Incidence of Cardiovascular Events Following Hospital Admission for Pneumonia  
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BACKGROUND: Studies suggest an increased risk of cardiovascular events, primarily acute myocardial infarction, around the time of hospital admission for pneumonia. Therefore we examined incident cardiovascular events, including myocardial infarction, congestive heart failure, unstable angina, stroke, and serious cardiac arrhythmias, within 90 days after hospitalization for pneumonia.

METHODS: Using data from the administrative databases of the Department of Veterans Affairs, we examined a cohort of subjects hospitalized with pneumonia between October 2001 and September 2007. Subjects were at least 65 years of age. We examined the incidence of an inpatient diagnosis of myocardial infarction, congestive heart failure, cardiac arrhythmias, unstable angina, and stroke by ICD-9 codes excluding those with the same diagnosis prior to the admission for pneumonia.

RESULTS: The cohort comprised 50,119 subjects with a mean age of 77.5 years (standard deviation 6.7 years), and 98% of the cohort was male. The 90-day incidence of cardiovascular events was 1.5% for myocardial infarction, 10.2% for congestive heart failure, 9.5% for arrhythmia, 0.8% for unstable angina, and 0.2% for stroke. The majority of events occurred during the initial hospitalization for pneumonia.

CONCLUSION: A clinically important number of subjects in this cohort suffered a cardiovascular event within 90 days of hospital admission, suggesting that such events may have an important role in post-pneumonia mortality. Additional research is needed to determine whether interventions may reduce cardiovascular events after pneumonia.
Effects of smoking cessation and weight change on cardiovascular disease among people with and without diabetes Carole Clair 1; Nancy A. Rigotti 2; Peter Shrader 1; Caroline 1; Michael S. FoxPencina 3; James Meigs4. 1Massachusetts General Hospital, Boston, Massachusetts; 2Harvard Medical School, Boston, Massachusetts; 3Boston University NHLBI’s Framingham Heart Study, Boston, Framingham, Massachusetts, Massachusetts; 4General Medicine Division, Massachusetts General Hospital, Boston, Massachusetts. (Proposal ID # 8487)

BACKGROUND: Smoking cessation substantially reduces the risks of cardiovascular disease (CVD) associated with smoking among people with and without diabetes. Weight gain that follows quitting smoking may weaken the benefit of quitting on CVD risk. We have tested this hypothesis in this study.

METHODS: Among participants of the Framingham Offspring Study who were free of CVD at each baseline, we estimated 4-year risk of CVD. At each 4-year exam, self-reported smoking status (non smoking, former smoking, current smoking) was verified, diabetes (defined as fasting plasma glucose >= 7 mmol/l or being on diabetes treatment) was screened and body-weight and height were measured; we calculated change in weight and in body-mass index (BMI) from the previous exam. We used three pooled logistic regression models to estimate the 4-year risk of CVD associated with smoking and diabetes status at each baseline. Model 1 adjusted for age and sex; model 2 added confounders (BMI, alcohol consumption, family history of diabetes, systolic blood pressure, HDL-cholesterol, LDL-cholesterol, triglycerides, use of anti-hypertensive or lipid-lowering medication), and model 3 added change in BMI concomitant with change in smoking status to assess its potential mediating effect on CVD. Significance was p < 0.05.

RESULTS: 3,142 subjects (mean age, 44 years; 52% female) were followed over 6 exams, about every 4 year, for a mean of 25 years, contributing 17,875 person-exams. Smoking prevalence decreased from 37% at the first baseline exam to 13% at the last baseline exam. Age- and sex- adjusted 4-year incidence rates of CVD were higher among smokers vs. former smokers or non smokers in people with and without diabetes (Figure 1). On average, 4-year weight gain was lower in smokers vs. non smokers (1.21 kg vs. 1.46 kg, p=0.02) whereas it was similar between former smokers and non smokers (1.45 kg vs. 1.46 kg, p=0.16). In multivariable-adjusted analysis, smokers had higher risks of developing CVD than non smokers whether or not they had diabetes. Former smokers did not have a significantly higher risk of developing CVD than non-smokers, although significant trends across smoking categories, both among people with diabetes (P=0.02) and those without diabetes (P<0.0001) suggested a dose response phenomenon. Adjusting for change in BMI did not decrease the risk estimates, suggesting that post-cessation weight change does not mediate the increase risk of CVD among both people with and without diabetes (Table 1).

CONCLUSION: Post-cessation weight gain does not alter the benefits of quitting smoking on CVD risk in people with and without diabetes.
BACKGROUND: With eleven classes of glucose-lowering medications available for the treatment of type 2 diabetes, clinical practice guidelines help inform treatment decisions. We conducted a systematic review of clinical practice guidelines addressing glucose-lowering pharmacologic therapies for type 2 diabetes to assess the quality of methods and whether they incorporate available evidence.

