Cycle 1: Disability despite non-surgical therapy

1. Multiple elements of Cycle 1
   - Supports elements of Cycle 1.

2. Multiple elements of Cycle 1
   - Supports elements of Cycle 1.

3. Multiple elements of Cycle 1
   - Supports elements of Cycle 1.

4. Multiple elements of Cycle 1
   - Supports elements of Cycle 1.
Guideline from professional society specifying grading of angina pectoris.

Canadian Cardiovascular Society grading of angina pectoris. See appraisals for specific recommendations within the guideline and/or update.

Document Disability; Tier-2 Source


Support document to accompany the Guideline.

Methods utilized by the Task Force for writing clinical practice guidelines and appraising evidence for recommendations.

Overall, the SAQ demonstrated the greatest sensitivity to angina classification and was the easiest to use for both patients and investigators. Supports the use of the Seattle Angina Questionnaire as a measure of patient disability.

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Support document to accompany the Guideline.

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Relatively small study size and restricted to male patients. Used a validated reference standard for comparison.
**Alcohol use**

**Guideline** contains sections on identification of patients who need to lose weight; relates to obesity; weight management.

**Quao Q, Tervahauta M, Nissinen A, Tuomilehto J.** Mortality from all causes and from coronary heart disease related to smoking and changes in smoking during a 35-year follow-up of middle-aged Finnish men. Eur Heart J, 2000; 21: 1720-25. PMID: 10974770

OBJECTIVE: To determine whether providing an information sheet to patients with acute chest pain reduces anxiety, improves health-related quality of life, improves satisfaction with care, and alters subsequent symptoms or actions. DESIGN: Single centre, non-blinded, randomised controlled trial. SETTING: Chest pain unit of an emergency department. PARTICIPANTS: 700 consecutive patients with acute chest pain and no clear diagnosis at initial presentation. INTERVENTIONS: After a diagnostic assessment patients were randomised to receive either standard verbal advice or verbal advice followed by an information sheet. MAIN OUTCOME MEASURES: The primary outcome was anxiety (hospital anxiety and depression scale). Secondary outcomes were depression (hospital anxiety and depression scale), health related quality of life (SF-36), patient satisfaction, with further chest pain within one month. Lifestyle change (smoking, cessation, diet, exercise), further information sought from other sources, and planned healthcare seeking behaviour in response to further pain. RESULTS: 494 of 700 (71%) patients responded. Compared with those receiving standard verbal advice those receiving advice and an information sheet had lower mean hospital anxiety and depression scale scores for anxiety (3.9 v 4.5, difference 0.6, 95% confidence interval 0.2 to 1.0) and depression (3.4 v 3.2, difference 0.2, 95% CI 0.0 to 0.5) and higher scores for mental health and perception of general health on the SF-36. The information sheet had a significant effect on satisfaction with care, subsequent symptoms, lifestyle change, information seeking, or planned actions in the event of further pain. CONCLUSION: Providing an information sheet to patients with acute chest pain can reduce anxiety and depression and improve mental health and perception of general health but does not alter satisfaction with care or other outcomes. TRials REGISTRATION: Current Controlled Trials [ISRCTN85834809].


**Smoking cessation**

**Guideline** compares verbal information to verbal information plus printed material for patients with acute chest pain of possible cardiac origin. “Provision of an information sheet to patients with acute chest pain can reduce anxiety and depression and improve mental health and perception of general health but does not alter satisfaction with care or other outcomes.”

**Study supports providing printed information, in addition to verbal, for patients with chest pain of possible cardiac origin.**
28 | Tier 1 | Diabetes management
http://www.nice.org.uk/CG66#recommendation76-item-2

28 | Tier 1 | Depression screening
PHQ-2

28 | Tier 2 | Depression screening
PHQ-2

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28 | Tier 2 | Depression screening
PHQ-2
http://www.nice.org.uk/CG66-type-2-diabetes-full

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28 | Tier 3 | Depression screening
PHQ-2

does not improve depression case finding; however, one third of patients endorsing this item reported recent active suicidal ideation.

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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg87/revision-2

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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg66-type-2-diabetes-full

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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg87/revision-2

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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg66-type-2-diabetes-full

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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg87/revision-2

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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg66-type-2-diabetes-full

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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg87/revision-2

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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg66-type-2-diabetes-full

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PHQ-2
http://www.nice.org.uk/guidance/cg87/revision-2

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28 | Tier 3 | Depression screening
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28 | Tier 3 | Depression screening
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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg87/revision-2

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28 | Tier 3 | Depression screening
PHQ-2
http://www.nice.org.uk/guidance/cg66-type-2-diabetes-full
Hypertension is the most common condition seen in primary care and leads to myocardial infarction, stroke, renal failure, and death if not detected early and treated appropriately. Patients want to be assured that blood pressure (BP) treatment will reduce their disease burden, while clinicians want guidance on hypertension management using the best scientific evidence. This report takes a rigorous, evidence-based approach to recommend treatment thresholds, goals, and medications in the management of hypertension in adults. Evidence was drawn from randomized controlled trials, which represent the gold standard for determining efficacy and effectiveness. Evidence quality and recommendations were graded based on their effect on important outcomes. There is strong evidence to support treating hypertensive persons aged 60 years or older to a BP goal of less than 150/90 mm Hg and hypertensive persons 20 through 79 years of age to a diastolic goal of less than 90 mm Hg; however, there is insufficient evidence in hypertensive persons younger than 60 years for a systolic goal, or in those younger than 30 years for a diastolic goal, so the panel recommends a BP of less than 140/90 mm Hg for these groups based on expert opinion. The same thresholds and goals are recommended for hypertensive adults with diabetes or nondiabetic chronic kidney disease (CKD) or for the general hypertensive population younger than 60 years. There is moderate evidence to support initiating drug treatment with an angiotensin-converting enzyme inhibitor, angiotensin receptor blocker, calcium channel blocker, or thiazide-type diuretic in the nonblack hypertensive population, including those with diabetes. In the black hypertensive population, including those with diabetes, a calcium channel blocker or thiazide-type diuretic is recommended as initial therapy. There is moderate evidence to support initiating drug therapy with an angiotensin-converting enzyme inhibitor or angiotensin receptor blocker in persons with CKD to improve kidney outcomes. Although this guideline provides evidence-based recommendations for the management of high BP and should meet the clinical needs of most patients, these recommendations are not a substitute for clinical judgment, and decisions about care must carefully consider and incorporate the clinical characteristics and circumstances of each individual patient.
Obesity

Syntax Score; Euroscore

Folliguet T, Al-Attar N. The Heart Team to assess risk in coronary artery disease.

