Management of ADHD in Medically Ill Children

Seyed Yaser Mousavi
Child and Adolescent Psychiatrist
Tehran University of Medical Sciences

Because ADHD is a common psychiatric condition in this age group, many children and adolescents with chronic medical conditions may have ADHD and be candidates for taking a treatment

Dexedrine & Adderall

- **Renal Impairment:** No dose adjustment necessary
- **Hepatic Impairment:** Use with caution
- **Cardiac Impairment:**
  - Use with caution, particularly in patients with recent myocardial infarction or other conditions that could be negatively affected by increased blood Pressure
  - Do not use in patients with structural cardiac abnormalities
- **Seizures:** Do not use in patients with uncontrolled seizure (as long as seizures are well controlled, it is generally safe to use stimulants)
- Use with caution in patients with any degree of **hypertension**, **hyperthyroidism**

- Before treatment:

- Assess for presence of cardiac disease (history, family history, physical exam)

- Blood pressure should be monitored regularly (sitting and standing)

- American Academy of Pediatrics does not recommend an ECG prior to starting a stimulant for most children

  – Cardiovascular adverse effects, sudden death in patients with pre-existing cardiac structural abnormalities (Usual dosing) often associated with a family history of cardiac disease

- **Contraindications**

- If patient has arteriosclerosis, cardiovascular disease, or severe hypertension

- If patient has glaucoma

- If patient has structural cardiac abnormalities

Atomoxetine

- Increased heart rate (6–9 beats/min)
- Increased blood pressure (2–4 mmHg)
- Rare priapism
- Severe liver damage (rare)
  - Causality has not been established
  - Atomoxetine should be discontinued in patients who develop jaundice or other evidence of significant liver dysfunction
- Cardiovascular adverse effects, sudden death in patients with pre-existing cardiac structural abnormalities (Usual dosing) often associated with a family history of cardiac disease

- **Hepatic Impairment:**
  - Moderate liver impairment: dose should be reduced to 50% of normal dose
  - Severe liver impairment: dose should be reduced to 25% of normal dose
- Increases risk of **seizures**
- **Renal Impairment:** Dose adjustment not generally necessary
- **Cardiac Impairment:**
  - Do not use in patients with structural cardiac abnormalities
  - Use with caution in patients with hypertension, tachycardia, cardiovascular disease, or cerebrovascular disease (can increase HR and BP)

- **Tests**
  - Blood pressure (sitting and standing) and pulse should be measured at baseline and monitored following dose increases and periodically during treatment
- **Drug Interactions**
  - Coadministration of atomoxetine and oral or IV albuterol may lead to increases in heart rate and blood pressure
  - Coadministration with methylphenidate does not increase cardiovascular side effects beyond those seen with methylphenidate alone
  - Use with caution with antihypertensive drugs

- **Contraindications**

- If patient has pheochromocytoma or history of pheochromocytoma

- If patient has a severe cardiovascular disorder that might deteriorate with clinically important increases in heart rate and blood pressure

- If patient has structural cardiac abnormalities

- If patient has angle-closure glaucoma

Lisdexamfetamine

- **Renal Impairment:**
  - Severe impairment: maximum dose 50 mg/day
  - End-stage renal disease: maximum dose 30 mg/day
- **Hepatic Impairment:** Use with caution
- **Cardiac Impairment:**
  - Use with caution, particularly in patients with recent myocardial infarction or other conditions that could be negatively affected by increased blood pressure
  - Do not use in patients with structural cardiac abnormalities
- **Seizures:** Do not use in patients with uncontrolled seizure (as long as seizures are well controlled, it is generally safe to use stimulants)

- **Tests:**

- Before treatment, assess for presence of cardiac disease (history, family history, physical exam)

- Blood pressure should be monitored regularly, sitting and standing (Palpitations, tachycardia, hypertension)

- American Academy of Pediatrics does not recommend an ECG prior to starting a stimulant for most children

- **Contraindications**

- If patient has arteriosclerosis, cardiovascular disease, or severe hypertension