METHODS: We searched 2 general electronic databases (MEDLINE and Cumulative Index to Nursing & Allied Health Literature), 3 guideline-specific databases from the U.S., Canada and United Kingdom, and hand-searched the websites of 15 professional and guideline development organizations from July 2007 to March 2010. We chose this time frame because the field of diabetes is rapidly evolving and in July 2007, the Agency for Healthcare Research and Quality published a large comparative effectiveness systematic review on diabetes medications. Titles and abstracts were assessed by 2 independent reviewers, and data abstracted sequentially by 2 reviewers. Using the 2007 review, we developed a list of 7 evidence-based conclusions and then assessed whether the guidelines addressed and endorsed these conclusions. We also assessed the basis for their recommendations. Two independent reviewers rated guideline quality using the “Rigor of Development” (Rigor) and “Editorial Independence” (Independence) domains from the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument. The kappa score for agreement on quality items was 0.60.

RESULTS: Of the 609 titles identified, 12 guidelines, including 3 updates, contained in 20 different publications, met our inclusion criteria. Six guidelines were peer reviewed and the majority used a combination of expert opinion and literature review, including use of published systematic reviews to make recommendations. Eight guidelines agreed with the conclusion from the 2007 review that metformin is favored as first line agent. However, the two guidelines from the Joslin Clinic did not favor any one drug over another. Ten guidelines endorsed the conclusion that thiazolidinediones are associated with higher rates of edema and congestive heart failure. Two guidelines did not address any of the 7 evidence-based conclusions, and 3 guidelines endorsed all seven conclusions. In the “Rigor” domain, two guidelines received the highest score (4 on a scale of 1-4) for the item, “systematic methods used to search for evidence” and three for the item, “clearly described methods for formulating recommendations.” The range in the “Rigor” domain summary scores (0%=lowest to 100%=highest) was 14-100%. The National Institute for Health and Clinical Excellence guideline was the only guideline to receive the maximum score. In the “Independence” domain, 5 guidelines received the highest score for the item, “conflicts of interest of...members have been recorded.” The range in this domain’s summary scores was 8-100%. The Canadian Diabetes Association was the only guideline to receive the maximum score.

CONCLUSION: Clinical practice guidelines on pharmacologic treatment of type 2 diabetes were generally consistent with available evidence. Few guidelines used rigorous guideline development methods, including systematic searches for evidence, peer review prior to publication, and recording of conflicts of interest by group members. Professional organizations need to advocate for more consistent standards to improve guideline quality.
A Clinical Risk Index for Long Term Survival of Hospitalized Older Patients Kala M. Mehta 1; Edgar Pierluissi 1; W. John Boscardin 1; Katharine A. Kirby 1; Louise C. Walter 1; Mary-Margaret Chren 2; Robert M. Palmer 3; Steven Counsell 4; C. Seth Landefeld 1. 1Division of Geriatrics, University of California, San Francisco, San Francisco, California ; 2Department of Dermatology, University of California, San Francisco, San Francisco, California ; 3Division of Geriatric Medicine and Gerontology, University of Pittsburgh, Pittsburgh, Pennsylvania ; 4Indiana University Center for Aging Research and Department of Medicine, Indiana University School of Medicine, Indianapolis, Indiana . (Proposal ID # 11099)

BACKGROUND: Predicting long term survival in hospitalized older adults may help guide decision-making for patients, families and clinicians. There are no long-term prognostic indices for this population. Thus, our objective was to develop and validate a clinical index for older, hospitalized adults in a cohort with near-complete mortality data up to 15 years.

METHODS: We developed this prognostic index in 1482 patients >=70 years discharged from the general medical service of a teaching hospital (mean age, 79.6 years; 61% female) and validated it in 1564 similar patients discharged from another teaching hospital (mean age 80.5 years, 67% female). All patients were followed until death or 10 years after discharge. Independent predictors of mortality were examined using Kaplan-Meier survival analysis. The clinical index was identified using multiple Cox proportional hazards analyses with a best subsets method of variable selection.

RESULTS: The cumulative incidence of death at 1, 5, and 10 years was 30%, 66%, and 86%, respectively. In the development group, independent (p,0.01) risk factors for death were older age; male gender; >=2 dependent activities of daily living (ADL) at hospital discharge; body mass index<=18; chronic kidney disease; congestive heart failure; chronic lung disease; cancer; and severe cognitive impairment. A clinical risk index with these risk factors stratified patients according to risk of death (Table 1).