BACKGROUND: the anatomical SYNTAX score is advocated in European and US guidelines as an instrument to help clinicians decide the optimum revascularisation method in patients with complex coronary artery disease. The absence of an individualised approach and of clinical variables to guide decision-making between coronary artery bypass graft surgery (CABG) and percutaneous coronary intervention (PCI) are limitations of the SYNTAX score. SYNTAX score II aimed to overcome these limitations. METHODS: SYNTAX score II was developed by applying a Cox proportional hazards model to results of the randomised all-comers SYNTAX trial (n=1800). Syntaxis score II features with strong associations to-1 mortality in either the CABG or the PCI settings (interactions), or in both (predictive accuracy), were added to the anatomical SYNTAX score. Comparisons of 4-year mortality predictions between CABG and PCI were made for each patient. Discriminatory performance was quantified by concordance statistics and internally validated with bootstrap resampling. External validation was done in the multicentre all-comers SYNTAX trial (n=2000), a heterogeneous population that included patients with three-vessel disease (3VD) or complex coronary artery disease (anatomical SYNTAX score ≥23, 3VDs and unprotected left main coronary artery (ULMCA) disease). SYNTAX score II significantly predicted a difference in 4-year mortality between patients undergoing CABG and those undergoing PCI (interaction 0.007). To allow similar 4-year mortality after CABG or PCI, younger patients, women, and patients with reduced LVEF required lower anatomical SYNTAX scores, whereas older patients, patients with LUMCA disease, and those with COPD, required higher anatomical SYNTAX scores. Presence of diabetes was not important for decision-making between CABG and PCI (interaction 0.107). SYNTAX score II discriminated well if patients who underwent CABG or PCI, with concordance indices for internal SYNTAX trial validation of 0.75 and for external (DGIST registry) validation of 0.76, which were substantially higher than for the anatomical SYNTAX score alone (concordance index 0.65 and 0.42, respectively). A nomogram was constructed that allowed for an accurate individualised prediction of 4-year mortality in patients proposing to undergo CABG or PCI. INTERPRETATION: Long-term (4-year) mortality in patients with complex coronary artery disease can be well predicted by a combination of anatomical and clinical factors in SYNTAX score I, whereas SYNTAX score II can better predict mortality in the CABG-PCI decision-making process independent of the patient's preoperative condition. Further studies that evaluated 48 factors as predictors of mediastinitis; these data were critically analyzed and compared with the results from this series. In this series, postoperative interval mortality during the first 90 days was 30% who underwent CABG or PCI. The SYNTAX trial is registered with ClinicalTrials.gov, number NCT00114972. CONCLUSIONS: The present study and a meta-analysis of other studies that evaluated 48 factors as predictors of mediastinitis postoperatively, and a total of 24 patients (29%) died. Multivariate analysis identified 4 of the 20 variables as highly significant independent predictors for the development of mediastinal abscess (P = 0.002). These were: 1) a history of prior heart surgery. Study uses Metropolitan Life tables rather than Body Mass Index (BMI). Obesity is associated with mediastinitis following CABG or PCI. Duration of cardiopulmonary bypass and previous heart surgery. Study uses Metropolitan Life tables rather than Body Mass Index (BMI). Obesity is associated with mediastinitis following CABG or PCI. Multivariate analysis identified 4 of the 20 variables as highly significant independent predictors for the development of mediastinal abscess (P = 0.002). These were: 1) a history of prior heart surgery. Study uses Metropolitan Life tables rather than Body Mass Index (BMI). Obesity is associated with mediastinitis following CABG or PCI. Duration of cardiopulmonary bypass and previous heart surgery. Study uses Metropolitan Life tables rather than Body Mass Index (BMI). Obesity is associated with mediastinitis following CABG or PCI. Duration of cardiopulmonary bypass and previous heart surgery.
Glycemic Control


PATIENTS: Six hundred forty-seven diabetic patients underwent major noncardiac surgery during the study period; 139 were excluded because the HbA1c levels were more than 180 days prior to surgery; 19 were excluded for other reasons; 490 diabetic patients were analyzed. The study patients were predominantly nondiabetic men with a mean age of 71 years. MAIN OUTCOME MEASURES: Primary outcomes were infectious complications, including pneumonia, wound infection, urinary tract infection, or sepsis. Bivariate analysis was used first to determine the association of each independent variable with age, race, diabetes treatment, American Society of Anesthesiologists classification, Activities of Daily Living assessment, elective or emergent procedure, wound classification, operation length, and HbA1c levels with outcome. Factors significant at P < .05 were used in a multivariable logistic regression model. RESULTS: In the multivariable model, age, American Society of Anesthesiologists class, operation length, wound classification, and HbA1c levels were significantly associated with postoperative infectious complications with an adjusted odds ratio of 2.13 (95% confidence interval, 1.20 to 3.72) and a P value of <.001. CONCLUSION: Good preoperative glycemic control (HbA1c levels <7%) is associated with a decrease in infectious complications across a variety of surgical procedures.

Nutritional status; Glycemic Control


BACKGROUND: The predictive role of hemoglobin A1c (HbA1c) on long-term outcomes after coronary artery bypass surgery has not been evaluated. METHODS: Preoperative HbA1c levels were obtained in 3,301 patients undergoing primary, elective coronary artery bypass surgery at Emory Healthcare Hospitals from January 2002 to December 2006 and entered prospectively into a computerized database. Long-term survival status was determined by cross-referencing patient records with the Social Security Death Index. Log-rank (unadjusted) and Cox proportional-hazards regression models (adjusted) were employed to determine whether HbA1c and diabetes mellitus were independent risk factors for reduced long-term survival; adjusted for 29 covariates. Hazard ratios for each unit increase in continuous HbA1c were calculated. RESULTS: Patients with HbA1c of 7% or greater had lower unadjusted 5-year survival compared with patients with HbA1c less than 7% (p < .001). Similarly, patients with diabetes mellitus had lower unadjusted 5-year survival compared with patients without diabetes (p < .001). After multivariable adjustment, higher HbA1c (measured as a continuous variable) was associated with reduced long-term survival for each unit increase in HbA1c (hazard ratio 1.15, p < .001), but preoperative diagnosis of diabetes was not associated with reduced long-term survival after coronary artery bypass surgery (p = .41). Other multivariable predictors of reduced long-term survival included age, cerebrovascular disease, elevated serum creatinine, renal insufficiency, congestive heart failure, previous myocardial infection, chronic lung disease, and peripheral vascular disease. CONCLUSIONS: Poor preoperative glycemic control, as measured by an elevated HbA1c, is associated with reduced long-term survival after coronary artery bypass surgery. Optimizing glucose control in these patients may improve long-term survival.

Glycemic Control


http://pen.sagepub.com/content/37/1/3

Background: Patients at risk for nutrition deterioration and related complicated postoperative course. They showed profound heterogeneity in the parameters used for preoperative assessment. The predictive role of hemoglobin A1c (HbA1c), a proxy for glycemic control, as measured by an elevated HbA1c, is associated with reduced long-term survival after coronary artery bypass surgery. CONCLUSIONS: Poor preoperative glycemic control, as measured by an elevated HbA1c, is associated with decreased postoperative infectious complications with an adjusted odds ratio of 2.13 (95% confidence interval, 1.20 to 3.72) and a P value of <.001. CONCLUSION: Good preoperative glycemic control (HbA1c levels <7%) is associated with a decrease in infectious complications across a variety of surgical procedures.

