Permanente Abstracts

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Relation between hospital primary angioplasty volume and mortality for patients with acute MI treated with primary angioplasty vs thrombolytic therapy

Magid DJ, Calonge BN, Rumsfeld JS, et al. JAMA 2000 Dec 27;284(24):3131-8.

CONTEXT: Institutional experience with primary angioplasty has been suggested as a factor in selecting a reperfusion strategy for patients with acute myocardial infarction (AMI). However, no large studies have directly compared outcomes of primary angioplasty vs thrombolytic therapy as a function of institutional experience.

OBJECTIVE: To compare outcomes among patients with AMI who were treated with primary angioplasty vs thrombolytic therapy at hospitals with different volumes of primary angioplasty.

DESIGN: Retrospective cohort.

SETTING: A total of 446 acute care hospitals with 112 classified as low volume (≤16 procedures), 223 as intermediate volume (17-48 procedures), and 111 as high volume (≥49 procedures) based on their annual primary angioplasty volume.

PATIENTS: A total of 62,299 patients with AMI treated with primary angioplasty or thrombolytic therapy from June 1, 1994, through July 31, 1999.

MAIN OUTCOME MEASURE: In-hospital mortality.

RESULTS: Mortality was lower among patients who received primary angioplasty compared with those who received thrombolysis at hospitals with intermediate volumes (4.5% vs 5.9%; P < .001) and high volumes (3.4% vs 5.4%; P < .001) of primary angioplasty. At low-volume hospitals, there was no significant difference in mortality between patients treated with primary angioplasty vs those treated with thrombolysis (6.2% vs 5.9%; P = .58). Adjusting for differences in demographic, medical history, clinical presentation, treatment, and hospital characteristics did not significantly alter these findings.

CONCLUSIONS: In this study, patients with AMI treated at hospitals with high or intermediate volumes of primary angioplasty had lower mortality with primary angioplasty than with thrombolysis, whereas patients with AMI treated at hospitals with low angioplasty volumes had similar mortality outcomes with primary angioplasty or thrombolysis.

Effectiveness and economic impact associated with a program for outpatient management of acute deep vein thrombosis in a group model health maintenance organization

Tillman DJ, Charland SL, Witt DM. Arch Intern Med 2000 Oct 23;160(19):2926-32.

BACKGROUND: Controlled clinical trials have demonstrated that outpatient administration of low-molecular-weight heparin to patients with acute deep vein thrombosis (DVT) provides safety and efficacy equivalent to that of traditional inpatient therapy with unfractionated heparin. Whether favorable results reported in controlled clinical trials are achievable in clinical practice is an important consideration.

METHODS: Appropriate patients with objectively diagnosed DVT were treated as outpatients with low-molecular-weight heparin and warfarin sodium according to an approved guideline. The primary end point for analysis consisted of objectively diagnosed symptomatic recurrent thromboembolism or major bleeding within a 90-day evaluation period. The incremental cost incurred by the organization while using the outpatient DVT treatment guideline was determined. Incremental cost savings of the outpatient DVT treatment program were determined based on the cost that would have accrued had the patient been admitted to the hospital for treatment with unfractionated heparin.

RESULTS: We enrolled 391 patients (91.4%) in the outpatient DVT treatment program. Of these, 373 (95.4%) completed 90 days of therapy without reaching the primary end point. The percentage of patients reaching the primary outcome measure (4.6%) fell within the range of patients enrolled in controlled clinical trials (3.5%-9.4%). During the two-year program evaluation, total cost savings of $1,108,587 were realized.

CONCLUSIONS: Outpatient treatment of acute DVT can be managed safely and effectively in clinical practice. The potential savings associated with outpatient DVT treatment are substantial.

Early discharge of infected patients through appropriate antibiotic use

Eron LJ, Passos S. Arch Intern Med 2001 Jan 8;161(1):61-5.

BACKGROUND: Patients with infections are usually discharged from the hospital with antibiotics when afebrile and clinically improved.

OBJECTIVES: To compare outcomes of early vs conventionally discharged patients and to examine the role of antibiotic use in the discharge process.

METHODS: One hundred eleven patients hospitalized with cellulitis, community-acquired pneumonia, or pyelonephritis (urinary tract infection) discharged from the hospital early in their clinical course before defervescence by an infectious diseases hospitalist (LJE) were compared in a case-controlled study with 112 patients discharged from the hospital according to conventional standards of care by internal medicine (IM) hospitalists. Patients were matched for age, sex, diagnosis, and comorbidities. Outcomes were determined for average lengths of stay, readmission to the hospital within 30 days with the same diagnosis, satisfaction with their discharge program, and time to return to their normal activities of daily living.

