FACTORS ASSOCIATED WITH SUBOPTIMAL ADHERENCE TO HUMAN IMMUNODEFICIENCY VIRUS THERAPY

Campbell RS1, Spoeri RK1, Harris AD2, Kothari S3, Fiske S1, Hays HD1, Emons MF1

OBJECTIVES: Adherence to medications is an integral component of treating human immunodeficiency virus (HIV). The objective of this study was to identify factors associated with suboptimal adherence to HIV therapy (MPR < 95%). METHODS: HIV patients were identified by a pharmacy claim between January 1, 2008 and November 30, 2008, for a non-nucleoside reverse transcriptase inhibitor, protease inhibitor, nucleoside reverse transcriptase inhibitor, entry inhibitor, integrase inhibitor or combination medication, using a large de-identified administrative claims database. MPR was calculated by ratio (MPR = calculated using their index prescription for those patients continuously enrolled and with at least two fills per medication. For patients utilizing more than one HIV medication, a mean was calculated, weighted by length of time on each medication. Logistic regression was used to identify factors associated with suboptimal adherence. RESULTS: The analysis included 18,497 patients (20.0% female, mean age 46.7 years). Mean MPR was 87.2% (95% CI: 86.9-87.4%), with 48.6% of patients having suboptimal adherence. Suboptimal adherence associated with female gender (OR = 1.55, 95% CI: 1.44-1.68), dispenses from retail pharmacies (OR = 1.54, 95% CI: 1.43-1.67), less than three months supply per dispense (OR = 1.38, 95% CI: 1.26-1.52), patient age less than 45 years (OR = 1.26, 95% CI: 1.18-1.34), using more than one pharmacy for HIV medications (OR = 1.20, 95% CI: 1.11-1.29), being new to therapy (OR = 1.12, 95% CI: 1.04-1.19), taking only 1 pill per day (OR = 1.09 for each additional pill per day, 95% CI: 1.06-1.12) and using more HIV medications (OR = 1.08 for each additional medication, 95% CI: 1.06-1.11). Type of insurance coverage and amount of copay were not significantly associated with suboptimal adherence. CONCLUSIONS: Knowledge of factors related to suboptimal adherence can help identify HIV patients who may require additional attention during their course of care.

INFECTION – Conceptual Papers & Research on Methods

FEASIBILITY STUDY OF A NOVEL METHOD TO QUANTIFY SURGICAL INTERVENTIONS IN PATIENTS WITH COMPLICATED SKIN AND SKIN STRUCTURE INFECTIONS (CSSI) USING HOSPITAL ELECTRONIC HEALTH RECORD DATA