Nutritional status, Reduced serum albumin


Hypothetical: Poor nutrition status is considered a risk factor for postoperative complications in the adult population. In elderly patients, who often have a poor nutrition status, this relationship has not been substantiated. Thus, the aim of this systematic review was to assess the merit of preoperative nutrition parameters used to predict postoperative outcome in elderly patients undergoing general surgery. METHODS: A systematic literature search of 10 consecutive years, 1998-2008, in PubMed, EMBASE, and Cochrane databases was performed. Search terms used were nutrition status, preoperative assessment, postoperative outcome, and surgery or general. Ten studies (15 articles) were included. A total of 465 articles were excluded: 57 did not meet eligibility criteria, 431 were not related to nutrition status, and 21 were not relevant. The 15 articles included in this review were of high quality in regard to methodology and design. RESULTS: HbA1c levels were more than 180 days prior to surgery; 19 were excluded for other reasons; 490 diabetic patients were analyzed. The study patients were predominantly nondiabetic men with a mean age of 71 years. MAIN OUTCOME MEASURES: Primary outcomes were infectious complications, including pneumonia, wound infection, urinary tract infection, or sepsis. Bivariate analysis was used first to determine the association of each independent variable with age, race, diabetes treatment, American Society of Anesthesiologists classification, Activities of Daily Living assessment, elective or emergent procedure, wound classification, operation length, and HbA1c levels with outcome. Factors significant at P < .05 were used in a multivariable logistic regression model. RESULTS: In the multivariable model, age, American Society of Anesthesiologists class, operation length, wound classification, and HbA1c levels were significantly associated with postoperative infectious complications with an adjusted odds ratio of 2.13 (95% confidence interval, 1.20 to 3.72) and a P value of <.001. CONCLUSION: Good preoperative glycemic control (HbA1c levels <7%) is associated with a decrease in infectious complications across a variety of surgical procedures.


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Smoking Cessation
Retrospective cohort study of forty-four adult patients with cirrhosis undergoing cardiac surgery

→ Supports the conclusion that smoking intervention prior to surgery reduces postoperative morbidity.


BACKGROUND & AIMS: This study aims to quantify the risk of cardiac surgery in patients with cirrhosis. METHODS: Records of all adult patients with cirrhosis undergoing cardiac surgery, using cardiopulmonary bypass (at the Cleveland Clinic, Cleveland, OH) from January 1992 to June 2002 were analyzed for any relationship of Child-Pugh class and/or score and Model for End-Stage Liver Disease (MELD) score with outcome measures of hepatic decompensation and death during the first 3 months after surgery. RESULTS: Forty-four patients underwent coronary artery bypass grafting (36 patients), valvular surgery (16 patients), and either smoking cessation or at least 50% smoking reduction. Twelve patients (27%) developed hepatic decompensation, and 7 patients (16%) died. Proportion of hepatic decompensation were 3 of 31 (10%) vs 2 of 15 (13%) in the smoking intervention and control groups, respectively. Logistic regression analysis showed no significant association of hepatic decompensation and mortality with Child-Pugh class and Child-Pugh score, and MELD score was significant (P < .001), areas under the receiver operating characteristic curves for mortality were similar for Child-Pugh (0.84 +/- 0.09) and MELD scores (0.87 +/- 0.09). A cutoff Child-Pugh score >7 was found to have a sensitivity and specificity of 86% and 92% for mortality, with a negative predictive value of 97% (95% confidence interval [CI], 93-99) and a positive predictive value of 67% (95% CI, 31-91), respectively. However, a similar cutoff value for MELD score could not be established. CONCLUSIONS: Child-Pugh score and/or class and MELD score were significantly associated with hepatic decompensation and mortality after cardiac surgery using cardiopulmonary bypass in patients with cirrhosis. Such surgery can be conducted safely in patients with a Child-Pugh score >7. Patients with a Child-Pugh score >10 have a significant risk for mortality.

Smoking Cessation
Cohort study of forty-four adult patients with cirrhosis undergoing cardiac surgery

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BACKGROUND: Smokers are at higher risk of cardiopulmonary and wound-related postoperative complications than non-smokers. Our aim was to investigate the effect of preoperative smoking intervention on the frequency of postoperative complications in patients undergoing hip and knee replacement. METHODS: We did a randomised trial in three hospitals in Denmark. 120 patients were randomly assigned 6-8 weeks before scheduled surgery to either the control (n=60) or smoking intervention (60) group. Smoking intervention was counselling and nicotine replacement therapy, and either smoking cessation or at least 50% smoking reduction. No omission, who was masked to the intervention, registered the occurrence of cardiopulmonary, renal, neurological, or surgical complications and duration of hospital admission. The main analysis was by intention to treat. FINDINGS: Eight controls and four patients from the intervention group were excluded from the final analysis because their operations were either postponed or cancelled. Thus, 52 and 56 patients, respectively, were analysed for outcome. The overall complication rate was 18% in the smoking intervention group and 52% in controls (P < .005). The most significant effects of intervention were seen for wound-related complications (5% vs 31%, p=0.001), cardiovascular complications (0% vs 10%, p=0.08), and secondary surgery (4% vs 15%, p=0.001). The most significant effect of intervention was a 61% decrease in the overall complication rate (relative risk [RR], 0.39; 95% CI, 0.2-0.74). Areas under the receiver operating characteristic curves for mortality were similar for smoking intervention and control groups (0.84 +/- 0.09 vs 0.87 +/- 0.09). CONCLUSIONS: A preoperative smoking intervention programme 6-8 weeks before surgery that includes nicotine replacement therapy and smoking cessation reduces postoperative morbidity, and we recommend, on the basis of our results, this programme be adopted by other cardiac surgery centers.

A cutoff Child-Pugh score >7 was found to have a sensitivity and specificity of 86% and 92% for mortality, with a negative predictive value of 97% (95% confidence interval [CI], 93-99) and a positive predictive value of 67% (95% CI, 31-91), respectively. However, a similar cutoff value for MELD score could not be established.
Background and aims: Alcohol consumption is a well-documented determinant of adverse perioperative outcomes. We sought to determine the effect of active alcohol consumption following elective surgery.

Methods: A randomized controlled trial, conducted between February 2004 and December 2006 at 4 university-affiliated hospitals in the Stockholm region, Sweden. The outcome assessment was blinded. The follow-up period for the primary outcome was 30 days. Eligibility criteria were active daily smokers, aged 18 to 75 years. Of the 328 patients assessed, 76 refused participating, and 117 men and women undergoing surgery for primary hernia repair, laparoscopic cholecystectomy, or a hip or knee prosthesis were enrolled.

Results: Smoking cessation therapy with individual counseling and nicotine substitution started 4 weeks before surgery and continued 4 weeks postoperatively. The control group received standard care. The main outcome measure was frequency of any postoperative complication. RESULTS: An intention-to-treat analysis showed that the overall complication rate in the control group was 43%, and in the intervention group, it was 21% (P = 0.03). Relative risk reduction for the primary outcome of any postoperative complication was 49% and number needed to treat was 5 (95% CI, 3-40). An analysis per protocol showed that abstainers had fewer complications (36%) than those who continued to smoke or only reduced smoking (52%), although this difference was not statistically significant. CONCLUSION: Perioperative smoking cessation seems to be an effective tool to reduce postoperative complications if it is introduced as late as 4 weeks before surgery.

