ✓ Depression
- ✓ Substance abuse
- ✓ Some personality disorders
- ✓ Gambling and other addictions are also frequently seen.

# Important!

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- The male/female ratio in children with ADHD can be 3–4:1, in adulthood it is 1:1.
- It is possible that many girls who tend to be less disruptive are not identified or referred in childhood but have significant impairment as adults and seek help then.

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# **Treatment of ADHD Comorbidities**

# Tic Disorder

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- **Stimulants** alone or in combination with **Clonidine, Guanfacine, Atomoxetine** appear to reduce ADHD symptoms in individuals with both ADHD and Tourette syndrome or tic disorders.
- Although stimulants have not been shown to worsen tics in most patients with tic disorders, they may exacerbate tics in some individual cases

# Tic Disorder

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## **In these instances:**

- ❑ Decreasing the dose of stimulants or treatment with  $\alpha$ -agonists or Atomoxetine
- ❑ Cognitive behavioral therapy (CBT) with the use of opposing muscle contractions

# Tic disorders

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- If mild or episodic, require no treatment
- If TS is as or more disabling than ADHD, medically manage it first (haloperidol, atypicals, antihypertensive)
- Although there is evidence that **Desipramine** is effective for both tics and ADHD in children, safety concerns will likely continue to limit its use in this population.

# Seizure Disorder

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- Although there are concerns about psychostimulants, particularly MPH, lowering the seizure threshold, experiencing a first seizure when starting a psychostimulant is extremely rare.

# Seizure Disorder

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- ❑ **Studies** (of EEG epileptiform activity, seizure rates, or interactions between antiepileptic drugs (AEDs) and psychostimulants ) **have not shown any additional seizure risk.**
- ❑ **On the contrary, studies have shown that children with ADHD and a seizure disorder that is adequately controlled on an AED show reduced ADHD symptoms and no change in seizure frequency.**



# Aggression, Oppositional Defiant Disorder, and Conduct Disorder.

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## 1- Pharmacotherapy

- ✓ Stimulants
- ✓  $\alpha$ -Blockers (guanfacine and clonidine) alone or as adjuncts to stimulants
- ✓ Stimulants also reduced negative social interactions and covert antisocial behavior (stealing and vandalism but not cheating)

# Aggression, Oppositional Defiant Disorder, and Conduct Disorder.

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## 2- Psychosocial treatments:

- ✓ Parent training
- ✓ Social skills training
- ✓ Anger management
- ✓ An appropriate academic program and support
- ✓ involvement of the criminal justice system.

# Anxiety Disorder

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- ❑ ADHD and anxiety may be less responsive to and experience more side effects with stimulant medication (Coughlin et al., 2015). T
- ❑ (MTA) did not find this to be the case.
- ❑ Children with ADHD and anxiety disorder seemed to benefit significantly from psychosocial treatment as well as medication.

# Anxiety Disorder

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- ❑ ADHD symptoms: slow and careful titration of **stimulant**
- ❑ Psychosocial treatments (parent training, social skills training, and/or CBT for the child combined with an appropriate academic program and academic support)
- ❑ Poor response: addition of SSRIs (fluoxetine or sertraline)

# Mood Disorder

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- ❑ In community samples:  
(MDD) in youth with ADHD is more than **five times** higher than in youths without ADHD.
- ❑ Depressive disorders usually occur several years after the onset of ADHD (cumulative effects of ADHD-related impairments and negative environmental circumstances).

# Mood Disorder

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## **Youths with depression and ADHD in compare of depression alone:**

- ✓ Greater levels of psychosocial impairment.
- ✓ Depressions start earlier, last longer
- ✓ More likely to recur
- ✓ Higher rates of suicides and hospitalizations.

## Treatment of ADHD and Major depression :

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- Combination of pharmacotherapy and psychosocial interventions
- Begin with the most effective medication for the most impairing condition for the patient

## Treatment of ADHD and Major depression:

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- After the full effect of this medication for both conditions: adding a second medication to deal with residual symptoms of the second condition.
- Thus, in some cases: both stimulants and SSRIs



## Treatment of ADHD and Major depression:

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Psychosocial interventions both for the:

- ❑ Depression (CBT)
- ❑ ADHD (organizational, study skills remediation, appropriate academic and/or vocational program)

# MDD & ADHD

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## **Use ADHD drug first if:**

- ❑ ADHD is chief complaint
- ❑ ADHD symptoms are more disabling
- ❑ MDD is mild: No current functional impairment from depression
- ❑ Neuro-vegetative signs are mild
- ❑ ADHD symptoms clearly preceded MDD symptoms

# MDD & ADHD

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## **Start with Antidepressant first if:**

- ❑ Clear History of non-response to ADHD drugs
- ❑ Prominent neuro-vegetative signs or health is compromised
- ❑ MDD symptoms are chief present complaint
- ❑ ADHD symptoms are mild, late onset, or coincident with MDD onset.
- ❑ Suicidal/Psychotic

# ADHD & BMD in adults:

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- **Approximately 20 percent of people with ADHD also suffer from bipolar disorder**
- **Approximately 60 to 70 percent of people with bipolar disorder also have ADHD**

# ADHD and BMD

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**Mood stabilizers and/or  
antipsychotics before stimulant  
treatment for Bipolar Disorder**

# BMD & ADHD

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- Requires poly-pharmaceutical management for long-term (mood stabilizers, atypicals, anticonvulsants)
- Often require periodic hospitalization for safety (suicidality or violence) and stabilization
- **Medical management of bipolarity should be done first before managing ADHD symptoms with ADHD drugs**

# Developmental Disorders

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- ❑ ADHD symptoms of inattention and hyperactivity are seen in children with Mental Retardation and ASD.
- ❑ Stimulants are effective for both groups (particularly in those with IQs greater than 50).

