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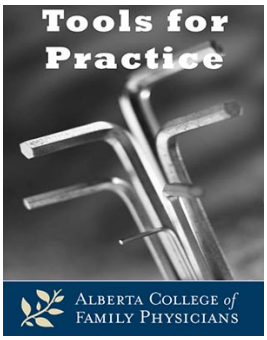

Treating to Target: Can we hit the mark?

Clinical Question: Is it possible to achieve guideline-specified targets of surrogate markers (cholesterol, blood pressure, glycosylated hemoglobin) in primary care?

Bottom-line: Even in ideal settings with highly selected patients, less than 25% of patients achieve multiple targets for surrogate markers. However, clinical outcomes improve when proven interventions (examples statins, metformin, ACE inhibitors, thiazides) are used without necessarily achieving targets. Clinicians should "worry" less about attaining exact surrogate marker targets and focus more on using proven therapies.

Evidence:

- Multiple cohort studies show primary care patients do not achieve surrogate marker targets.
  - 1,706 diabetic patients: 7.3% achieved three targets [HbA1c <7, blood pressure (BP) <130/80, and total cholesterol <5.18mmol/L].[1]
  - 1,701 Canadians: 24% of treated patients had LDL <2mmol/L.[2]
  - 3,167 coronary heart disease (CHD) patients: 16% met three targets (BP <130/80-85, LDL <2.2 mmol/L, and ASA use).[3]
- Randomized Controlled Trials (RCTs) have found it difficult to achieve these targets (despite intense care, maximum doses, and multiple therapies).
  - <50% attain LDL <2mmol/L on maximum statin dose [meta-analysis of seven RCTs, 29,395 patients].[4]
  - ~23% patients achieved all four targets (LDL <2.5 mmol/L, systolic BP <130 mmHg, HbA1C <7, and not smoking) in three RCTs (5,034 patients) of diabetics with CHD.[5]
  - STENO, target RCT of 160 diabetic patients: At 13 years, 1% hit all five targets (HbA1c <6.5%, total cholesterol <4.5mmol/L, triglyceride <1.7mmol/L, BP <130/80).[6]
- Despite not hitting targets, proven therapies improve clinical outcomes.
  - Statins reduce CHD [for example Number Needed to Treat (NNT) of 27 for low-moderate dose and 91 for high-dose over low-dose in CHD patients].[7]

- In STENO, the intensive group received more proven therapies (examples statins, ACE-inhibitor, and metformin) and had improved outcomes like reduction in death (NNT 5) and cardiovascular disease (NNT 4).[6]

Context:

- Recommendations in cardiovascular guidelines, including targets, are primarily based on expert opinion (~50%) and lower-level evidence (~40%), not RCTs.[8]
- Multiple comorbidities are common in primary care, particularly in older adults, but rare in clinical trials/guidelines, making application difficult.[9-11]
- Some newer guidelines are relaxing (hypertension[12] and diabetes[13]) or removing targets (cholesterol).[14]

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