As part of the study, a single-question screening test of alcohol use was validated in primary care. OBJECTIVE: To calibrate, in primary care, a single-item screening tool for unhealthy alcohol use recommended by the National Institute on Alcohol Abuse and Alcoholism (NIAAA). DESIGN: Cross-sectional study. PARTICIPANTS: Adult English-speaking patients recruited from primary care waiting rooms. MATERIALS: Participants were asked the single screening question, "How many times in the past year have you had X or more drinks in a day?", where X is 5 for men and 4 for women, and a response of 1 or greater (corrected) is considered positive. Unhealthy alcohol use was defined as the presence of an alcohol use disorder, as determined by a standardized diagnostic interview, or risky consumption, as determined using a validated 10-day calendar method. MAIN RESULTS: Of 535 eligible primary care patients, 286 (73%) completed the interview. The single-question screen was 81.8% sensitive (95% confidence interval [CI] 73.1% to 88.5%) and 79.3% specific (95% CI 73.1% to 84.4%) for the detection of unhealthy alcohol use. It was slightly more sensitive (87.0%, 95% CI 72.7% to 92.6%) but was less specific (66.4%, 95% CI 60.8% to 72.3%) for the detection of a current alcohol use disorder. Test characteristics were similar to that of a commonly used three-item screen, and were affected very little by subject demographic characteristics. CONCLUSIONS: The single screening question recommended by the NIAAA accurately identified unhealthy alcohol use in this sample of primary care patients. These findings support the use of this brief screen in primary care.

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1/A

Alcohol consumption is a well-documented determinant of adverse perioperative outcomes. We sought to determine the effect of active alcohol consumption following elective surgery.

METHODS: We queried discharge records from the American College of Surgeons' National Surgical Quality Improvement Program (NSQIP, 2005-2007) for all elective adult admissions. The 7,631 (2.5%) patients with documented alcohol use (alcohol use of at least two drinks per day within 2 weeks of surgery; ETOH use) underwent elective surgery, 1,016 (5.7%) patients denied ETOH use. Multivariate analysis was performed with adjustments for demographic and comorbid factors. Primary outcome measures included length of stay (LOS), postoperative complications, and death. RESULTS: ETOH use was associated with elective surgery decreased over the course of the study (p < 0.001). ETOH use was an independent predictor of pneumonia (OR 1.38, 95% CI 1.14-1.63), sepsis (OR 1.19, 95% CI 1.03-1.37), superficial surgical site infection (SSSI; OR 1.31, 95% CI 1.13-1.52), wound disruption (OR 1.41, 95% CI 1.11-1.80), and prolonged LOS (OR 1.37, 95% CI 1.0-1.86). Despite this, these complications were independent risk factors for postoperative mortality. ETOH use was associated with earlier time to wound disruption (9 vs. 12 days; p < 0.04), longer median hospital stay (5 vs. 3 days; p < 0.001), and longer LOS after operation (4 vs. 3 days; p < 0.001). CONCLUSIONS: Active alcohol consumption is a significant determinant of adverse outcomes in elective surgery; patients with ETOH use are scheduled to undergo elective surgery should be appropriately educated and counseled.

54

1/A

Alcohol screening is an important part of primary care practice and can help identify patients at risk for alcohol-related problems. OBJECTIVE: To evaluate, in primary care, a single-item screening tool for unhealthy alcohol use recommended by the National Institute on Alcohol Abuse and Alcoholism (NIAAA). DESIGN: Cross-sectional study. PARTICIPANTS: Adult English-speaking patients recruited from primary care waiting rooms. MATERIALS: Participants were asked the single screening question, "How many times in the past year have you had X or more drinks in a day?", where X is 5 for men and 4 for women, and a response of 1 or greater (corrected) is considered positive. Unhealthy alcohol use was defined as the presence of an alcohol use disorder, as determined by a standardized diagnostic interview, or risky consumption, as determined using a validated 10-day calendar method. MAIN RESULTS: Of 394 eligible primary care patients, 286 (73%) completed the interview. The single-question screen was 81.8% sensitive (95% confidence interval [CI] 73.1% to 88.5%) and 79.3% specific (95% CI 73.1% to 84.4%) for the detection of unhealthy alcohol use. It was slightly more sensitive (87.0%, 95% CI 72.7% to 92.6%) but was less specific (66.4%, 95% CI 60.8% to 72.3%) for the detection of a current alcohol use disorder. Test characteristics were similar to that of a commonly used three-item screen, and were affected very little by subject demographic characteristics. CONCLUSIONS: The single screening question recommended by the NIAAA accurately identified unhealthy alcohol use in this sample of primary care patients. These findings support the use of this brief screen in primary care.

55

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56

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Screening for Dementia


OBJECTIVE: The goal of this study was to examine the feasibility, acceptability, and efficacy of a brief, tailored cognitive-behavioral intervention for patients with symptoms of depressive or anxiety before undergoing a coronary artery bypass graft (CABG) operation. METHODS: Patients were recruited from a university teaching hospital between February 2007 and May 2008. Patients were randomly assigned to receive either CBT or a cognitive-behavioral therapy (CBT) intervention called Managing Anxiety and Depression using Education and Skills (MADNESS). RESULTS: Overall, the intervention was feasible, and patients had a positive impression of the MADNESS. Of the 100 subjects enrolled into the study, 40% of CABG patients had depressive symptoms at the time of discharge. Quality of life and anxiety symptoms improved in both groups at 3-4 weeks of follow-up. CONCLUSIONS: This study demonstrated that a brief, tailored CBT targeting depressive and anxiety symptoms was feasible and acceptable. Most important, this intervention improved depressive and anxiety symptoms, as well as quality of life.

Depression / Psychiatric disorders


BACKGROUND: The association of depression with cardiac events has been investigated mainly in community cohorts, in patients undergoing catheterisation, or in patients who have had myocardial infarction. We assessed the effect of depression on outcomes after coronary artery bypass graft surgery. METHODS: In a prospective study, we followed up for 1 year 207 men and 102 women, who had undergone coronary artery bypass graft surgery. We assessed depression with a structured psychiatric interview (diagnostic interview schedule) and a questionnaire (Beck Depression Inventory) before discharge. Cardiac events included angina or heart failure that needed admission to hospital, myocardial infarction, cardiac arrest, percutaneous transluminal coronary angioplasty, repeat CABG, and cardiac mortality. RESULTS: Non-cardiac events consisted of all other reasons for mortality or readmission. FINDINGS: 62 patients (20%) met modified diagnostic statistical manual IV criteria for major depressive disorder. At 12 months, 17 (27%) of these patients had a cardiac event compared with 25 of 144 (17%) who were not depressed (p<0.0008). Five variables had significant univariate associations with cardiac events: sex, living alone, low ejection fraction (<0.35), length of hospital stay, and depression. In a Cox proportional-hazard model with these and two other variables of cardiac severity, major depressive disorder had an odds ratio of 2.3 (95% CI 1.17-4.56), low ejection fraction (<0.35), and female sex (2.4 1.24-4.44) were associated with adverse outcomes. Depression did not predict deaths or admissions for non-cardiac events. CONCLUSION: Depression is an important independent risk factor for cardiac events after CABG surgery.