# Developmental Disorders

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RCT:

- ❑ MPH was more effective than placebo in reducing symptoms of ADHD in autism, while few effects on ASD symptoms.
- ❑ More adverse events of psychostimulants.



# Developmental Disorders

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- In severe side effects (severe agitation, irritability, fearfulness, or stereotyped behavior):

**Adding a low dose of second generation antipsychotic medication**

# Developmental Disorders (ASD)

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## **Other medications:**

- ❑ Atomoxetine: some positive effects on ADHD symptoms with little effect on ASD. Side effects are less problematic than stimulants.
- ❑ Some Anticonvulsants and guanfacine may be beneficial for the ADHD symptoms in these populations, there are not well-controlled trials to date.

# Sleep Disorders & ADHD

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- If severe, consider polysomnograms at a sleep lab
- Treating sleep disorder may improve attention at school

# Sleep Disorders & ADHD

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- ❑ Stimulants may cause insomnia (30-54% of cases):
  - ✓ Lower the dosage of stimulant
  - ✓ Consider short acting preparation
  - ✓ If insomnia is associated with hyperactivity , consider rebound effect and manage it
  - ✓ Consider ATX
  - ✓ Add medication which improve insomnia like: clonidine, melatonine, trazodone, mirtazapine and low doses of antipsychotics

# Sleep Disorders & ADHD

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- ❑ Advise parents to transition from highly stimulating activities to lesser ones before bedtime
- ❑ Keep low lighting on in room with background sounds (music)

# Disruptive Behavior Disorders

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- Both ADHD and CD are risk factors for SUDs
- Treatment of ADHD **does not exacerbate SUDs** (e.g., craving) and is likely protective against development of SUDs in adolescence

# ADHD & SUD

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- ❑ There is a bidirectional overlap between ADHD & SUD
- ❑ 15-25% of adults with both alcohol & drug addiction → current ADHD
- ❑ Cocaine dependent adults →  
strict criteria of ADHD(10%)

# ADHD vs CONTROL GROUP

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- Tobacco use: 2-3 times more
- Alcohol abuse or dependence: 3-8 times more
- Drug abuse or dependence: 3-8 times more



# ADHD & SUD

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- Adults with ADHD & SUD:
  - ✓ Earlier onset of substance abuse
  - ✓ More severe SUD
  - ✓ More frequent use
  - ✓ Higher rates of SUD  
( comorbidity of CD or Bipolar dis increase the risk)

# ADHD & SUD

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## **ADHD as a risk factor for SUD:**

- ❑ ADHD itself appears to be a risk factor for SUD
- ❑ CD or Bipolar dis + ADHD → poorest outcome with respect to developing SUD
- ❑ ADHD is a significant predictor for early cigarette smoking( before age 15)

# Predictors of SUD among adolescents with ADHD

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- √ Co morbid Bipolar Disorder
- √ Persistence of ADHD
- √ Co morbid disruptive disorders
  - Oppositional Defiant Disorder
  - Conduct Disorder
- √ Inattentive symptoms of ADHD

# ADHD & SUD

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- Mechanism of SUD in ADHD???
- ✓ Impaired judgment
- ✓ Impulsivity
- ✓ Aggression
- ✓ Self medication

# ADHD & SUD

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- Stimulant pharmacotherapy did not increase the risk for later SUD
- Stimulant pharmacotherapy protects against later SUD
- The effect was stronger in adolescents relative to adults

# ADHD & SUD

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- **The ultimate risk of SUD in treated ADHD individuals may approximate the risk in individual without ADHD**

# ADHD & SUD

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## □ **Suggestion:**

**IR formulation of MPH should not be prescribed in drug abusers and high risk populations as first choice.**

# Stimulant Therapy and Risk for SUDs in Adulthood

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**continued stimulant treatment may be necessary to reduce risk of SUDs in adulthood**



# Treatment

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- If the SUD is active, immediate attention needs to be paid to stabilization of the addiction
- Depending on the severity and duration of the SUD , they may require inpatient treatment
- SUD patients with ADHD require intervention for the ADHD

# Pharmacological treatment

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- Stimulants medications
- Nonstimulants medications
- Off-label antidepressant medications

# Lisdexamfetamine (Vyvanse)

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- Less abuse potential: longer acting, lower “likeability” rating than DEX, biologically inactive if snorted or used IV
- Lis-DEX 25 mg = DEX 10 mg

# Atomoxetine

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- Atomoxetine may be more suitable for this group of patients



