Cardiovascular adverse effects of psychotropics: What to look for

Muhammad Hassan Majeed, MD, and Hafiza Ayesha Khalil, MD

Dr. Majeed is Attending Psychiatrist, Natchaug Hospital, Mansfield Center, Connecticut. Dr. Khalil is a PGY-1 resident, Department of Family Medicine, WellSpan Good Samaritan Hospital, Lebanon, Pennsylvania.

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Most patients who take psychotropic medications are at low risk for cardiovascular adverse effects from these medications, and require only routine monitoring. However, patients with severe mental illness, those with a personal or family history of cardiovascular disease, or those receiving high doses or multiple

Table

Cardiovascular adverse effects of psychotropic medications

Class/ Medication(s)	Common cardiovascular adverse effects	Comments
SSRIs	Minimal at therapeutic dosages	First-line agents for depressed patients with CVD. Serotonin syndrome is rare but requires prompt medical care
TCA: Amitriptyline	Abnormal heart rhythm, low BP, tachycardia, heart block	Check cardiac history. ECG is advised for patients at high risk
TCA: Imipramine	QTc prolongation	
SNRIs: Venlafaxine, duloxetine	Elevated BP, tachycardia	Monitor BP
SNRI: Mirtazapine	Weight gain	Hypercholesterolemia and kidney disease may increase cardiovascular risk
MAOI: Phenelzine	Weight gain, hypertension, hypertensive crisis	Hypertensive crisis usually requires medical attention
MAOI: Isocarboxazid	Congestive heart failure, hypertension	May mask chest pain of cardiac origin. Monitor BP and blood glucose
FGAs: Chlorpromazine, thioridazine, haloperidol	QTc prolongation, hypotension, NMS	Check vitals regularly. NMS requires emergency management
SGAs	Metabolic syndrome, QTc prolongation, Torsades de Pointes, orthostatic hypotension	
SGA: Clozapine	Myocarditis, cardiomyopathy	Order ECG, serum troponins, serum CK-MB if myocarditis is suspected
Mood stabilizer: Lithium	Weight gain, increased thirst, hypothyroidism	If cardiovascular risk factors are present, obtain ECG before starting lithium. Monitor serum calcium urea and electrolytes regularly
Stimulants: Methylphenidate, amphetamines	Fast, irregular, or racing heartbeat or pulse, hypertension, tachycardia	Check HR and BP. Consider obtaining an ECG in high-risk patients with a history of congenital or structural heart disease, syncope, chest pain, or sudden death in the family

Source: Reference 1

BP: blood pressure; CK-MB: creatine kinase-MB; CVD: cardiovascular disease; ECG: electrocardiogram; FGAs: first-generation antipsychotics; HR: heart rate; MAOI: monoamine oxidase inhibitor; NMS: neuroleptic malignant syndrome; SGAs: second-generation antipsychotics; SNRIs: serotonin–norepinephrine reuptake inhibitors; SSRIs: selective serotonin reuptake inhibitors; TCA: tricyclic antidepressant

medications are considered at high risk for morbidity and mortality from cardiovascular adverse effects. Such patients may need more careful cardiovascular monitoring.

To help identify important cardiovascular-related adverse effects of various psychotropics, we summarize these risks, and offer guidance about what you can do when your patient experiences them (***Table, page 54***).[1]

Antipsychotics and metabolic syndrome

Patients who take antipsychotics should be monitored for metabolic syndrome. The presence of 3 of the following 5 parameters is considered positive for metabolic syndrome[2]:

- fasting glucose ≥100 mg/dL or hemoglobin A_{1c} ≥5.6%
- blood pressure ≥130/85 mm Hg
- triglycerides ≥150 mg/dL
- high-density lipoprotein cholesterol <40 mg/dL in men or <50 mg/dL in women
- waist circumference ≥102 cm in men or ≥88 cm in women.

Stimulants and sudden cardiac death

Sudden cardiac death (SCD) in children and adolescents who take stimulants to treat attention-deficit/hyperactivity disorder is rare. For these patients, the risk of SCD is no higher than that of the general population.[3] For patients who do not have any known cardiac risk factors, the American Academy of Pediatrics does not recommend performing any cardiac tests before starting stimulants.[3]

Consider obtaining a baseline ECG for patients at high risk for cardiovascular adverse effects

References

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