Depression / Psychiatric disorders

Dao TK, Youssef NA, Armsworth M, Wear E, Papathopoulos KN, Gopaldas R. Randomized controlled trial of brief cognitive-behavioral intervention for patients with symptoms of depressive or anxiety before undergoing a coronary artery bypass graft (CABG) operation. METHOD: Patients were recruited from a university teaching hospital between February 2007 and May 2008. Patients were randomly assigned to receive either CBT or a cognitive-behavioral therapy (CBT) intervention called Managing Anxiety and Depression using Education and Skills (MADNESS). A total of 100 subjects were randomized into the study. RESULTS: Overall, the intervention was feasible, and patients had a positive impression of the MADNESS. Of the 100 subjects enrolled into the study, 40% of CABG patients had depressive symptoms at the time of discharge. Quality of life and anxiety symptoms improved in both groups at 3-4 weeks of follow-up. CONCLUSIONS: This study demonstrated that a brief, tailored CBT targeting depressive and anxiety symptoms was both feasible and acceptable. Most important, this intervention improved depressive and anxiety symptoms, as well as quality of life.
The ASCERT Long-Term Survival Probability Calculator for Isolated CABG allows a user to calculate a patient's probability of survival following an isolated CABG surgical procedure in patients 65 years and older. The calculator incorporates a risk model derived from linking STS Adult Cardiac Surgery Database data (version 2.52) to Centers for Medicare & Medicaid Services MEDPAR data as part of the STS-ACC ASCERT grant. http://circ.ahajournals.org/content/125/24/e665.full.pdf+html

http://content.healthaffairs.org/content/31/9/2539.full.pdf+html

http://circ.ahajournals.org/content/125/24/R83.full.pdf+html

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Decision aids are evidence-based sources of health information that can help patients make informed treatment decisions. However, little is known about how decision aids affect health care use when they are implemented outside of randomized controlled clinical trials. We conducted an observational study to examine the associations between introducing decision aids for hip and knee osteoarthritis and rates of joint replacement surgery and costs in a large health system in Washington State. Consistent with prior randomized trials, our introduction of decision aids was associated with 36 percent fewer knee replacement surgeries, 12 percent fewer hip replacements, and 12-21 percent lower costs over six months. These findings support the concept that patient decision aids for some health conditions, for which treatment decisions are highly sensitive to both patients' and physicians' preferences, may reduce rates of elective surgery and lower costs.

Decision aids for hip and knee surgery were associated with 36 percent fewer knee replacement surgeries, 12 percent fewer hip replacements, and 12-21 percent lower costs over six months. These findings support the concept that patient decision aids for some health conditions, for which treatment decisions are highly sensitive to both patients' and physicians' preferences, may reduce rates of elective surgery and lower costs.

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A single dose of erythropoietin reduces perioperative transfusions in cardiac surgery: results of a prospective single-blind randomized controlled trial. Perioperative administration of erythropoetin to patients prior to CABG would reduce the need for blood transfusion.
Delirium

Cohort included a variety of surgical procedures, as well as patients hospitalized for medical care. The study supports treatment of nasal carriers of Staphylococcus aureus to reduce incidence of surgical site infections.

Cohort is elderly patients treated in hospital or acute care setting for medical or surgical conditions.

→ Supports the conclusion that delirium is associated with poor outcomes.

Cohort is elderly patients treated in hospital or acute care setting for medical or surgical conditions.

→ Supports the conclusion that delirium is associated with poor outcomes.

Dental screening

Retrospective cohort study of 25,587 patients who underwent cardiac surgery at the Cleveland institution. Study found that delirium in elderly patients is associated with poor outcome independent of important confounders.

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Context: Delirium is a common and serious complication in elderly patients. Evidence suggests that delirium is associated with long-term poor outcome but delirium often occurs in individuals with more severe underlying disease. OBJECTIVE: To assess the association between delirium in elderly patients and long-term poor outcome, defined as mortality, institutionalization, or dementia, while controlling for important confounders. DATA SOURCES: A systematic search of studies published between January 1981 and April 2010 was conducted using the databases of MEDLINE, EMBASE, PsyChi, and OLMAN. STUDY SELECTION: Observational studies of elderly patients with delirium as a study variable and data on mortality, institutionalization, or dementia after a minimum follow-up of 3 months, and published in the English or Dutch language. Titles, abstracts, and articles were reviewed independently by all of the authors. Of 208 references in the original search, 15 relevant articles were identified. IDENTIFICATION: Information on study design, characteristics of the study population, and outcome were extracted. Quality of studies was assessed based on elements of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist for cohort studies. DATA SYNTHESIS: The primary analysis included only high-quality studies with statistical control for age, sex, comorbid illness or illness severity, and baseline dementia. Pool effect estimates were calculated with random-effects models. The primary analysis with adjusted hazard ratios (HRs) showed that delirium is associated with an increased risk of death compared with controls after an average follow-up of 13.7 months (7 studies; 77516 patients [98.8%] with delirium, 66432 controls) (37.9% HR, 1.91 [95% confidence interval [CI], 1.51-2.42]; 46.0%). Moreover, patients who had experienced delirium were also at increased risk of institutionalization (7 studies; average follow-up, 14.4 months); 176272 patients [33%] with delirium and 216572 controls (57.7%); odds ratio [OR], 2.40 [95% CI, 1.77-3.23]; 0.6% and dementia (2 studies; average follow-up, 4.1 years); 956 cases [52.5%] with delirium and 185 controls (0.8%); OR, 12.32 [95% CI, 1.36-64.22]; 4.5%]. The sensitivity, trim-and-fill, and secondary analyses with unadjusted high-quality risk estimates stratified according to the study characteristics confirmed the robustness of these results. CONCLUSIONS: The meta-analysis provides evidence that delirium in elderly patients is associated with poor outcome independent of important confounders, such as age, sex, comorbid illness or illness severity, and baseline dementia +.01744

Conclusion: In the absence of reliable evidence taking poor oral health to prophylactically reduce infection, it is the opinion of the work group that patients with prosthetic joint implants maintain appropriate oral hygiene. Grade of Recommendation: Consensus.

Recommendation #4: Support patients with implant monitoring good oral health.

Conclusion: In the absence of reliable evidence taking poor oral health to prophylactically reduce infection, it is the opinion of the work group that patients with prosthetic joint implants or other orthopaedic implants maintain appropriate oral hygiene. Grade of Recommendation: Consensus.

Recommendation #4: Support the conclusion that obstructive sleep apnea is associated with increased risk of post-operative complications following cardiac surgery.

Conclusion: In the absence of reliable evidence taking poor oral health to prophylactically reduce infection, it is the opinion of the work group that patients with prosthetic joint implants or other orthopaedic implants maintain appropriate oral hygiene. Consensus.

