

Bullet Point Nursing

Hyperlipidemia pharmacology

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Atherosclerosis

- Buildup of plaque in the arterial walls
- Increases risk of MI, CVA, PAD

Lipid Panel:

- Total cholesterol should be under 200
- Triglycerides should be under 150
- LDL should be under 100
 - Pharmacotherapeutic evaluation is based on LDL
- HDL should be over 50 in females and over 40 in males

First line treatment: Lifestyle modifications

- Decrease saturated fats and cholesterol
- Increase dietary fiber
- Increase exercise, reduce weight
- Quit smoking
- Control DM and HTN

Decision to start pharmacotherapeutics is based on LDL and sometimes on ASCVD

Drug class: HMG-CoA reductase inhibitors (statins)

- Drugs:
 - Atorvastatin (Lipitor)
 - Rosuvastatin (Crestor)
 - Simvastatin (Zocor)
- MOA: Inhibiting HMG-CoA reductase results in reduced LDL
- Indications: Hyperlipidemia and prevention of cardiovascular disease
- Not recommended in pregnancy
- First line agent for hyperlipidemia
- Avoid with grapefruit juice
- Preferred to be taken in the evening due to this is the time of cholesterol synthesis
- SE/AE: Hepatotoxicity, myopathy which can progress to rhabdomyolysis
- Dose is categorized by low, medium, and high
 - High dose statin reduces LDL by around 50%
 - Medium dose statin reduces LDL by around 30%-50%
 - Low dose statin reduces LDL by around 30%

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Drug class: Bile acid sequestrants

- Drug:
 - Cholestyramine
 - Colesevelam
- MOA: Increases loss of LDL through the feces
- Indications: Hyperlipidemia
- SE/AE: GI effects
- Patient education: Take an hour before or several hours after other medications

Drug class: Cholesterol absorption inhibitors

- Drug:
 - Ezetemibe (Zetia)
- MOA: Inhibits absorption of cholesterol
- Indications: Hyperlipidemia and off-label for prevention of cardiovascular disease
- SE/AE: Hepatitis and myopathy
- Mostly used as an add on to statin therapy, or when statins are not tolerated
- Not recommended in pregnancy

Drug class: Fibrates

- Drug:
 - Fenofibrate
 - Gemfibrozil (Lopid)
- MOA: lowers VLDL (triglycerides)
- Indications: Hypertriglyceridemia
- SE/AE: Myopathy, hepatotoxicity, increased risk of gallstones
- Not a first line agent
- Primarily lowers VLDL

Drug class: PCSK9 Inhibitors

- Drugs:
 - Alirocumab (Praluent)
 - Evolocumab (Repatha)
- MOA: Prevent the breakdown of LDL receptors for more LDL receptors to be working to reduce LDL
- Indications: Hyperlipidemia, prevention of cardiovascular disease
- Used as an alternative agent for monotherapy in patients that cannot tolerate statins
- Given by subcutaneous injection. Dosed every two or more weeks

Goal of therapy is to reduce the low density lipoproteins (LDL)

Niacin is no longer recommended for hyperlipidemia

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References

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