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SPEAKER 1: One of the biggest issues in cardiology is atherosclerosis and atherosclerotic plaque. Recent guidelines have shifted patients into risk categories for stand therapy. Most guidelines limit treatment of patients to younger than 65 years of age due to lack of evidence. But in reality, we frequently treat above this age group as each year we get more and more comfortable with medical, and even surgical treatments, in patients older than 75.

Interestingly, the newest US PTF guidelines have cited evidence of stand therapy in patients as young as 40. With recent recommendations allowing for lipid panel starting at age 20 and those at highest risk, such as familial dyslipidemia. Stands are, of course, the usual drug of choice for patients who need to lower their cholesterol. These drugs should be used based on risk profile side effect profile and of course, cost.

Every drug is metabolized differently, and therefore have different side effect profiles. These profiles are variable based on age, gender, and ethnicity. The most common concern we get are muscle aches and cramps.

The biggest danger, of course, being rhabdomyolysis. Fortunately this is incredibly rare. And it can be minimized with frequent LFT checking, monitoring for drug, drug interactions. And, of course, monitoring for drug supplement interactions as well.

A recent concern are the studies that suggest an increase in fasting glucose, but the risk of causing diabetes is still up for debate. The newest kid on the block are the PCSK9 inhibitors. LDL receptors, which are found throughout the body, bind circulating LDL uptake the particle. The LDL receptors are recycled back to the membrane for further LDL uptake. The PCSK9 binds to intracellular LDL receptors, and then the PCSK9 LDL complex is a target for breakdown.

With less LDL receptors on the membrane, there is less available LDL to the cell. Therefore, more LDL is available to the bloodstream and available for coronary endothelial cells to uptake. PCSK9 inhibitors, therefore, block the degradation of the LDL receptor, and allow for more uptake of LDL from the blood and eventual breakdown and degradation via the liver.

Clinical trials will have to show that lower cholesterol results will convey morbidity and mortality benefits. But for secondary prevention, lower cholesterol targets with a 50% reduction LDL for ACS patients has already been the standard. Patients will be scared with the injection, which can be every two to four weeks, depending on the formulation and the dosing, and typically will try to bargain with diet and exercise. I always recommend patients try to maintain a healthy lifestyle change.

Typically, the Mediterranean diet, which has been extensively studied, emphasizes fruits and vegetables and grains with a significantly less emphasis on meat and dairy products, and has been often cited as one of the heart healthy diets. But as the liver generally has an intrinsic LDL set point with dietary ingestion typically at 20% of total body cholesterol, diet and exercise alone may not be sufficient. Therefore, those patients who are different the control may need drug therapy. PCSK9 inhibitors will have to prove that their lowering LDL will have an effect on morbidity and mortality. But for now, at least, there is hope for some patients with refractory dyslipidemia.

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