Recommendation #4: Support the conclusion that obstructive sleep apnea is associated with increased risk of post-operative complications following cardiac surgery.
Evidence that intraoperative hemodynamic abnormalities influence outcome is limited. The purpose of this study was to determine whether intraoperative hemodynamic abnormalities were associated with mortality, stroke, or perioperative myocardial infarction (PMI) in a large cohort of patients undergoing coronary artery bypass grafting. Risk factors and outcomes were queried from a state-mandated cardiac surgery reporting system at two hospitals in New York, NY. Intraoperative hemodynamic abnormalities were derived from computerized anesthesia records by assessing the duration of exposure to moderate or severe extremes of hemodynamic variables. Multivariate logistic regression identified independent predictors of perioperative mortality, stroke, and PMI. Among 2148 patients, there were 50 mortalities, 51 strokes, and 85 PMIs. In the intraoperative pulmonary bypass (IOPB) period, pulmonary hypertension was a predictor of mortality (odds ratio [OR] 2.1, P = 0.028), and bradycardia and tachycardia were predictors of PMI (OR 2.6, P = 0.007 and OR 2.0, P = 0.02, respectively). During CPB, hypertension was a predictor of mortality (OR 1.8, P = 0.037). Post-CPB, tachycardia was a predictor of mortality (OR 1.9, P = 0.031), diastolic arterial hypertension was a predictor of stroke (OR 3.4, P = 0.012), and pulmonary hypertension was a predictor of PMI (OR 2.3, P < 0.001). Increased pulmonary arterial diastolic pressure post-CPB was a predictor of mortality (OR 1.2, P = 0.004), stroke (OR 1.9, P = 0.02), and PMI (OR 2.2, P = 0.001). Rapid intraoperative variations in blood pressure and heart rate were not independent predictors of these outcomes. These findings demonstrate the prognostic significance of intraoperative hemodynamic abnormalities, including data from pulmonary artery catheterization, to adverse postoperative outcome. It is not known whether interventions to control these variables would improve outcome. IMPLICATIONS: Intraoperative hemodynamic abnormalities, including pulmonary hypertension, tachycardia, and tachycardia, were independently associated with mortality, stroke, and perioperative myocardial infarction and above the effects of other preoperative risk factors.

Pulmonary Hypertension

Antiplatelet therapy;
Retrospective study of 474,108 Medicare patients undergoing one of eight cardiovascular or vascular surgery procedures. From 2002 to 2006, patients underwent coronary artery bypass grafting (CABG), valve surgery, endarterectomy, or resection of esophageal, lung, colorectal, or gynecologic cancer.

OBJECTIVE: Recent trials comparing on-pump (CABG) with off-pump coronary artery bypass grafting (OPCAB) have been criticized by those who believe that surgeon inexperience may explain the apparent worse outcome for OPCAB. However, the magnitude of effect of surgeon volume on outcomes after OPCAB remains unknown. The purpose of this study was to examine the effect of surgeon volume on risk-adjusted mortality after OPCAB. METHODS: From 2002 to 2006, patients underwent coronary artery bypass grafting (CABG), valve surgery, endarterectomy, or resection of esophageal, lung, colorectal, or gynecologic cancer. Surgeon volume for OPCAB was tabulated as a continuous variable for each of the 57,150 patients in the study.

CONCLUSIONS: Surgeon volume is significantly related to in-hospital mortality after OPCAB. A highly significant nonlinear relationship between surgeon volume and risk-adjusted mortality was observed for OPCAB performed by surgeons with volumes of > 125 operations per year. However, the contribution of surgeon volume to the probability of death is incrementally small and compared with other patient and operative characteristics. This demonstrates that outcomes after OPCAB are more dependent on patient risk factors than on surgeon volume.

Large, retrospective study using the Nationwide Inpatient Sample database. Surgeon volume was inversely correlated with in-hospital mortality for OPCAB (P < .01). However, the contribution of surgeon volume to the probability of death is incrementally small compared with other patient and operative characteristics. A significant surgeon volume-outcome relationship for mortality after OPCAB exists, but the threshold for mortality outcomes is more than 50 operations per year.

Surgeon volume is one factor that correlates with in-hospital mortality in patients undergoing CABG.

Suggests that surgeon volume of 50 operations per year is associated with lower in-hospital mortality.

Volume surgery is not a threshold but is a continuous variable.

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Surgeon volume is one factor that correlates with in-hospital mortality in patients undergoing CABG.
87 / A / 2

Hospital surgical volume


BACKGROUND: While prior research has found an inverse relationship between hospital volume and mortality after coronary artery bypass graft surgery (CABG), the use of volume as a proxy for quality and a means for assessing hospitals is controversial. The objective of this study was to quantify the relationship between hospital volume alone and CABG mortality. METHODS: A retrospective cohort of 948,930 Medicare patients undergoing CABG in 870 US hospitals from 1996 to 2001 was categorized into quintiles, based on hospital CABG volumes. Hospitals were also classified by volume criteria proposed by the Leapfrog Group. Logistic regression was used to describe adjusted hospital mortality rates (in hospital or within 30 days after CABG) for patient characteristics; discrimination of the volume categories was assessed by the c statistic. RESULTS: The range in risk-adjusted mortality for hospitals within the quintile was substantial: 3% to 17% at very low (2% to 12% at low, 2% to 19% at medium, 2% to 10% at high, and 2% to 11% at very high volume hospitals. Moreover, volume alone was a poor discriminator of mortality (c statistic = 0.52). Similar variation in adjusted mortality was seen within the Leapfrog low-volume group (3% to 17%) and high-volume groups (2% to 11%), and the Leapfrog criterion was a poor discriminator of mortality (c statistic < 0.51). If the Leapfrog low-volume thresholds, 253 (18%) had risk-adjusted mortality rates that were similar to or lower than the overall risk-adjusted mortality of high-volume hospitals (5.2%). CONCLUSIONS: Volume alone, as a discriminator of mortality, is only slightly better than a coin flip (c statistic of 0.50).

89 / A / 2

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88 / A / 2

Hospital surgical volume


BACKGROUND: Although numerous studies suggest that there is an inverse relationship between hospital volume of surgical procedures and surgical mortality, the relative importance of hospital volume in various surgical procedures is disputed. METHODS: Using information from the national Medicare claims data base and the Nationwide Inpatient Sample, we examined the mortality associated with six different types of cardiovascular procedures and eight types of major cancer resections between 1994 and 1999 (total number of procedures, 2.5 million). Regression techniques were used to describe relationships between hospital volume (total number of procedures performed per year) and mortality (in-hospital or within 30 days), with adjustment for characteristics of the patients. RESULTS: Mortality decreased as volume increased for all 14 types of procedures, but the relative impact improved markedly according to the type of procedure. Absolute differences in adjusted mortality rates between very-low-volume hospitals and very-high-volume hospitals ranged from less than 0.5 percent for carotid endarterectomy, 1.6 percent vs. 0.8 percent to only 0.2 percent for coronary artery bypass grafting. A 0.2 percent difference favored the lower-volume hospitals on coronary artery bypass grafting. The absolute differences in adjusted mortality rates between very-low-volume hospitals and very-high-volume hospitals were less than 1 percent for coronary artery bypass grafting (c statistic of 0.50). CONCLUSIONS: Across a range of patient characteristics, the absolute difference in adjusted mortality rates was smaller than the difference in adjusted mortality rates between very-low-volume hospitals and very-high-volume hospitals. The average composite score for the lowest volume (< 100 cases) group was significantly lower than that of the 2 highest-volume groups, but only 1% of composite score variation was explained by volume. CONCLUSION: A volume-performance association exists for coronary artery bypass grafting but is weaker than that of other major complex procedures. There is considerable outcomes variability not explained by hospital volume, and low volume does not preclude excellent performance. Except for internal thoracic artery use, care processes and mortality rates were not associated with volume.

