

PCV31

DECLINING ISCHEMIC STROKE-RELATED INPATIENT UTILIZATION: RECENT TRENDS ANALYSIS OF UNITED STATES NATIONAL DATA 2000–2005

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OBJECTIVES: We previously reported recent increases in outpatient utilization for ischemic stroke. We examined corresponding trends in ischemic stroke-related inpatient utilization using national US data. **METHODS:** We identified all US hospitalizations for ischemic stroke (IS) [ICD-9-CM codes 433.x1, 434, and 436] in adults aged ≥18 years using data from the Healthcare Cost and Utilization Project–Nationwide Inpatient Sample for years 2000 to 2005. Rates of IS-related hospitalizations were calculated by number of IS-related hospital admissions divided by yearly population estimates from US Census data. Rates are per 1000 and age-adjusted to the 2000 US Standard Population. We examined trends in IS-related hospitalizations, exploring sociodemographic and geographic variability based on patient (race, age, gender, insurance) and hospital (region, urban/rural location) characteristics. **RESULTS:** In 2004–2005, an estimated 0.83 million IS-related hospitalizations were identified, representing a 10% decline from 0.92 million hospitalizations in 2000–2001. The proportion of IS-related hospitalizations declined among adults aged 65–84 years from 57% (population estimate, 526,743) in 2000–2001 to 52% (435,477) in 2004–2005. This decline was partially offset by an increased proportion of IS-related hospitalizations by adults aged 45–64 years from 21% (190,000) in 2000–2001 to 24% (202,000) in 2004–2005. From 2000–2001 to 2004–2005, the proportion of IS-related hospitalizations by whites decreased from 58% (534,000) to 53% (445,000) but those by Blacks remained relatively stable at 10% (95,000). The frequency of IS-related admissions to urban hospitals increased slightly from 81% in 2000–2001 to 84% in 2004–2005. Overall, the US age-adjusted IS-related hospitalization rate declined from 2.3/1,000 in 2000 to 1.9/1,000 in 2005, representing a 17% decrease over the 6-year period. **CONCLUSIONS:** From 2000–2001 to 2004–2005, IS-related hospitalizations declined substantially, primarily among whites and the elderly, but increased among middle-aged adults. Further research is needed to understand the causes and consequences of observed inpatient and outpatient utilization trends for IS.

PCV32

RISK FACTORS ASSOCIATED WITH PREVALENCE OF HYPERTENSION: EVIDENCE FROM THE 2007 KOREA NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY (K-NHANES)

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OBJECTIVES: The purpose of this study was to find risk factors associated with high prevalence of hypertension. **METHODS:** The analysis was based on the 2007 Korean National Health and Nutrition Examination Survey (K-NHANES), a cross-sectional survey of the civilian, non-institutionalized population in Korea including an in-home interview and a clinic examination which included measurement of blood pressure. The logistic regressions were utilized to find association of various risk factors and hypertension among the Korean population. All results were weighted considering survey design of K-NHANES such as stratification and primary survey unit. **RESULTS:** The dataset consisted of a total of 2797 individuals, 23.26% of elderly (≥65 years old) and 57.5% of female. About 32% of people were overweight (BMI≥25 kg/m²) or obese (BMI≥30 kg/m²), and the prevalence in diabetes and kidney disease in the sample were 7.5% and 0.6%, respectively. According to the regression results, age, BMI, and comorbid conditions such as diabetes and kidney diseases were significantly related to hypertension in the Korean population. The elderly Koreans were three times as likely to be diagnosed with hypertension relative to the nonelderly population (odds ratio (OR): 2.86, p-value <0.001). Obese or overweight Koreans were two times more prone to have hypertension relative to normal weight individuals (OR: 2.44, p-value <0.001). People with diabetes had a risk factor of contracting hypertension which was four times than people without diabetes (OR: 3.53, p-value <0.001). Finally, patients with kidney disease were seventeen times more likely to be diagnosed with hypertension relative to those without kidney disease (OR: 16.87, p-value = 0.012). **CONCLUSIONS:** The results provide evidence of the association between varying risk factors and hypertension among Koreans, and insights for both public health officials and physicians to treat or prevent hypertension patients.

PCV33

WHAT IS THE IMPACT OF SWITCHING FROM AN ACE INHIBITOR TO AN ANGIOTENSIN RECEPTOR BLOCKER ON BLOOD PRESSURE AND CARDIOVASCULAR EVENTS?

