PS2-18: Characterization of the Health Care of Patients with Impaired Fasting Glucose Compared to Those with Normal Fasting Glucose Managed in a Rural Multi-Specialty Medical Group Practice

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Abstract

Background/Aims: Patients with impaired fasting glucose (IFG) are at risk for developing diabetes and cardiovascular disease. The microvascular and macrovascular changes caused by diabetes often predate diabetes onset by years. Diabetes and its complications can be delayed and prevented by lifestyle modification and medical therapy. The extent to which patients in our rural health care environment receive such proven care strategies remains unknown. The aim of this study was to compare IFG patients to normoglycemic patients in clinical characteristics, risk factors for vascular disease, and co-morbid conditions, and the frequency and rigor with which they were evaluated and treated in a rural healthcare multispecialty group medical practice in Central Pennsylvania. Methods: A case-control study design was employed to address the aims of the study. Clinical data from patients treated at Geisinger Clinic between January 1, 2004 and August 31, 2009 were extracted from the Geisinger electronic health record and analyzed. Results: A total of 19,684 IFG patients and 19,684 controls were included in the study population. Compared with normoglycemic patients, IFG patients were slightly older (50.3 years vs. 47.7 years) and had more co-morbid illnesses (1.5 vs. 0.9 co-morbidities; p<0.0001). Despite this, IFG patients were evaluated only slightly more frequently for vascular disease, and risk factors for vascular disease were treated only slightly more rigorously than they were in normoglycemic patients with the vast majority of at-risk patients remaining suboptimally treated for modifiable risk factors for vascular disease. Conclusions: Despite impaired fasting glucose having been shown to be a marker for increased risk of type 2 diabetes and future cardiovascular disease, physicians in our rural multispecialty group practice do not appear to consistently discriminate between their management of patients with impaired fasting glucose and those with normoglycemia. Keywords: Pre-diabetes, Impaired fasting glucose


C-C2-03: Journey for Control of Diabetes: The Interactive Dialogue to Educate and Activate (IDEA) Study – Short-term Results of a Randomized Controlled Trial

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Abstract

Background/Aims: Group diabetes education for patients is cost-efficient and could be more effective than an individual approach. The objective is to determine whether outcomes of group education are comparable to individual education in the short-term. Methods: We identified 9,971 patients from two healthcare systems, ABQ Health Partners in New Mexico and HealthPartners in Minnesota, through electronic health records (EHR) with type 2 diabetes (T2DM) diagnostic codes and sub-optimal blood sugar control (A1c > 7%). Invitations were mailed from June 2008 - May 2009 and 623 (6.2%) were in normoglycemic patients with the vast majority of at-risk patients remaining suboptimally treated for modifiable risk factors for vascular disease. Conclusions: Despite impaired fasting glucose having been shown to be a marker for increased risk of type 2 diabetes and future cardiovascular disease, physicians in our rural multispecialty group practice do not appear to consistently discriminate between their management of patients with impaired fasting glucose and those with normoglycemia. Keywords: Pre-diabetes, Impaired fasting glucose


C-C2-02: Extreme Childhood Obesity is Associated with Lower Extremity Injuries

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Abstract

Background/Aims: Obesity rates for children and adolescents are increasing rapidly. The same age groups are also disproportionately affected by unintentional injury. Though evidence exists for the association between obesity and injury, we sought to estimate the association between degree of overweight/obesity and the occurrence of fractures, sprains, dislocations, and pain in the lower extremities. Methods: For this population-based, cross-sectional study, measured weight and height, and diagnosis of lower limb fractures, sprains, dislocations, and pain were extracted from electronic medical records of 914,271 patients aged 2-19 years who were enrolled in an integrated health plan 2007-2009. Weight class (underweight, normal weight, overweight, moderate and extreme obesity) was assigned based on body mass index-for-age. Results: Children and adolescents who were extremely

obese had an OR of 1.40 (95%-CI 1.35-1.45; p for trend<0.001) for any injury or pain in the lower limbs compared to children and adolescents with normal body weight after adjustments for sex, age, race/ethnicity, and socioeconomic factors. Similarly, extremely obese children and adolescents had increased relative odds for: fractures (OR 1.26, 95%-CI 1.20-1.33); sprains/strains (OR 1.47, 95%-CI 1.36-1.59), dislocations (OR 1.41, 95%-CI 1.36-1.47), and pain (OR 1.45, 95%-CI 1.24-1.70). For all injuries except dislocations, the odds ratios increased with increasing degree of overweight/obesity (p for trend <0.001), with underweight/adolescents having lower relative odds of all injuries and pain compared to the normal weight group. **Conclusions:** Overweight, obese, and extremely obese children/adolescents are more likely to experience lower extremity injuries and/or pain than are their underweight and normal weight peers. While the precise mechanism underlying these associations remains unclear, lower extremity injuries can reduce the physical activity in weight groups that need to increase activity levels to reduce or manage their weight.