RESULTS: Patients cared for by the infectious diseases hospitalist had a shorter average length of stay (mean difference, 1.7 days), no readmissions, higher satisfaction scores, and a shorter time to return to their activities of daily living, compared with those cared for by the IM hospitalists. Analysis of the antibiotics that patients were discharged with revealed that the infectious

diseases hospitalist used outpatient parenteral antibiotic therapy more frequently than IM hospitalists in the treatment of cellulitis, and switched from intravenous to oral antibiotics sooner than IM hospitalists for patients with community-acquired pneumonia and urinary tract infection.

CONCLUSIONS: The infectious diseases hospitalist discharged patients from the hospital earlier than the IM hospitalists by more efficient use of antibiotics. The earlier discharge did not adversely affect outcomes.

Type 2 diabetes: incremental medical care costs during the eight years preceding diagnosis

Nichols GA, Glauber HS, Brown JB. Diabetes Care 2000 Nov;23(11):1654-9.

OBJECTIVE: To describe and analyze medical care costs for the eight years preceding a diagnosis of type 2 diabetes.

RESEARCH DESIGN AND MEATHODS: From electronic records of a large group-model health maintenance organization (HMO), we ascertained the medical care costs preceding diagnosis for all members with type 2 diabetes who were newly diagnosed between 1988 and 1995. To isolate incremental costs (costs caused by the future diagnosis of diabetes), we subtracted the costs of individually age- and sex-matched HMO members without impending diabetes from the costs of members who were destined to receive this diagnosis. We also compared these prediagnosis costs with the first three years of postdiagnosis costs.

RESULTS: An economic burden from impending diabetes is apparent for at least eight years before diagnosis, beginning with costs for outpatient and pharmacy services. Diabetes-associated incremental costs (costs of type 2 diabetic patients minus matched costs of nondiabetic patients) averaged $1205 per type 2 diabetic patient per year during the first eight prediagnostic years, including $1913 each year for the three years preceding diagnosis. In the year immediately preceding diagnosis, incremental costs were equivalent to those observed in the second and third years after diagnosis.

CONCLUSIONS: Incremental costs of diabetes begin at least eight years before diagnosis and grow at an accelerating rate as diagnosis approaches and immediately after diagnosis. These incremental costs span the full range of medical services. Furthermore, the majority of these costs are for conditions not normally associated with diabetes or its complications.

Screening travelers for hepatitis A antibodies: an observational cost-comparison study of vaccine use

Lee KK, Beyer-Blodget JB. West J Med 2000 Nov;173(5):325-9.

OBJECTIVES: To measure the seroprevalence of antibodies to hepatitis A virus (anti-HAV) in a health plan population of travelers and to determine whether prevaccination screening for anti-HAV can reduce unnecessary vaccination and thus promote the most effective, economic use of hepatitis A vaccine.

DESIGN: Observational, cost-comparison study.

SETTING: Central injection clinic of a health maintenance organization medical center.

SUBJECTS: Five hundred twenty-seven adults who denied having previous hepatitis A or vaccination.

MAIN OUTCOME MEASURES: Subgroups with the greatest prevalence of anti-HAV seen between June 1995 and April 1996 for immunizations before traveling to nonindustrialized countries. Relative costs of their screening and immunization.

RESULTS: The presence of anti-HAV precluded the need for vaccination in 148 subjects (28.1%). The highest prevalence of anti-HAV (82.7%) was found in subjects born in nonindustrialized countries (62/75), in subjects who had previously traveled to areas of endemic hepatitis A (32.1% [135/420]), and in subjects born before 1945 (29.2% [92/315]). Costs of screening and vaccinating travelers were cheapest if prevaccination antibody sera testing was limited to subjects born in nonindustrialized countries and those born before 1945.

CONCLUSIONS: Prevaccination screening of travelers for hepatitis A can be done selectively on the basis of age and country of origin. This strategy could lead to a more economic use of the vaccine and clinic resources.

Prevalence of headaches in football players

Sallis RE, Jones K. Med Sci Sports Exerc 2000 Nov;32(11):1820-4.

BACKGROUND: Football coaches and team physicians rely heavily on players' reports of symptoms in deciding whether a player may return to the game after sustaining head trauma. The decision is made difficult by the wide variety of associated symptoms, some of which (eg, headache is among the most common) may or may not be associated with serious head injury. More information is needed about the clinical significance of football-related headache.

METHODS: To assess the frequency of headache associated with playing football, we analyzed responses to our questionnaire asking about incidence, frequency, and outcome of football-related headache from 443 football players (320 from college, 123 from high school).

