

Role of Intensive Glucose Control in Development of Renal End Points in Type 2 Diabetes Mellitus

Coca et al examined the effect of intensive glycemic control vs conventional glucose control on renal outcomes in patients with type 2 diabetes mellitus through a systematic literature review and meta-analysis. While intensive glycemic controls appear to reduce the risk of development of microalbuminuria and macroalbuminuria, evidence is lacking that they reduce the risk of significant clinical renal outcomes such as doubling of creatinine level, end-stage renal disease, or death from renal disease during the follow-up years of the trials. The authors explore several reasons for these findings.

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Subclinical Hyperthyroidism and the Risk of Coronary Heart Disease and Mortality

Collet et al combined individual data on 52 674 participants from 10 prospective cohort studies in the United States, Europe, Brazil, and Australia. At baseline, 2188 (4.2%) participants had subclinical hyperthyroidism. During follow-up, 8527 participants died (including 1896 from coronary heart disease [CHD]), 3653 had CHD events, and 785 developed atrial fibrillation (AF). In age- and sex-adjusted analyses (hazard ratio; 95% CI), subclinical hyperthyroidism was associated with increased total mortality (1.24; 1.06-1.46), CHD mortality (1.29; 1.02-1.62), CHD events (1.21; 0.99-1.46), and AF (1.68; 1.16-2.43). Risks for CHD mortality and AF increased with lower thyrotropin levels, and were highest among those with a thyrotropin level lower than 0.10 mIU/L (for both, *P* value for trend, $\leq .03$). These findings of increased risks of total mortality, CHD mortality, and AF associated with subclinical hyperthyroidism, with greater risks of CHD mortality and AF among those with a thyrotropin level lower than 0.10 mIU/L, are consistent with recent treatment guidelines for subclinical hyperthyroidism.

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Drug, Patient, and Physician Characteristics Associated With Off-label Prescribing in Primary Care

Off-label use may lead to adverse drug events. Little is known about its prevalence and determinants owing to challenges in documenting treatment indication. The Medical Office of the XXI Century electronic health record network, where documentation of treatment indication is a mandatory requirement, was used to assemble 253 347 electronic prescriptions written for 50 823 patients by 113 physicians from January 2005 through December 2009. Off-label use and the strength of evidence for off-label use were determined using the Health Canada drug database and DrugPoints, respectively. The prevalence of off-label use was 11.0%, and 79% lacked strong scientific evidence. Off-label use was highest for anticonvulsants (66.6%), antipsychotics (43.8%), and antidepressants (33.4%). Women, younger adults, less sick patients, and older drugs had greater off-label use. Physicians with evidence-based orientation were less likely to prescribe off label. Off-label prescribing is common and varies by drug and patient and physician characteristics. Electronic health records should link treatment indication with drugs to monitor off-label use.

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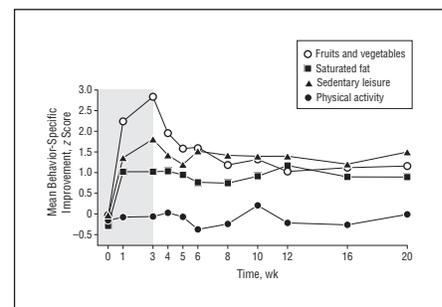
A Randomized Controlled Trial of Telemonitoring in Older Adults With Multiple Health Issues to Prevent Hospitalizations and Emergency Department Visits

To compare daily home telemonitoring (with biometrics, symptom reporting, and videoconference) vs usual care in older adults at high risk for hospitalization, Takahashi et al conducted a randomized trial of adults older than 60 years with multiple medical issues. Patients received either daily telemonitoring or usual care for 1 year; 205 subjects with a mean age of 80.3 years were randomized. The authors found that 63.7% of subjects in telemonitoring were hospitalized or had an ED visit compared with 57.3% in usual care (*P* = .35). The findings were also nonsignificant when evaluated for individual outcomes of hospitalization or ED visit. These nonsignificant findings indicate a need for potentially greater practice change or infrastructure to allow telemonitoring to be effective.

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Multiple Behavior Changes in Diet and Activity

Sprong et al conducted a 6-month randomized clinical trial to test which combination of diet and activity advice yields the greatest overall improvement. Adults (N = 204) with elevated saturated fat and low fruit and vegetable intakes, high sedentary leisure, and low physical activity were randomized to 1 of 4 treatments: increase fruit and vegetable intake and physical activity; decrease fat intake and sedentary leisure; decrease fat intake and increase physical activity; and increase fruit and vegetable intake and decrease sedentary leisure. Treatments provided 3 weeks of distance coaching supported by mobile decision support technology and financial incentives. The outcome was composite improvement on the 4 diet and activity behaviors. Targeting fruit and vegetable intake and sedentary leisure improved diet and activity more than other interventions, and differences between treatment groups were maintained through follow-up.



Mean standardized improvement in each behavior produced by increasing fruit and vegetable intake and decreasing sedentary leisure. The treatment improved both targeted behaviors (fruits/vegetables and sedentary leisure) and 1 untargeted behavior (saturated fat).

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