90 / A / 2

Hospital surgical volume


BACKGROUND: While prior research has found an inverse relationship between hospital volume and mortality after coronary artery bypass graft surgery (CABG), the use of volume as a proxy for quality and a means for assessing hospitals is controversial. OBJECTIVE: This study examines the association of hospital coronary artery bypass procedural volume with mortality, morbidity, evidence-based care processes, and Society of Thoracic Surgeons composite score. METHODS: The study population consisted of 144,526 patients from 735 hospitals that submitted data to the Society of Thoracic Surgeons Adult Cardiac Database in 2007. End points included use of National Quality Forum-endorsed process measures (internal thoracic artery graft, preoperative beta-blockade, and discharge beta-blockade, antithrombotic agents, and lipid drugs), operative mortality (in hospital or 30 days), major morbidity (stroke, renal failure, reoperation, external fistula, and prosthetic endocarditis), and Society of Thoracic Surgeons composite score. Procedural volume was analyzed as a continuous variable and by volume strata (< 100, 100–249, 250–499, 500–999, ≥ 1000), and n = 460. Analyses were performed with logistic and multivariate hierarchical regression modeling. RESULTS: Unadjusted mortality decreased across volume categories from 2.0% (170 cases) to 1.7% (450 cases, P < .0001). These differences persisted after risk factor adjustment (odds ratio for lowest vs highest-volume group, 1.49). Care processes and mortality end points were not associated with hospital procedural volume except for a trend (P = .027) toward greater internal thoracic artery use in high-volume hospitals. The average composite score for the lowest volume (< 100 cases) group was significantly lower than that of the 2 highest-volume groups, but only 1% of composite score variation was explained by volume. CONCLUSION: A volume-performance association exists for coronary artery bypass grafting but is weaker than that of other major complex procedures. There is considerable outcomes variability not explained by hospital volume, and low volume does not preclude excellent performance. Except for internal thoracic artery use, care processes and mortality rates were not associated with volume.
**32** / 8 / 3/ 2/ A: Anaesthesia


The authors analyzed data from 12 randomized placebo-controlled trials (4,689 adult patients receiving acetaminophen, nonsteroidal antiinflammatory drugs, or selective cyclooxygenase-2 inhibitors in conjunction with morphine after surgery). The number needed to treat was 45 mg (range, 15-117 mg); it was significantly decreased with all regimens by 15-50%. There was evidence of a reduction in pain intensity at 24-72 h in 30-50% of visual analog scale pain with nonsteroidal antiinflammatory drugs. Nonsteroidal antiinflammatory drugs also significantly reduced the incidence of nausea/vomiting (36.8% vs 26.2% [number needed to treat, 10]) and of sedation from 15.8% to 12.7% (number needed to treat, 57) but increased the risk of severe bleeding from 0.3% to 1.7% (number needed to harm, 56). Selective cyclooxygenase-2 inhibitors increased the risk of renal failure in cardiac patients from 3% to 4% (number needed to harm, 73). A decrease in morphine consumption is not a good indicator of the usefulness of a supplemental analgesic. There is evidence that the combination of nonsteroidal antiinflammatory drugs with patient-controlled analgesia morphine offers some advantages over morphine alone.

**32** / 8 / 3/ 2/ D: Anaesthesia

Corticosteroids, NSAIDs, and COX-2 inhibitors all reduce morphine need after surgery. NSAIDs in combination with morphine reduce nausea/vomiting and sedation but increase the risk of severe bleeding. COX-2 inhibitors increase risk for renal failure in cardiac patients.

- Supports use of multimodal analgesics to reduce opiate need.

**32** / 8 / 3/ 2/ A: Anaesthesia


Nasal carriers of Staphylococcal aureus are at increased risk for healthcare-associated infections. With this in mind, decolonization of nasal and extranasal sites at hospital admission may reduce this risk. Mupirocin, a nonadherent, double-blind, placebo-controlled, multicenter trial, we assessed whether rapid identification of S. aureus nasal carriers by means of a real-time polymerase-chain-reaction (PCR) assay, followed by treatment with mupirocin nasal ointment and chlorhexidine soap, reduced the risk of hospital-associated S. aureus infection. RESULTS: From October 2005 through June 2007, a total of 6771 patients were screened on admission. A total of 1270 (18.8%) were positive for S. aureus, we enrolled 817 of these patients in the intention-to-treat analysis, of whom 808 (82.2%) underwent a surgical procedure. All the S. aureus strains identified on PCR assay were susceptible to methicillin and mupirocin. The rate of S. aureus infection was 3.6% (17 of 461 patients) in the mupirocin-chlorhexidine group, as compared with 7.9% (37 of 462 patients) in the placebo group (relative risk of infection, 0.47; 95% confidence interval [CI], 0.23 to 0.77). The effect of mupirocin-chlorhexidine treatment was most pronounced for deep surgical-site infections (relative risk, 0.23; 95% CI, 0.10 to 0.52). There was no significant difference in all-cause hospital mortality between the two groups. The rate in the course of nosocomial infection was shorter in the placebo group than in the mupirocin-chlorhexidine group (P<0.001). CONCLUSIONS: The number of surgical-site S. aureus infections acquired in the hospital can be reduced by rapid screening and decolonization of nasal carriers of S. aureus on admission. (Current Controlled Trials number, ISRCTN65186768)
Systematic review and meta-analysis of goal directed therapy undergoing cardiac surgery

BACKGROUND: Surgical site infections (SSI) are wound infections that occur after invasive surgical procedures. Preoperative bathing or showering with an antiseptic skin wash product is a well-accepted procedure for reducing skin bacteria (microflora). It is less clear whether reducing skin microfauna leads to a lower incidence of surgical site infection. OBJECTIVES: To review the evidence for preoperative bathing or showering with anti-fibrinolytic drugs in adults undergoing non-urgent surgery. METHODS: For this fifth update we searched the Cochrane Wounds Group Specialised Register (searched 18 December 2014); the Cochrane Central Register of Controlled Trials (The Cochrane Library 2014 Issue 12); MEDLINE (1950 to December Week 4 2014); EMBASE (December 2014 Update); and CENTRAL (The Cochrane Library 2014 Issue 12). We identified trials and review articles were checked and trial authors were contacted to identify any additional studies. The searches were last updated in July 2010. RESULTS: Five randomised trials (RCTs) of anti-fibrinolytic drugs in adults scheduled for non-urgent surgery. Eligible trials compared anti-fibrinolytic drugs with placebo (or no treatment), or with each other. DATA COLLECTION AND ANALYSIS: Two authors independently assessed trials for inclusion in this fifth update. Seven trials involving a total of 10,157 participants were included. Four of the included trials had three comparison arms. The antifibrinolytic in all trials was 4% chlorohydroxy-Arginine-HBr (Hibor/Argothelin). Three trials involving 7942 participants compared chlorohydroxyarginine with a placebo. Bathing with chlorohydroxyarginine compared with placebo did not result in a statistically significant reduction in SSI; the relative risk of SSI (RR) was 0.91 (95% confidence interval 0.80 to 1.03). When only trials of high quality were included in this comparison, the RR of SSI was 0.95 (95% CI 0.84 to 1.07). Three trials of 5439 participants compared bar soap with chlorohydroxyarginine; when combined there was no difference in the risk of SSI (RR 1.02, 95% CI 0.97 to 1.08). Three trials of 1012 patients compared bathing with chlorohydroxyarginine with no washing, one large study found a statistically significant difference in favour of bathing with chlorohydroxyarginine (RR 0.38, 95% CI 0.17 to 0.80). The smaller studies found no difference between patients who washed with chlorohydroxyarginine and those who did not wash preoperatively. AUTHORS' CONCLUSIONS: This review provides no clear evidence of benefit for preoperative bathing or showering with chlorohydroxyarginine over other wash products, to reduce surgical site infection. Efforts to reduce the incidence of nosocomial surgical site infection should focus on interventions that have been shown to be effective.

