

those with IA. These results underscore the importance of histopathologic diagnosis in patients with anaphylaxis suspected to have mast cell disease.

264 Rate of Infections, Costs and Healthcare Resource Use in Patients with Undiagnosed Primary Immune Deficiency (PI)

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RATIONALE: To determine the incidence rates of 11 common infections found in undiagnosed PI patients and estimate the economic burden associated with the disease during the 12-month period preceding diagnosis.

METHODS: Retrospective database analysis of an employer database, containing medical, pharmaceutical, and enrollment information from 2000 to 2005. Incidence rates of infections were calculated for the 12-month period preceding the first recorded IVIG use. Cost (outpatient, inpatient, ER, and pharmaceutical costs) and resource utilization were examined for the same time period.

RESULTS: 293 continuously enrolled patients (with at least two distinct records of PI diagnosis and no IVIG use before the first diagnosis) were included in the study. Mean age was 44.4 years (sd = 17.0), and 64.8% of the patients were female. 61.4% of the patients had a diagnosis of hypogammaglobulinemia. The most common infections were chronic and acute sinusitis found in 35.8% and 33.5% of the patients, respectively. Additionally, 21.2% suffered acute bronchitis and 20.5% had at least one episode of pneumonia. Total medical cost per patient was \$42,039/year. Outpatient (\$22,558) and inpatient (\$12,983) costs were the main drivers of this total. Pharmaceutical costs (\$6,279) accounted for 14.9% of the spending. The average number of office visits and the number of inpatient admissions per year were 27.2 and 0.7, respectively. Average inpatient length of stay was 5.0 days.

CONCLUSIONS: Undiagnosed PI is associated with a substantial cost and resource use burden. Further research is needed to examine the impact of early recognition and treatment of PI from clinical and cost perspectives.

265 Asthma Quality of Care Measures Using Administrative Data: Relationships to Subsequent Exacerbations in Multiple Databases

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RATIONALE: Administrative data are used to assess asthma quality of care, but process measures that are consistently associated with improved outcomes have not been defined.

METHODS: Patients aged 5-56 who were continuously enrolled in 2003 and 2004 and met the Health Plan Employer Data and Information Set (HEDIS) definition of persistent asthma in 2003 were evaluated separately in three large managed care databases. Three potential markers of quality care were evaluated in 2003 data: at least 1 pharmacy fill of any controller (as defined by HEDIS); at least 4 pharmacy fills of any controller; ratio of controllers to total medications ≥ 0.5 . The outcome measure was 2004 exacerbations, defined as a hospitalization or emergency department visit with a primary diagnosis of asthma, or a dispensing of an oral corticosteroid medication.

RESULTS: The three databases included 51,986-74,115 HEDIS denominator patients each. In all three databases, a significantly ($p < 0.001$) increased incidence of exacerbations occurred in patients with any controller (23.0-30.4%) or four or more controllers (23.2%-31.4%) compared to patients with no controller (21.0%-23.6%) or less than four controllers (22.0%-26.5%) respectively. In contrast, patients with a ratio ≥ 0.5 experienced a significantly ($p < 0.0001$) reduced prevalence of exacerbations (21.7%-29.2%) compared to patients with a ratio < 0.5 (26.0%-32.0%) in all datasets.

CONCLUSIONS: Any or four or more controllers function more as a severity marker than a quality of care marker in the HEDIS denominators in these datasets. In contrast, the ratio measure is associated with improved outcomes.

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266 Assessment of Healthcare Utilization Associated with the Health Employer Data and Information Set (HEDIS) Measure, Use of Appropriate Medications for People with Asthma

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RATIONALE: Using the 2005 HEDIS definition, patients who received appropriate asthma treatment had increased rates of asthma-related hospitalizations/emergency department (ED) visits compared to those who didn't receive appropriate treatment. We assessed the association between appropriate asthma treatment and asthma-related hospitalizations/ED visits using the revised 2006 HEDIS definition.

METHODS: We used HIPAA-compliant pharmacy and medical claims data from >13 million individuals to identify commercial health plan enrollees, aged 5-56 years, with persistent asthma during calendar years (CYs) 2004 and 2005. Patients with ≥ 1 dispensing event for a 2006 HEDIS-defined controller medication during CY 2005 were considered as having use of appropriate asthma medications. We classified patients as with or without use of appropriate asthma medications, and compared rates of asthma-related hospitalizations/ED visits.

RESULTS: Among 61,812 identified patients the overall rate of HEDIS-measure adherence was 92.9%. Measure adherence rates of those aged 5-9, 10-17, and 18-56 were 97.1%, 95.4%, and 91.3%, respectively. Within each group, patients with appropriate use had lower rates of hospitalizations/ED visits than those who did not (9.5% vs 58.2%, 6.7% vs 34.0%, 6.0% vs 17.4%, respectively; $P < 0.0001$ for all comparisons). Overall, patients with HEDIS-measure adherence had lower rates of hospitalizations/ED visits than patients without HEDIS-measure adherence (6.7% vs 21.9%, respectively; $P < 0.0001$).

CONCLUSION: We found 92.9% adherence to the 2006 HEDIS measure, Use of Appropriate Medications for People with Asthma, suggesting a ceiling effect. Using the 2006 HEDIS measure, patients without appropriate asthma medications use had more than triple the risk for asthma-related hospitalizations/ED visits compared to patients with appropriate use.

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