
How to Interpret Lipid Panels

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Introduction. Like most psychiatric hospitals, yours probably has a policy requiring that you order a lipid panel and a diabetes screen on any patients taking an antipsychotic. While ordering these labs is straightforward, interpreting the results and understanding their implications is key, especially given the metabolic side effects associated with certain antipsychotic medications. This fact sheet delves into what lipid panels measure, why they're important for psychiatric patients, and how to use the results in clinical practice.

What is the Lipid Panel?

The lipid panel measures **cholesterol and triglycerides**. **Cholesterol** is a fat like substance found in every cell of the body and is essential for creating cell membranes, for producing hormones like testosterone and estrogen, for creating bile, and for synthesizing vitamin D when you are exposed to sunlight. The liver produces most of the cholesterol we need and we also consume it from animal-based foods. The bad side of cholesterol is that high levels are correlated with a higher risk of heart disease and stroke.

Elements of Lipid Panels

- **Total Cholesterol (Optimal: < 200 mg/dL):** Reflects all cholesterol in the blood, comprising LDL, HDL, and VLDL. The calculation formula is: Total Cholesterol = HDL + LDL + (Triglycerides/5). **Low-Density Lipoprotein (LDL) Cholesterol (Optimal: < 100 mg/dL):** The "bad" cholesterol, high levels of which can lead to atherosclerosis. Of particular concern for patients on antipsychotics that elevate LDL levels.
- **High-Density Lipoprotein (HDL) Cholesterol (Optimal: >60 mg/dL):** The "good" cholesterol helps remove other cholesterol forms from the bloodstream. Higher levels are protective against heart disease.
- **Triglycerides (Optimal level is < 150 mg/dL):** Triglycerides are a type of fat created by liver from excess calories, to be used for energy between meals. High levels are correlated with obesity, heart disease, and diabetes.

Reasons to Order Lipid Panels

- Evaluate heart disease and stroke risk, especially for patients with contributing risk factors.
- Monitor medication side effects, particularly for antipsychotics known to cause dyslipidemia.
- Select medications with minimal impact on lipid levels for patients with pre-existing dyslipidemia.

How to interpret results of a lipid panel

- **Ensure your patient was fasting:** Accurate results require 9 to 12 hours of fasting.
- **Evaluate Total Cholesterol:** Gives a broad sense of cardiovascular risk.
- **Assess LDL Levels:** Directly linked with cardiovascular disease, often the primary target for therapy.
- **Check HDL Levels:** Protective levels should be encouraged.
- **Consider Triglycerides:** Elevated levels necessitate lifestyle interventions or medication.
- **Look at Ratios:** The total cholesterol to HDL ratio can provide additional risk insight.

What should we tell our patients about the results?

- When you get any concerning results, go through them with your patient in detail, regardless of their current mental state. This is a great way of building rapport with patients who may feel vulnerable and resistant to treatment. It demonstrates that your care extends beyond their psychiatric symptoms to their overall well-being.

- Emphasize the need for followup care with their primary care provider (PCP). Highlight that lipid abnormalities are chronic conditions that, if left unaddressed, can lead to serious cardiovascular disease.

What action should a psychiatrist take when there is hyperlipidemia?

- **Consultation with medicine:** Addressing hyperlipidemia during hospitalization is critical, especially given that many psychiatric inpatients have poor outpatient follow-up. Initiating treatment while hospitalized can help demonstrate to patients that the therapy is manageable and encourage adherence after discharge.
- **Review metabolic profile of psychiatric medications and make changes when possible.**
 - The antipsychotics most likely to cause dyslipidemia include olanzapine, clozapine, and quetiapine.
 - Antipsychotics less likely to alter lipid levels include aripiprazole, asenapine, cariprazine, haloperidol, lurasidone, and ziprasidone.
 - Other psychiatric medications that may worsen lipid levels include: Certain mood stabilizers (like valproate and lithium), and some antidepressants (particularly older tricyclics and the SSRI paroxetine).
- **Reinforce long term interventions.** such as dietary changes, exercise, and taking lipid-lowering medications if prescribed by a medical consultant.
- **Monitoring:** It's recommended to monitor lipid levels every 2 months until goals are reached, then every 6-12 months.