Study preparation


We included trials that compared anti-fibrinolytic drugs to placebo, to one another, or with each other. Included trials were classified using the Cochrane Wounds Group classification system. Tier-1 trials are those where effect has been demonstrated. Tier-2 trials are those where evidence of possible benefit exists. Tier-3 trials are those where evidence of possible harm exists. Tier-4 trials are those for which no evidence exists. We have chosen to use the Cochrane Wounds Group classification system because we consider it to be more clinically relevant than the Cochrane Risk of Bias tool.

In this meta-analysis, we have included Tier-1 evidence from five RCTs to support the conclusion that chlorhexidine is superior to other wash products for reducing surgical site infection.

The author(s) have complying with the Cochrane Wounds Group guidelines to ensure that the evidence provided in this review is of high quality.

In this meta-analysis, we have included Tier-1 evidence from five RCTs to support the conclusion that chlorhexidine is superior to other wash products for reducing surgical site infection.

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**323 8 / 3 / 6 Venous**

Prospective randomized trial testing efficacy of liberal versus restrictive approaches to anticoagulation.

Murphy GJ, Pike K, Rogers CA, Wordsworth S, Stokes EA, Angelini GD, Reeves III / B / 3 / b

**324 8 / 7 / 4 Technical specifications for ACE Demonstration Quality Monitoring Program.**

Measures 1-4: Surgical Care Improvement Project measures. CML (revised 2011)


Tier-2 Source

- CMS standard for measures to prevent infection and venous thromboembolism for surgical patients.

**325 8 / 7 / 4 Technical specifications for ACE Demonstration Quality Monitoring Program.**

Measures 1-4: Surgical Care Improvement Project measures. CML (revised 2011)


Tier-2 Source

Specialty society guideline.

- Recommends anticoagulant therapy for elective surgical patients with emphasis on patients undergoing joint surgery.

**326 8 / 7 / 4 Various thromboprophylaxis prevention.**

Joint Commission. Surgical Care Improvement Project ( SCIP) Specifications manual for national hospital inpatient quality measures v4 3b 2014


Tier-2 Source

- CMS standard for measures to prevent infection and venous thromboembolism for surgical patients.

**327 8 / 7 / 4 Various thromboprophylaxis prevention.**

Technical specifications for ACE Demonstration Quality Monitoring Program. Measures 1-4: Surgical Care Improvement Project measures. CML (revised 2011)


Tier-2 Source

- CMS standard for measures to prevent infection and venous thromboembolism for surgical patients.


Cycle 4: Post-operative Care and Return to Function


Introduction: The CMS Surgical Care Improvement Project (SCIP) measures are a subset of National Quality Forum hospital patient-level measures created through the joint efforts of the Centers for Medicare & Medicaid and the Joint Commission. Specifications Manual for National Hospital Quality Measures Version 3.1 Effective for discharges 10-01-2008 through 03-31-2009. The SCIP measures have been endorsed by the National Quality Forum, and are used by Hospital Compare, the Premier demonstration, and RHQDAP/ACU. Corresponding measures are used by PQRI at the individual physician level. The NQF endorsed measures are calculated across a defined list of major surgical procedures and separately for the MEDIC AG trial demonstration surgical procedure groups of CABG, Cardiac Valves, and Hip and Knee Replacement.

Not approved CMS standard for anti-platelet therapy at discharge.
OBJECTIVES: Patient-reported outcomes (PROs) are essential when evaluating many new treatments in healthcare; yet, current measures have been limited by a lack of precision, standardization, and comparability across studies and diseases. The Patient-Reported Outcomes Measurement Information System (PROMIS) provides item banks that offer the potential for efficient (minimizes item number without compromising reliability), flexible (enables optimal use of interchangeable items), and precise (provides minimal error in estimate) measurement of commonly studied PROs. We report results from the first large-scale testing of PROMIS items.

STUDY DESIGN AND SETTING: Fourteen item pools were tested in the U.S. general population and clinical groups using an online panel and clinic recruitment. A scale-setting subsample was created reflecting demographics proportional to the 2000 U.S. census. RESULTS: Using item-response theory (graded response model), 11 item banks were calibrated on a sample of 21,133, measuring components of self-reported physical, mental, and social health, along with a 10-item Global Health Scale. Short forms from each bank were developed and compared with the overall bank and with other well-validated and widely accepted ("legacy") measures. All item banks demonstrated good reliability across most of the score distributions. Construct validity was supported by moderate to strong correlations with legacy measures. CONCLUSION: PROMIS item banks and their short forms provide evidence that they are reliable and precise measures of generic symptoms and functional reports comparable to legacy instruments. Further testing will continue to validate and test PROMIS items and banks in diverse clinical populations.

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Evaluating patient-reported outcomes (PROs) is essential when evaluating many new treatments in healthcare; yet, current measures have been limited by a lack of precision, standardization, and comparability across studies and diseases. The Patient-Reported Outcomes Measurement Information System (PROMIS) provides item banks that offer the potential for efficient (minimizes item number without compromising reliability), flexible (enables optimal use of interchangeable items), and precise (provides minimal error in estimate) measurement of commonly studied PROs. We report results from the first large-scale testing of PROMIS items.

STUDY DESIGN AND SETTING: Fourteen item pools were tested in the U.S. general population and clinical groups using an online panel and clinic recruitment. A scale-setting subsample was created reflecting demographics proportional to the 2000 U.S. census. RESULTS: Using item-response theory (graded response model), 11 item banks were calibrated on a sample of 21,133, measuring components of self-reported physical, mental, and social health, along with a 10-item Global Health Scale. Short forms from each bank were developed and compared with the overall bank and with other well-validated and widely accepted ("legacy") measures. All item banks demonstrated good reliability across most of the score distributions. Construct validity was supported by moderate to strong correlations with legacy measures. CONCLUSION: PROMIS item banks and their short forms provide evidence that they are reliable and precise measures of generic symptoms and functional reports comparable to legacy instruments. Further testing will continue to validate and test PROMIS items and banks in diverse clinical populations.

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