Effective Health Care

Low Density Lipoprotein Cholesterol and Cardiovascular Health
Nomination Summary Document

Results of Topic Selection Process & Next Steps

- The topic, *Low Density Lipoprotein Cholesterol and Cardiovascular Health,* is not feasible for a full systematic review due to the limited data available for a review at this time.
- This topic could potentially be considered for new research in comparative effectiveness.

Topic Description

Nominator(s): Organization

Nomination Summary: Cardiovascular disease (CVD) is a leading cause of death worldwide, with more deaths attributed to this condition than any other. It is generally accepted that preventive measures such as behavioral modification (e.g., quitting tobacco use, adopting a healthy diet, increasing physical activity, staying under safe alcohol consumption limits) can reduce the risk of CVD. However, it is unclear whether monitoring cardiovascular biomarkers such as low density lipoprotein cholesterol (LDL-C) levels after initiating lipid-lowering therapy, and basing treatment changes on these levels, can help reduce risk of cardiovascular events better than fixed-dose lipid-lowering therapy. Thus, it is important to know whether treating to a specified LDL-C target can help improve patient outcomes such as cardiovascular events (CVE), and, if so, what target is most effective.

Staff-Generated PICO
Population(s): Patients at risk for cardiovascular events (CVE) on lipid lowering medications (primary or secondary prevention)
Intervention(s): Lipid-lowering treatment approach in which a standard intensity of therapy is used based on patient risk factors, treatment is not aimed at achieving a specific LDL-C target, and monitoring is not used to measure progress toward an LDL-C goal (standard intensity approach)
Comparator(s): Traditional lipid-lowering treatment approach aimed at achieving pre-determined LDL-C targets (treat-to-target approach)
Outcome(s): CVE (adverse cardiovascular outcomes), morbidity, mortality, adverse events, quality of life, clinical laboratory utilization

Key Questions from Nominator: Are clinical outcomes similar for patients when practice guidelines differ with regard to treatment of cardiovascular risk according to LDL-C targets? If so what LDL-C levels are recommended to reduce cardiovascular risk?

Revised Key Question:

What is the comparative effectiveness of treatment aimed at achieving various targets for LDL-C levels (treat-to-target approach) compared to empirical treatment using a standard intensity of therapy based on patient CVD risk factors (standard intensity approach) without an LDL-C target while on therapy in reducing cardiovascular risk?

Considerations

- The topic meets EHC Program selection criteria. (For more information, see http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/.)
- Cardiovascular disease (CVD) is currently the leading cause of death worldwide. High cholesterol, specifically high low-density lipoprotein cholesterol (LDL-C), is a risk factor for CVD. Data collected over multiple decades indicates a relationship between cholesterol modification, specifically lowering LDL-C levels, and primary and secondary prevention of cardiovascular events. Thus, reduction of LDL-C is a common and well-regarded method of prevention and treatment of CVD.
- A recent shift in recommendations for the prevention and treatment of CVD has brought up controversy on whether a new treatment approach, which determines use of lipid-lowering therapy choice and dosage (i.e., intensity) based on patient risk factors alone (standard intensity approach) or the traditional treat-to-target lipid-lowering approach (treat-to-target approach) is more effective in clinical practice.
- There is a lack of studies on the comparative effectiveness of lipid-lowering treatment based on patient risk factors only (standard intensity approach) versus the treat-to-target approach. Therefore, this topic is not feasible for a full systematic review due to the limited data available for a review at this time.

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