- If patient has glaucoma

- If patient has structural cardiac abnormalities

- If patient has hyperthyroidism

Methylphenidate

- **Renal Impairment:** No dose adjustment necessary
- **Hepatic Impairment:** No dose adjustment necessary
- **Cardiac Impairment:**
  - Use with caution, particularly in patients with recent myocardial infarction or other conditions that could be negatively affected by increased blood pressure
  - Do not use in patients with structural cardiac abnormalities
- **Seizures:** Do not use in patients with uncontrolled seizure (as long as seizures are well controlled, it is generally safe to use stimulants)

- **Tests**

- Before treatment, assess for presence of cardiac disease (history, family history, physical exam)

- Blood pressure should be monitored regularly, sitting and standing

- The American Academy of Pediatrics (AAP) does not recommend an ECG prior to starting a stimulant for most children

- **Contraindications**

- If patient has glaucoma

- If patient has structural cardiac abnormalities

Clonidine

- **Renal Impairment:** Use with caution and possibly reduce dose
- **Hepatic Impairment:** Use with caution
- **Cardiac Impairment:**
  - Use with caution in patients with severe coronary insufficiency, conduction disturbances, recent myocardial infarction, or cerebrovascular disease
  - Use with caution in patients at risk for hypotension, heart block, and Bradycardia

- **Tests**

- Blood pressure (sitting and standing) and pulse should be measured at baseline and monitored following dose increases and periodically during Treatment

- **Contraindications**

- If there is a proven allergy to clonidine

- **Drug Interactions**

- If used with a beta blocker, the beta blocker should generally be stopped several days before tapering clonidine

- Excessive heat (e.g., saunas) may exacerbate some of the side effects, such as dizziness and drowsiness

- The likelihood of severe discontinuation reactions with CNS and cardiovascular symptoms may be greater when clonidine is combined with beta blocker

- Use of clonidine with agents that affect sinus node function or AV nodal function (e.g., digitalis, calcium channel blockers, beta blockers) may result in bradycardia or AV block

Risperidone & Aripiprazole

- **Renal Impairment:**

- Risperidone: Initial 0.5 mg orally twice a day for first week; increase to 1 mg twice a day during second week; dosage increases above 1.5 mg twice a day should occur at least 1 week apart

- Aripiprazole: Dose adjustment not necessary

- **Hepatic Impairment:**

- Risperidone: Initial 0.5 mg orally twice a day for first week; increase to 1 mg twice a day during second week

- Aripiprazole: Dose adjustment not necessary

- **Cardiac Impairment:** Use in patients with cardiac impairment has not been studied, so use with caution because of risk of orthostatic hypotension

- As with any antipsychotic, use with caution in patients with history of **seizures** (Rare)

- Patients with **low WBC** or history of drug-induced leukopenia/neutropenia should have CBC monitored frequently during the first few months

  – should be discontinued at the first sign of decline of WBC in the absence of other causative factors (if absolute neutrophil count falls below 1000/mm3)

- Risperidone should be used cautiously in patients at risk for aspiration pneumonia

- **Tests**
- **Before starting:**

- Plan to monitor weight and metabolic functions more closely than in adults

- Weigh all patients and monitor weight gain against that expected for normal growth, using the pediatric height/ weight chart to monitor

- Get personal and family history of diabetes, obesity, dyslipidemia, hypertension, and cardiovascular disease

- Get waist circumference (at umbilicus), blood pressure, fasting plasma glucose, and fasting lipid profile

- **After starting:**

- BMI monthly for 3 months, then quarterly

- Consider monitoring fasting triglycerides monthly for several months in patients at high risk for metabolic complications

- Blood pressure, FBS, fasting lipids within 3 months and then annually

- Even in patients without known diabetes, be vigilant for rare but life-threatening onset of diabetic ketoacidosis

- Monitoring elevated prolactin levels is of dubious clinical benefit (Dose-dependent hyperprolactinemia)

- Consider switching to another antipsychotic for patients who become overweight, obese, pre-diabetic, diabetic, hypertensive, or dyslipidemic

- **Contraindications**

- If there is a proven allergy to risperidone and Aripiprazole


Thank
you