Simon MF1, Campbell RS1, Kothari S1, Fiske S1, Hays HD2, Zilberg MB2

OBJECTIVES: CSSI may be associated with significant morbidity and cost. ICD-9-CM diagnosis codes have been used to identify CSSI in health care databases. Although early surgical interventions may provide important severity adjustment information, minor (bedside) surgical procedures may be under-reported in hospital data. We explored a novel method to identify surgical interventions using culture descriptions. METHODS: We conducted an analysis (April 2005-March 2009) of the HealthFacts® database (Cerner Corp., Kansas City, MO), containing comprehensive clinical records from 115 US hospitals. We included all adult initial admissions with ICD-9-CM diagnosis codes specific to cSSSI and with eligible positive cultures (from pre-defined skin/soft tissue sources or from blood) within the first 48 hours. In addition to using ICD-9-CM codes to identify procedures, we identified surgical interventions as “presumed” when a culture was from a source/site that would require a procedure to obtain (e.g., abscess, aspirate, excision site). Because ICD-9-CM codes have been used to identify cSSSI in health care databases. We used the Centers for Disease Control and Prevention’s guidelines to analyze the likelihood of a patient being prescribed a late-type regimen. Our model was validated using a large de-identified administrative claims database for adult patients with continuous benefit eligibility were analyzed for; antiretroviral drug regimen, presence of co-morbid illnesses (across 50 diseases), and basic demographics. Regimen identification was based on drug combinations included in the 2008 DHHS Guidelines for the Use of Antiretroviral Agents in HIV-1 Infected Adults and Adolescents. Late-type regimens included enfuvirtide, etravirine, maraviroc, or raltegravir. A multivariate logistic regression model was utilized across drug-centric and patient-centric domains to analyze the likelihood of a patient being prescribed a late-type regimen. RESULTS: N = 15,828 patients initially included in the model and n = 1,838 (11.6%) identified with a claim for the target drug(s). Five or more drug regimens (OR = 32.81; CI: 28.29−38.04) and three or more average number of drugs per regimen (OR = 4.13; CI: 3.15 − 4.87) are the strongest predictors and dominate the model. CONCLUSIONS: Ability to develop and apply a highly predictive model identifying patients suitable for drugs typically prescribed later in therapy is a challenging. Personalized approaches for the therapeutic management of HIV/AIDS are needed. A national database of pharmacy claims was analyzed to develop a predictive model that can be used with traditional measures for regimen selection. METHODS: Beginning April 2006 to March 2009, prescription claim data for 15,828 patients with continuous benefit eligibility were analyzed for; antiretroviral drug regimen, presence of co-morbid illnesses (across 50 diseases), and basic demographics. Regimen identification was based on drug combinations included in the 2008 DHHS Guidelines for the Use of Antiretroviral Agents in HIV-1 Infected Adults and Adolescents. Late-type regimens included enfuvirtide, etravirine, maraviroc, or raltegravir. A multivariate logistic regression model was utilized across drug-centric and patient-centric domains to analyze the likelihood of a patient being prescribed a late-type regimen. RESULTS: N = 15,828 patients initially included in the model and n = 1,838 (11.6%) identified with a claim for the target drug(s). Five or more drug regimens (OR = 32.81; CI: 28.29−38.04) and three or more average number of drugs per regimen (OR = 4.13; CI: 3.15 − 4.87) are the strongest predictors and dominate the model. CONCLUSIONS: Ability to develop and apply a highly predictive model identifying patients suitable for drugs typically prescribed later in therapy is a challenging. Personalized approaches for the therapeutic management of HIV/AIDS are needed. A national database of pharmacy claims was analyzed to develop a predictive model that can be used with traditional measures for regimen selection. METHODS: Beginning April 2006 to March 2009, prescription claim data for 15,828 patients with continuous benefit eligibility were analyzed for; antiretroviral drug regimen, presence of co-morbid illnesses (across 50 diseases), and basic demographics. Regimen identification was based on drug combinations included in the 2008 DHHS Guidelines for the Use of Antiretroviral Agents in HIV-1 Infected Adults and Adolescents. Late-type regimens included enfuvirtide, etravirine, maraviroc, or raltegravir. A multivariate logistic regression model was utilized across drug-centric and patient-centric domains to analyze the likelihood of a patient being prescribed a late-type regimen. RESULTS: N = 15,828 patients initially included in the model and n = 1,838 (11.6%) identified with a claim for the target drug(s). Five or more drug regimens (OR = 32.81; CI: 28.29−38.04) and three or more average number of drugs per regimen (OR = 4.13; CI: 3.15 − 4.87) are the strongest predictors and dominate the model. CONCLUSIONS: Ability to develop and apply a highly predictive model identifying patients suitable for drugs typically prescribed later in therapy is a challenging. Personalized approaches for the therapeutic management of HIV/AIDS are needed. A national database of pharmacy claims was analyzed to develop a predictive model that can be used with traditional measures for regimen selection. METHODS: Beginning April 2006 to March 2009, prescription claim data for 15,828 patients with continuous benefit eligibility were analyzed for; antiretroviral drug regimen, presence of co-morbid illnesses (across 50 diseases), and basic demographics. Regimen identification was based on drug combinations included in the 2008 DHHS Guidelines for the Use of Antiretroviral Agents in HIV-1 Infected Adults and Adolescents. Late-type regimens included enfuvirtide, etravirine, maraviroc, or raltegravir. A multivariate logistic regression model was utilized across drug-centric and patient-centric domains to analyze the likelihood of a patient being prescribed a late-type regimen. RESULTS: N = 15,828 patients initially included in the model and n = 1,838 (11.6%) identified with a claim for the target drug(s). Five or more drug regimens (OR = 32.81; CI: 28.29−38.04) and three or more average number of drugs per regimen (OR = 4.13; CI: 3.15 − 4.87) are the strongest predictors and dominate the model. CONCLUSIONS: Ability to develop and apply a highly predictive model identifying patients suitable for drugs typically prescribed later in therapy is a challenging. Personalized approaches for the therapeutic management of HIV/AIDS are needed. A national database of pharmacy claims was analyzed to develop a predictive model that can be used with traditional measures for regimen selection. METHODS: Beginning April 2006 to March 2009, prescription claim data for 15,828 patients with continuous benefit eligibility were analyzed for; antiretroviral drug regimen, presence of co-morbid illnesses (across 50 diseases), and basic demographics. Regimen identification was based on drug combinations included in the 2008 DHHS Guidelines for the Use of Antiretroviral Agents in HIV-1 Infected Adults and Adolescents. Late-type regimens included enfuvirtide, etravirine, maraviroc, or raltegravir. A multivariate logistic regression model was utilized across drug-centric and patient-centric domains to analyze the likelihood of a patient being prescribed a late-type regimen. RESULTS: N = 15,828 patients initially included in the model and n = 1,838 (11.6%) identified with a claim for the target drug(s). Five or more drug regimens (OR = 32.81; CI: 28.29−38.04) and three or more average number of drugs per regimen (OR = 4.13; CI: 3.15 − 4.87) are the strongest predictors and dominate the model. CONCLUSIONS: Ability to develop and apply a highly predictive model identifying patients suitable for drugs typically prescribed later in therapy is a challenging. Personalized approaches for the therapeutic management of HIV/AIDS are needed. A national database of pharmacy claims was analyzed to develop a predictive model that can be used with traditional measures for regimen selection.