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OBJECTIVES: To assess the impact of switching between an ACE Inhibitor (ACEI) and an Angiotensin Receptor Blocker (ARB) on blood pressure (BP) control and cardiovascular CV events in a real-world setting. **METHODS:** Records from a longitudinal population-based database of more than 170,000 patients in over 53 family practice clinics in southwestern Ontario, Canada were analyzed. These records contained chart-abstracted information such as visit diagnosis, BP, medications and consultation notes. The records from 8,388 adult hypertensive patients treated in mono or combination therapy and who switched between an ACEI and an ARB, (while

keeping other agents constant) were included. Hypertension was defined as a BP exceeding 140/90 mmHg, chart entry of a diagnosis of hypertension, or use of anti-hypertensive medication. Systolic and diastolic BPs and the number of patients who experienced a CV event were recorded. **RESULTS:** Reductions in mean systolic BP when patients were switched from ACEI to ARB were 8 mmHg (p < 0.002), 7 mmHg (p < 0.005), and 8 mmHg (p < 0.005) in mono, dual and tri-therapy respectively while patients who were switched from ARB to ACEI had change in of +1 mmHg, –8 mmHg (p < 0.001) and –5 mmHg (p < 0.005) in mono, dual and tri-therapy respectively. More ARB to ACEI switchers experienced at least one CV event (2.5% versus 0.5% in patients who remain on an ARB monotherapy (p = 0.001) and 1.8% versus 0.8% in patients who remain on an ARB based dual therapy (p = 0.002)). **CONCLUSIONS:** In a real-world setting, switching patients from an ACEI to an ARB had a positive impact on mean systolic BP reduction. When compared to those who remain on an ARB, patients who switched from an ARB to an ACEI experienced more CV events.

PCV34

ATRIAL FIBRILLATION EPIDEMIOLOGY AND MANAGEMENT IN PRIMARY CARE

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OBJECTIVES: To determine the prevalence of patients diagnosed with atrial fibrillation, their demographic characteristics and pharmacologic management. **METHODS:** Records from a longitudinal population-based database of more than 170,000 patients in over 53 family practice clinics in southwestern Ontario, Canada were analyzed. These records contained chart-abstracted information such as visit diagnosis, medications and consultation notes. Patients with atrial fibrillation were identified by ICD9 code, the presence of anti-arrhythmic medication or diagnostic information revealing atrial fibrillation. Comparison included patient characteristics (CV history of hypertension, heart failure, dyslipidemia, coronary heart disease, diabetes; presence of concomitant medications including oral anti-coagulants, beta blockers, ACE inhibitors, and ARBs, diuretics, Digoxin, calcium channel blockers, statins, and NSAIDs) by treatment with anti-arrhythmic drugs including, amiodarone, sotalol, propafenone, and flecainide. **RESULTS:** A total of 4922 patients with the diagnosis of atrial fibrillation revealed a prevalence of 3% in our cohort. Mean age of those with atrial fibrillation was 78 years with 53% male. 42% of patients with atrial fibrillation also had diagnosis of hypertension; 19% had diagnosis of congestive heart failure (with the majority of these in Class 3 and 4); 28% had a history of coronary artery disease; 18% had a history of diabetes; and 20% had a diagnosis of dyslipidemia. Concomitant medications included oral anticoagulant (28%), statin (28%) and digoxin (22%). Most patients diagnosed with atrial fibrillation were on rate control medications with sotalol being most common followed by amiodarone, propafenone and flecainide. There is no difference in the distribution of patients with previous cardiovascular history or concomitant medications across anti-arrhythmic drugs used. **CONCLUSIONS:** In patients with atrial fibrillation, there is a high rate of concomitant cardiovascular morbidity. Most patients are treated with anti-arrhythmic medications primarily sotalol and amiodarone. Comorbidity or concomitant medications do not appear to influence the choice of the anti-arrhythmic used.

PCV35

SEASONAL VARIATION AND INFLUENCE OF METEOROLOGICAL FACTORS IN CASE OF ACUTE CEREBROVASCULAR EVENTS

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OBJECTIVES: The purpose of our present study was to investigate whether the time of onset of an acute cerebrovascular event demonstrates a seasonal variation, and whether the occurrence of this is influenced by certain meteorological factors. **METHODS:** We have examined patients admitted to the Department of Neurology in Hungary between 2005 and 2007 with the diagnosis of a cerebral hemorrhage (n = 11,604) or a transient ischemic attack (n = 12,513). Data was collected from the database of the Hungarian National Health Insurance Fund on the basis of International Classification of Diseases (ICD). (ICD codes G4580, G4590, I6100-I6190). Meteorological data (temperature, atmospheric pressure, relative humidity) was retrieved from the National Meteorology Service. Statistical analysis was carried out with SPSS 14.0 for Windows. **RESULTS:** Analysis of meteorological data showed that an increase in average temperature on the previous day resulted in a notable drop of cerebral hemorrhage incidence during all seasons (p < 0.05), while in case of transient ischemic attack such a decrease only occurred during Summer (p < 0.05). Examining atmospheric pressure and relative humidity (p < 0.05) only a demonstrative variation was found in case of cerebral infarction. **CONCLUSIONS:** In summary, our results indicate that the incidence of cerebral infarction, cerebral hemorrhage, and a transient ischemic attack show a typical variation depending on the season of the year and temperature as well have an influence in the development of different cerebrovascular events.