11:45 am – 2:00 pm
Tuesday, April 28th • Lobby

PS2 – 27

Identification of Patients With Nonmelanoma Skin Cancer Using HMO Claims Data

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Background: Despite the large population affected, the epidemiology of nonmelanoma skin cancer (NMSC) is understudied, and US cancer registries often exclude NMSC. Secondary data analysis has been limited in that squamous cell (SCC) and basal cell carcinoma (BCC) do not have their own unique International Classification of Disease (ICD-9) identifiers. Our aim was to define and compare algorithms for identifying NMSC by secondary analysis using a computerized database of a large health maintenance organization (HMO).

Methods: A computerized claims database of a large HMO in Southeastern Michigan was used to identify NMSC patients who were diagnosed between January 1, 1988 to December 31, 2007. Three algorithms were examined: NMSC ICD-9 codes, Current Procedural Terminology (CPT) code for treatment of malignant NMSC, or both ICD-9 and CPT codes. A subset of charts for the overall cohort and all charts from 2007 HMO-enrollee members only were reviewed to verify NMSC diagnosis. Positive predictive values were calculated.

Results: Analyses of data from 1988-2007 identified NMSC in 165,000 patients using ICD-9 codes, 44,875 patients by CPT codes and 113,666 patients who had both codes. A random sample of 1275 cases were selected for chart review to verify NMSC, which was validated in 73.7% of ICD-9 identified patients, 94.6 % of CPT-identified patients, and 97.5% of patients identified using both codes. Data was then limited to HMO-health plan enrollee-only unique patients for the year 2007, and all charts were reviewed (N=1116). NMSC cases were confirmed via chart review in 96.7% of ICD-9 identified patients, 98.5% of CPT-identified patients, and 98.9% of patients identified using both codes.

Conclusions: HMO computerized claims data can be used to identify NMSC. Preliminary analysis suggests that the use of an algorithm which requires that both a CPT and ICD-9 code be recorded may be slightly better compared to either ICD-9 or CPT codes for case identification. This algorithm should be validated in a population captured by reputable tumor registry to determine sensitivity and specificity.