RESULTS: Eighty-five percent of respondents reported previous headache related to hitting in football. Asked specifically about their most recent game, 21% of respondents reported having had headache during that game. Of players who had headache, only 19% informed the team physician, trainer, or coach, and only 6% were removed from the game. Twenty-seven percent of respondents reported previous diagnosis of cerebral concussion by medical personnel. Defensive backs (25%), defensive linemen (19%), and offensive linemen (18%) were most likely to have headache, related to hitting.

CONCLUSIONS: Our data confirm that posttraumatic headache is commonly associated with football participation and often goes unreported. Given that the most serious complications of head injuries (eg, second-impact syndrome) occur infrequently, headache as an isolated symptom lacks specificity in predicting such complications in football

players. Therefore, unless it persists or is accompanied by additional symptoms, headache alone may not reliably suggest the need to remove players from the game.

The relative importance of gestational gain and maternal characteristics associated with the risk of becoming overweight after pregnancy

Gunderson EP, Abrams B, Selvin S. Int J Obes Relat Metab Disord 2000 Dec;24(12):1660-8.

OBJECTIVES: To assess the relationships between gestational gain, race/ethnicity, reproductive history, age, education and the risk of becoming overweight after pregnancy.

STUDY DESIGN: Prospective cohort study of adult women from four race/ethnicity groups who had two consecutive births between 1980 and 1990 at the University of California, San Francisco (UCSF).

MEASUREMENTS: Height and pregravid weights for each pregnancy were self-reported. Women were classified as overweight or not overweight according to the Institute of Medicine (IOM) criteria for pregnancy. Gestational gain was defined as the difference between the pregravid weight and the last weight before delivery of the first study pregnancy.

SUBJECTS: 1300 healthy women aged 18-41 years who had a singleton, full-term, live birth (index or first study pregnancy) followed by a second birth. Self-reported pregravid weights and heights were used to calculate body mass index (BMI). Women with a pregravid BMI below 26.0 kg/m2 before the index pregnancy were classified as not overweight (n = 1128). Overweight status following the index pregnancy was based on pregravid BMI for the second pregnancy.

RESULTS: Seventy-two women (6.4%) became overweight following the index pregnancy. Statistically significant independent predictors of the risk of becoming overweight included: maternal age 24-30 vs above 30 years, high gestational gain, short interval from menarche to first ever birth (< 8 years), and young age at menarche (< 12 years). The risk of becoming overweight was increased 2.5-3 times for each of these risk factors. Whites were 4.5 times more likely to become overweight than Asians, but blacks and Hispanics did not appear to differ from whites. Parity, time interval, smoking habit, education, marital status and other factors were not associated with the risk of becoming overweight.

CONCLUSIONS: These findings suggest that young age at menarche, maternal age and short time from menarche to first ever birth may be as important as high gestational weight gain in determining the risk of becoming overweight after pregnancy.

SNAP-II and SNAPPE-II: Simplified newborn illness severity and mortality risk scores

Richardson DK, Corcoran JD, Escobar GJ, Lee SK. J Pediatr 2001 Jan;138(1):92-100.

OBJECTIVES: Illness severity scores for newborns are complex and restricted by birth weight and have dated validations and calibrations. We developed and validated simplified neonatal illness severity and mortality risk scores. The primary outcome was in-hospital mortality.

STUDY DESIGN: Thirty neonatal intensive care units in Canada, California, and New England collected data on all admissions during the mid 1990s; patients moribund at birth or discharged to normal newborn care in <24 hours were excluded. Starting with the 34 data elements of the Score for Neonatal Acute Physiology (SNAP), we derived the most parsimonious logistic model for in-hospital mortality using 10,819 randomly selected Canadian cases. SNAP-II includes six physiologic items; to this are added points for birth weight, low Apgar score, and small for gestational age to create a nine-item SNAP-Perinatal Extension-II (SNAPPE-II). We validated SNAPPE-II on the remaining 14,610 cases and optimized the calibration.

RESULTS: In all birth weights, SNAPPE-II had excellent discrimination and goodness of fit. Area under the receiver operator characteristic curve was .91 ± 0.01. Goodness of fit (Hosmer-Lemeshow) was 0.90.

CONCLUSIONS: SNAP-II and SNAPPE-II are empirically validated illness severity and mortality risk scores for newborn intensive care. They are simple, accurate, and robust across populations.

Vaccines and otitis media

Black S, Shinefield H. Pediatr Ann 2000 Oct;29(10):648-51.

CONTEXT: Otitis media is one of the most common infectious diseases in children and causes approximately 24.5 million doctor visits each year, according to a 1990 survey of office practices in the United States by the Center for Disease Control (CDC). Otitis media was the most frequent cause of an office visit for children under 15 years old and particularly affects one and two year olds. In a sample of 2807 children, 38% of the positive bacterial cultures of middle ear fluids contained Streptococcus pneumoniae.

