Treatment patterns and LDL-C goal attainment in patients with diabetes: temporal trends analysis from National Health and Nutrition Examination Survey (NHANES)

Peter P. Toto, Karin M. Hennekson, Michael K. Palmer

Background

• CVD is also known to be the most prevalent cause of morbidity and mortality in this high-risk patient population.
• Elevated LDL-C is also a well-established risk factor for CVD, and a number of guidelines recommend lowering LDL-C to reduce CVD risk.
• In particular, in individuals with diabetes, several guidelines recommend reducing LDL-C to <100 mg/dL, with some recommending an LDL-C treatment target as low as <70 mg/dL in this high-risk patient population.
• Furthermore, according to the 2013 ACC/AHA blood cholesterol guideline, individuals with diabetes aged 40–75 years are considered candidates for statin therapy, with the recommended statin treatment intensity based on an individual's estimated 10-year CVD risk.
• Using NHANES data extrapolated to the US population, we aimed to estimate the prevalence of diabetes, and the statin treatment patterns in this patient population over five 2-year periods (2003–2012).

Methods

• NHANES: NHANES is a major program of the National Center for Health Statistics, which is part of the Centers for Disease Control and Prevention. It is designed to assess the health and nutritional status of the US population.
• Each year, the survey examines a nationally representative sample of the US population.
• Combining data from all five surveys, diabetes was consistently more prevalent with women.
• These results highlight the importance of identifying and adequately treating hypercholesterolemia in this high-risk patient population.
• However, hypercholesterolemia is still undertreated in this high-risk patient population. This is particularly true for women, around 60% of whom (7 M) are estimated to have LDL-C ≥100 mg/dL, compared with around 50% (6 M) of men.
• Moreover, approximately 9 M US adults with diabetes who have LDL-C ≥100 mg/dL are not receiving any lipid-lowering medication.
• These results highlight the importance of identifying and adequately treating hypercholesterolemia in this high-risk patient population.

Results

• From 2003–2004 to 2011–2012, the estimated prevalence of diabetes among US adults increased by approximately 8 million (M), from 22.1 M to 30.3 M (Figure 1).
• The proportion of US adults with diabetes achieving an LDL-C goal of <100 mg/dL has increased from 38% (7.5 M) in 2003–2004 to 50% (13.8 M) in 2011–2012 (Figure 3).
• The proportion of US adults with diabetes achieving an LDL-C goal of <100 mg/dL has increased with the increased use of statin therapy.
• Moreover, hypercholesterolemia is still undertreated in this high-risk patient population. This is particularly true for women, around 60% of whom (7 M) are estimated to have LDL-C ≥100 mg/dL, compared with around 50% (6 M) of men.
• The percentage of US adults with diabetes achieving an LDL-C goal of <100 mg/dL also increased from 38% (7.5 M) in 2003–2004 to 50% (13.8 M) in 2011–2012 (Figure 3).
• The percentage of US adults with diabetes achieving an LDL-C goal of <100 mg/dL also increased from 38% (7.5 M) in 2003–2004 to 50% (13.8 M) in 2011–2012 (Figure 3).

Conclusions

• Combining data from all five surveys, diabetes was consistently more prevalent with women.
• Additionally, a greater percentage of men were on lipid-lowering therapy (51% vs 45%) and achieved an LDL-C goal of <100 mg/dL (53% vs 43%) compared with women.

Disclosures

• All authors report no conflicts of interest.

References

4. Toto P, et al. AstraZeneca Gothenburg, Mölndal, Sweden, and Department of Medical Sciences, Uppsala University, Uppsala, Sweden; Preventive Cardiology, CGH Medical Center, Sterling, IL, USA; Ciccarone Center for the Prevention of Cardiovascular Disease, Johns Hopkins University School of Medicine, Baltimore, MD, and Preventive Cardiology, CGH Medical Center, Sterling, IL, USA; Astrapfarma Gothenburg, Mölndal, Sweden, and Department of Medical Sciences, Uppsala University, Uppsala, Sweden.
6. US: United States
7. LDL-C: low-density lipoprotein cholesterol
8. AHA: American Heart Association

Figure 1. Estimated prevalence of diabetes in the US from 2003–2004 to 2011–2012

Figure 2. Estimated proportion of US adults with diabetes receiving statin therapy

Figure 3. Estimated proportion of US adults with diabetes attaining an LDL-C goal of <100 mg/dL

Figure 4. Estimated number of US adults with diabetes and LDL-C ≥100 mg/dL and not receiving lipid-lowering medication

Figure 5. Estimated proportion of US adults with diabetes achieving an LDL-C goal of <100 mg/dL, also increased from 38% (7.5 M) in 2003–2004 to 50% (13.8 M) in 2011–2012 (Figure 3).

Figure 6. Estimated number of US adults with diabetes and LDL-C ≥100 mg/dL and not receiving lipid-lowering medication

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