CONCLUSION: Using clinical information at hospital discharge, this risk index accurately stratified hospitalized older adults according to their risk for death over 10 years. Risk for death over time differed greatly according to the clinical index: few patients with low predicted risk died in one year, and almost all patients with high predicted risk had died by 10 years.
Comparative effectiveness trial of family-supported smoking cessation intervention versus standard telephone counseling for chronically ill veterans Lori A. Bastian 1; Laura J. Fish 1; Jennifer M. Gierisch 1; Lesley Rohrer 2; Karen M Stechuchak 4; Steven Grambow 1. 1Duke University, Durham, North Carolina ; 2Durham VA, Durham, North Carolina . (Proposal ID # 12048)

BACKGROUND: A chronic illness diagnosis may motivate some veterans to quit smoking, however, it may not be sufficient. Smoking initiation, maintenance, and cessation are strongly influenced by family members and close contacts. Thus, for chronically ill veteran smokers, a family-supported smoking cessation intervention may be more effective than a standard telephone counseling intervention.

METHODS: Smokers willing to make a quit attempt in the next 30 days who had cancer, cardiovascular disease, or other chronic diseases (i.e., diabetes, COPD, hypertension) were proactively recruited from the Durham VA and randomly allocated into two groups: standard telephone counseling (n=236) or family-supported telephone intervention (n=235). Both groups received letters from VA physicians encouraging patients to quit smoking and a self-help cessation kit. Both groups were offered nicotine replacement therapy (NRT), if not contraindicated. Participants were surveyed at baseline and 5-months post-baseline. The main outcome was 7-day point prevalent cessation at 5 months. We counted participants not completing the 5 month interview (n = 66) as smokers.

RESULTS: The mean age was 59, 51% has a high school education or less, 42% were African American, 8% were female, and 55% were married or living as married. Forty three percent had heart disease, 34% had cancer, and 23% had other chronic diseases. Participants were moderately dependent on cigarettes and expressed high perceived positive social support. Participation in counseling was high (>60% smokers completed 4 or more of a total possible 5 counseling sessions in both arms of the study). Seventy-four percent of the 379 participants who responded to the survey item reported NRT use, with similar rates in both groups. Preliminary analyses found no differences in smoking cessation by arm at 5 months: 19.6% in the family-supported intervention and 21.6% in the standard telephone counseling arm.

CONCLUSION: Proactive telephone counseling for chronically ill veterans is feasible and produces clinically important smoking cessation rates. However, telephone counseling augmented with a family-supported intervention was no more effective than standard telephone counseling. Long-term follow-up (12-months post-baseline) is pending and will assess relapse rates.
Primary Prostate Cancer Treatment Variations in the Veterans Health Administration versus the Private Sector

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BACKGROUND: The first-line management of loco-regional prostate cancer may include prostatectomy, radiation therapy, or active surveillance. Substantial variation has been observed in primary treatment of prostate cancer; such variation may be less within an integrated delivery system with equal access to care like the Veterans Health Administration (VHA). We examined primary therapy of loco-regional prostate cancer within the VHA to understand factors contributing to variation within and across facilities. We also compared primary treatment in the VHA for older men with that for older men treated in the private sector under fee-for-service Medicare plans.

METHODS: Data from the Veterans Affairs Central Cancer Registry (VACCR) were used to identify 39,547 men diagnosed with loco-regional prostate cancer during 2001 - 2004. We linked VACCR data with administrative data and surveyed of 138 VHA Medical Centers about availability of cancer-related services. We used hierarchical linear models to identify patient and provider characteristics associated with primary treatment. We also identified 65,778 men aged >65 years diagnosed with loco-regional prostate cancer in 2001-2004 and treated in the private sector under fee-for-service Medicare plans. We used propensity score methods to match these men with 19,210 men aged >65 treated in the private sector to compare primary prostate cancer treatment in the two settings.

RESULTS: Among VHA patients, those who were older (age >70), of black race/ethnicity, had a prior history of cancer, or high comorbidity scores were more likely to undergo active surveillance than other men (all P<.05). Significant variations in rates of primary therapy were seen across VHA facilities, with rates of surgery ranging from 5% to 66% and rates of radiation therapy ranging from 18% to 89%. Facilities with more black patients had lower rates of radical prostatectomy (P=0.02), but overall, facility characteristics explained very little of the variation observed. Compared with patients in fee-for-service Medicare, VHA patients were younger and more likely to be minorities, unmarried, living in areas of lower socioeconomics, and more likely to have vascular disease and diabetes; these differences were no longer present after matching. Adjusted rates of radiation therapy (40.1% vs. 52.2%) and radical prostatectomy (12.1% vs. 15.7%) were lower in the VHA population and rates of active surveillance were significantly higher (47.9% vs. 32.1%) in the VHA population compared to the private sector population (p < 0.001).

CONCLUSION: Substantial variation in primary treatment for prostate cancer was evident in the VHA within and across facilities. Black men received less aggressive care, and facilities that cared for more black men had lower surgery rates, but overall, little variation was explained by facility characteristics. Primary prostate cancer therapy for older men was less aggressive in the VHA than in the private sector. With the absence of data demonstrating benefits of aggressive therapies for most older men with loco-regional prostate cancer, this may reflect more appropriate selection of therapies in the VHA, although additional data are needed to understand the long-term outcomes associated with primary treatments in these settings.