In recent years, treating otitis media has become more difficult because of antibiotic resistant strains of the bacteria. Pneumococcal polysaccharide vaccines have been available for decades, but they had not been used to prevent otitis media because they do not induce immune responses for most serotypes in children under two years old.

OBJECTIVES: This study examined conjugate vaccines against the pneumococcus, which used the same technology as Haemophilus influenzae type b (Hib) conjugate vaccines that successfully induced immune responses and protected young children. Multiple serotypes of pneumococci are responsible for invasive disease and otitis media, therefore the vaccines contain conjugates for multiple serotypes to protect against the majority of disease. This study evaluated on a large scale the safety and efficacy of the first such conjugate vaccine, which has just been licensed in the United States.

PARTICIPANTS: The study population of children had a total of 47,392 visits for otitis media and 33,529 episodes of otitis from October 1995 to April 1998. A total of 5160 children had frequent otitis.

RESULTS: In more than 37,000 children in Northern California Kaiser Permanente, the vaccine was 97.4% effective in preventing invasive disease. The number of otitis media episodes decreased by 7.0%. The effectiveness of the vaccine against frequent otitis media increased from 9.5 to 22.8% as the frequency of episodes increased. During the study, 355 children needed ventilatory tube placement, while vaccinated children were 20.3% less likely than controls to require such tube placement.

CONCLUSION: With licensure of this heptavalent conjugate vaccine for routine use in the United States, we anticipate for the annual US birth cohort of 3.8 million children, that otitis media doctor visits will decrease by more than 1,000,000 visits and that up to 500,000 fewer children each year will undergo ventilatory tube placement. However, the impact on the average child's otitis media experience will be relatively modest.

At present, the ACIP has recommended routine vaccination with pneumococcal conjugate vaccine for all infants and children under age two as well as high risk children older than age two. We believe that vaccination of children over two years of age with frequent otitis media should also be considered.

Effect of physician and patient gender concordance on patient satisfaction and preventive care practices

Schmittdiel J, Grumbach K, Selby JV, Quesenberry CP Jr. J Gen Intern Med 2000 Nov;15(11):761-9.

OBJECTIVE: To explore the role of the gender of the patient and the gender of the physician in explaining differences in patient satisfaction and patient-reported primary care practice.

DESIGN: Cross-sectional mailed survey [response rate of 71%].

SETTING: A large group-model Health Maintenance Organization (HMO) in northern California.

PATIENTS/PARTICIPANTS: Random sample of HMO members aged 35 to 85 years with a primary care physician. The respondents (n = 10,205) were divided into four dyads: female patients of female doctors; male patients of female doctors; female patients of male doctors; and male patients of male doctors. Patients were also stratified on the basis of whether they had chosen their physician or had been assigned.

MEASUREMENTS AND MAIN RESULTS: Among patients who chose their physician, females who chose female doctors were the least satisfied of the four groups of patients for four of five measures of satisfaction. Male patients of female physicians were the most satisfied. Preventive care and health promotion practices were comparable for male and female physicians. Female patients were more likely to have chosen their physician than males, and were much more likely to have chosen female physicians. These differences were not seen among patients who had been assigned to their physicians and were not due to differences in any of the measured aspects of health values or beliefs.

CONCLUSIONS: Our study revealed differences in patient satisfaction related to the gender of the patient and of the physician. While our study cannot determine the reasons for these differences, the results suggest that patients who choose their physician may have different expectations, and the difficulty of fulfilling these expectations may present particular challenges for female physicians.

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Health and loyalty promotion visits for new enrollees: results of a randomized controlled trial

Thompson M, Gee S, Larson P, Kotz K, Northrop L. Patient Educ Couns 2001 Jan 1;42(1):53-65.

Managed care needs effective and efficient ways to orient new members, enhance trust and loyalty, and offer prevention and self-care education and services. Recent adult enrollees of Kaiser Permanente (Northern California) were randomly assigned to one of three intervention conditions (n = 286) (individual visit with a physician, physician visit plus a visit with a health educator, a group visit of eight new members led by a physician and health educator) or a random control group (n = 278). Outcomes were gauged via pre- and post-visit questionnaires and a 20-minute telephone survey at baseline and at a six-month follow-up. Compared to controls, attendees of the three interventions had higher satisfaction, self-rated prevention knowledge, acceptance of health plan guidelines, and were more likely to plan to remain in the health plan. Group visit attendees stood out as experiencing the greatest benefits and were especially likely to report saving a telephone call or visit to their doctor by using a self-care handbook.

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