YOU DECIDE

EVIDENCE SUMMARY

Statins in the Older Adult

Remember – the elderly have a decreased ability to eliminate medications. While you may be reviewing a specific medication, it's the concomitant use of multiple medications that increases the risk of side effects and drug interactions.

The Context – it is important to consider frailty and life expectancy when determining goals of care for the elderly living in residential care and community dwellings.

EVIDENCE FOR USE

BENEFITS IN PATIENTS OVER THE AGE OF 65 – data for people over age 80 are minimal

In primary prevention over 3.5 years:
~98% see no benefit
1.2% avoid MI
0.7% avoid stroke

In secondary prevention over 5 years:
~92% see no benefit
2.5% avoid MI
2% avoid stroke
3% avoid death

In more detail…

		Placebo (%)	Statin (%)		
	Outcome	EVENT RATES – 3.5 years		Risk Diff (%)	NNT (3.5 yr)
Primary prevention (over age 65)[1,2]	MI*	3.9	2.7	1.2	83
	Stroke*	2.8	2.1	0.7	142
	Overall mortality	Not statistically different			
	Outcome	EVENT RATES – 5 years		Risk Diff (%)	NNT (5 yr)
Secondary prevention (typically previous coronary heart disease; over age 65)[3]	Non-fatal MI*	10	7.5	2.5	40
	Stroke*	7	5	2	50
	Overall mortality	19	16	3	33

[1] Gianluigi Savarese et al., "Benefits of statins in elderly subjects without established cardiovascular disease," *Journal of the American College of Cardiology* 62 no. 22 (2013):2090-9. doi:10.1016/j.jacc.2013.07.069

[2] Gianluigi Savarese et al., "Benefits of statins in elderly subjects without established cardiovascular disease [Correction]," *Journal of the American College of Cardiology* 63 no. 11 (2014):1122. doi:10.1016/j.jacc.2014.02.534

[3] Jonathan Afilalo et al., "Statins for secondary prevention in elderly patients: A hierarchical Bayesian meta-analysis," *Journal of the American College of Cardiology* 51 no. 1 (2008):37-45. doi:10.1016/j.jacc.2007.06.063

* not all cardiovascular events are importantly symptomatic or disabling

HARM – Most RCTs report the incidence of adverse effects is no different between statins and placebo but there is uncertainty regarding patients with multiple conditions who are frail and on multiple medications.

Two specific areas to mention:

1. Risk of type 2 diabetes – A recent systematic review reported that statins appear to increase the risk by 0.5%[4]. However, the current thinking is that statins reduce the risk of cardiovascular disease by a greater degree, which is the main reason we treat type-2 diabetes.[5]
2. Muscle-related symptoms – Many real-world patients on statins report muscle-related symptoms and the true incidence is unknown and debated and, while it is believed to be around 10%, concerns remain for patients who already have musculoskeletal conditions and reduced mobility.

Practice Points

- In theory, because the frail elderly are at a higher baseline CVD risk, the benefit of using a statin in this population may be more but there are no studies that have looked at this – in addition harms may also be common (see event rates above).
- Low-moderate doses (10-20mg) of statins produce the majority of the cardiovascular benefit.[6] High dose is usually atorvastatin 80mg. Low-moderate dose varies: pravastatin 40 mg to lovastatin 5mg.
- It is unknown if one should start with a low-dose and then increase the dose, or start at a high-dose and reduce the dose if side effects occur - but 'start low, go slow' is the maxim
- Some recent guidelines continue to support target cholesterol numbers, recognizing the evidence for benefit and harm to a patient and the importance of involving them in the decision making process.[7]
- If unexplained muscle pain occurs, a trial off a statin is warranted, as a 1-2 month period off drug confers at most a 0.1-0.2% CVD risk, even if it is being used for secondary prevention
- Review the use of a statin in the residential care environment in the context of life expectancy and goals of care, as well as from the perspective of the potential aggregation of adverse effects from multiple meds that may affect mobility/function and quality of life…is the benefit greater than the potential harm?

[4] Judith A. Finegold et al., "What proportion of symptomatic side effects in patients taking statins are genuinely caused by the drug? Systematic review of randomized placebo-controlled trials to aid individual patient choice," *European Journal of Preventive Cardiology* 21 no. 4 (2014):464-74. doi:10.1177/2047487314525531

[5] Alberta College of Family Physicians, "Statin-induced diabetes: Too sweet a deal?," ed. G. Michael Allan, *Tools for Practice* (2013). http://www.acfp.ca/wp-content/uploads/tools-for-practice/1397841808_20130527_014005.pdf.

[6] Alberta College of Family Physicians, "How does high dose statin compare to low dose in people with heart disease," ed. G. Michael Allan, *Tools for Practice* (2012). http://www.acfp.ca/wp-content/uploads/tools-for-practice/1397838022_20120522_090852.pdf.

[7] Sheldon W. Tobe et al., "Canadian Cardiovascular Harmonized National Guidelines Endeavour (C-CHANGE): 2014 update," *Canadian Medical Association Journal* 186 no. 17 (2014):199-1305. doi: 10.1503/cmaj.140387