**Keywords:** Obesity, Childhood, Injuries

**Plenary III-01:**

**HMORN Research on Pediatric Hypertension and Obesity: Predictors, Care, and Costs: Design of a New Pediatric Cohort**

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**Background:** The increasing numbers of children or adolescents having elevated blood pressure (BP) is an important public health problem, but little information is available regarding patterns of care or resource use implications in this population. We established a data cohort of children and adolescents to study these relationships. **Methods:** We have implemented a longitudinal cohort study based on routinely collected electronic medical record data from 3 large health plans. The study will ultimately extend from calendar year 2007 through 2012. We have currently extracted subject data through 2009. We will continue to accrue new subjects through 2012 and to add data for existing subjects in future years. The source population consists of children and adolescents (3-17 yr) enrolled in the 3 health plans. Beginning in Jan 2007, age-eligible subjects enter the cohort at the time of the first clinic visit in which an eligible BP is measured (i.e., collected during an outpatient visit and associated with a corresponding height measure). Subjects are being followed forward in time with longitudinal data collection. Demographic, clinical, and administrative data include age, gender, race/ethnicity, BP, height, weight, diagnoses, medications, and cost of care. We have conducted preliminary analyses to demonstrate the accrual of subjects into the cohort over years 2007 through 2009, and describing the gender, age, and racial composition of the study population. **Results:** As of the end of 2009, the cohort included 330,880 children and adolescents. At entry, 58.1% were 3-11 years of age, whereas 41.9% were 12-17 years. Subjects were 50.2% female. Race was 41.0% white (combining Hispanics and non-Hispanics), 8.1% African-American, 12.8% Asian/Pacific Islander, 16.3% other, and 21.8% missing. **Conclusions:** We have created a large pediatric cohort of subjects using data collected from health plan electronic medical and administrative records at several HMORN sites. These de-identified data include longitudinal BP, BMI, and utilization data suitable to test hypotheses related to correlation of BP and BMI over time, the influence of BMI on BP, patterns of care provided to those with elevated BP and BMI, and the influence of elevated BP and BMI on resource use.

**Keywords:** Predictors, Electronic medical records, Pediatric hypertension

**C-C2-04:**

**Diabetic Patients and Risk – It’s Not About the Numbers**

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**Background:** The major, common adverse health outcomes for patients with diabetes come from macrovascular, not microvascular, disease, including death, heart attack and stroke. Personalized risk information might help patients make better decisions about prioritizing health behavior change. In this study, we explored diabetic subjects’ beliefs about diabetes-related risks and sources of information along with reactions to presentation of personalized risk information. **Methods:** We recruited 56 English- and Spanish-speaking adults with diabetes and at least one other major cardiovascular risk factor from a community health center and an academic family medicine practice. In in-depth interviews, we explored sources of risk information, risk-reduction activities, and behavioral intentions. Subjects also ranked 6 diabetes-associated adverse outcomes based on perceived risk, reviewed personalized risk predictions from the UKPDS Outcomes Model, and re-ranked these perceived risk of outcomes. We explored their reasons for changing/not changing risk rankings. Qualitative analysis was used to develop themes and concepts underlying subjects’ risk perceptions and reactions to risk information. **Results:** Virtually all subjects believed at least some diabetes-related adverse outcomes were modifiable or preventable. A substantial minority expressed a fatalistic view that at least some were not preventable, while others felt that risk factor control meant an outcome was “not going to happen.” A very common theme was that a “warning shot” would occur before many outcomes, providing time and impetus to change bad habits. Provider urging was the other commonly-cited motivator and about 20% of subjects cited each as motivators for past change. While providers were cited as a key source of information, vicarious experience with relatives and acquaintances was cited just as often and 3/4 of subjects felt they knew themselves and their risks better than providers or risk models. Subjects reported the personalized risk information was interesting, but <1/3 changed their rankings of mortality (nearly always initially ranked least likely) to match the model predictions (nearly always the highest probability). **Conclusions:** Our subjects often based their risk perceptions on anecdote and gut feelings, not medical information. Personalized risk information does not appear promising for motivating behavior change or even altering risk perceptions.

**Keywords:** Diabetes, Risk perception

**C-B5-05:**

**Early Childhood Obesity Prevention in Primary Care: Opt-In Versus Opt-Out Recruitment Strategies**

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**Background:** Although early childhood obesity prevention programs are needed in primary care to address the growing pediatric obesity epidemic, recruitment remains particularly challenging. **Aims:** To describe opt-in versus opt-out recruitment strategies to invite parents of overweight/obese 4-8 year olds to participate in a family lifestyle modification obesity prevention study in primary care. **Methods:** Following IRB approval, traditional recruitment strategies were employed including flyers, doctor referrals, and public ads to invite parents of 4-8 year olds with a Body Mass Index (BMI) > 85th percentile for age and sex to call (Opt-In) about participating in a 5-month primary care obesity prevention intervention. Electronic Health Records were searched and physician letters were sent to parent/guardian of eligible children who resided at zip codes within 1-hour commute of treatment site to invite them to call about the study. Opt In letters were mailed over 13-months for Cohorts 1-3 recruitment. For Cohort 4, identical physician letters were mailed except parents were asked to call if they were NOT interested in information about the study (Opt-OUT). After 10 days, study staff called to...