PND52

FACTORS ASSOCIATED WITH A HISTORY OF FAILURE AND SWITCHING MIGRAINE PROPHYLAXIS TREATMENT: AN ANALYSIS OF CLINICAL PRACTICE DATA FROM THE UNITED STATES, GERMANY, FRANCE, AND JAPAN

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OBJECTIVES: To explore factors associated with a history of failure and switching migraine prophylaxis treatments in the USA, Germany, France, and Japan. **METHODS:** Data were drawn from the 2014 Adelphi Migraine Disease Specific Program, a cross sectional survey of physicians and their consulting migraine patients across USA, Germany, France, and Japan. Using physicians as the clustering unit, multivariable logistic regression was used to explore factors associated with patients' history of prophylaxis use (1stprophylaxis vs. history of failure and switching a prophylaxis regimen), controlling for demographic characteristics, monthly headache days (HD); migraine-specific acute medications; time since migraine diagnosis (DD); anxiety; depression; body mass index, over the counter medications used, number of comorbidities (NC); physician specialty (primary care physicians-PCPs, neurologists, internists); Migraine Disability Assessment (MIDAS) scores; EuroQol 5-Dimensions scores; and country. **RESULTS:** The study included 444 physicians and 4,319 patients. Of 1,865 patients using prophylaxis, 42.7% had a history of failure and switching. Across the HD stratifications of 0-3; 4-7; 8-14; and ≥15, mean (SD) of MIDAS scores in patients on 1stprophylaxis vs. patients with a history of failure and switching were: 4.3 (6.5) vs. 7.8 (12.1); 11.0 (14.9) vs. 13.8 (20.5); 16.9 (18.6) vs. 18.4 (21.6); 37.3 (37.6) vs. 57.1 (54.5) respectively. At α=0.05, patients with 8-14 vs.0-3 HD (odds ratio-OR=1.81), that lived longer with migraines (DD: OR=1.07), with more comorbidities (NC: OR=1.38), treated by a neurologist vs. PCP (OR=1.85) were more likely to have a history of failure and switching a migraine prophylaxis treatment. **CONCLUSIONS:** Headache frequency (8-14 vs.0-3), disease duration, and comorbidities are associated with a history of failure and switching migraine prophylaxis. Nearly half of patients on prophylaxis have a history of failure and switching migraine prophylaxis treatments, yet continue to present with substantial migraine disability, demonstrating significant unmet need in migraine prophylaxis treatments.

PND53

CHARACTERIZING PATIENT-REPORTED HEALTH-RELATED QUALITY-OF-LIFE MEASURES AMONG USERS AND NON-USERS OF MIGRAINE PROPHYLAXIS TREATMENT: AN ANALYSIS OF CLINICAL PRACTICE DATA FROM THE UNITED STATES, GERMANY, FRANCE, AND JAPAN

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OBJECTIVES: To characterize patient reported health-related quality of life (HRQoL) measures among migraine prophylaxis users and non-users in the USA, Germany, France, and Japan. **METHODS:** Data were drawn from the 2014 Adelphi Migraine Disease Specific Program, a cross sectional survey of physicians and their consulting migraine patients across the USA, France, Germany and Japan. Using physicians as the clustering unit, multivariable linear regression examined factors associated with HRQoL (Migraine Disability Assessment scale - MIDAS; EuroQoL 5 Dimension – EQ-5D), controlling for demographic characteristics, prophylaxis use, monthly headache days (HD: 0-3, 4-7, 8-14, ≥15); migraine-specific acute medications (ACM: 0, 1, >1); time since migraine diagnosis; anxiety; depression; body mass index, over-the-counter medication use; physician specialty; and country. **RESULTS:** Of 1,972 patients with complete MIDAS scores, 61% were prophylaxis non-users. Mean (SD) MIDAS scores for patients with 4-7, 8-14, and ≥15 HD were: 10.7 (16.5), 16.0 (16.5), and 24.8 (41.6) among prophylaxis non-users and 11.8 (17.1), 17.1 (19.8), and 44.1 (41.1) in prophylaxis users, respectively. Mean (SD) EQ-5D scores for patients with 4-7, 8-14, and ≥15 HD were: 0.90 (0.14), 0.85 (0.20), 0.81 (0.19) in prophylaxis non-users and 0.88 (0.15), 0.83 (0.15), and 0.70 (0.27) among prophylaxis users, respectively. Higher MIDAS scores were significantly associated with: higher HD, prophylaxis users (β=7.51), >1 ACM (β=7.35), neurologists vs primary-care physicians (β=8.11), and females (β=3.46). Lower EQ-5D scores were associated with HD ≥8 (8-14, β=-0.06, and ≥15, β=-0.17), number of comorbidities (β=-0.02), anxiety (β=-0.04), depression (β=-0.05). German patients (vs. U.S) reported higher EQ-5D scores (β=0.08). **CONCLUSIONS:** These cross-sectional results may be confounded by severe patients being more likely to use migraine therapies. However, the analysis highlights a persistence of substantial burden of migraine disability and HRQoL impairments in patients using prophylaxis. This underscores the need for better therapies to reduce migraine disability and improve HRQoL.

PND54

PREVALENCE, PATTERNS, AND PREDICTORS OF PSYCHOTROPIC POLYPHARMACY AMONG COMMUNITY-DWELLING ELDERLY INDIVIDUALS WITH PARKINSON'S DISEASE IN THE UNITED STATES

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OBJECTIVES: To examine nationally representative prevalence, patterns and predictors of psychotropic polypharmacy among community-dwelling elderly individuals with Parkinson's disease (PD) in the United States. **METHODS:** A retrospective, cross-sectional study design was adopted by pooling Medical Expenditure Panel Survey (MEPS) data from 2002-2012. Elderly (age ≥ 65 years) individuals with PD (identified by ICD-9-CM code of 332.xx), who were alive during the particular calendar year constituted the study sample. Psychotropic medication classes consisted of antidepressants, antipsychotics, sedative/hypnotics, and anti-anxiety medications. Use of two or more psychotropic medications concurrently was defined as psychotropic polypharmacy. Predictors of psychotropic polypharmacy were assessed by conducting multivariable logistic regression. All analyses were conducted by using survey procedures in SAS, which adjusted for the complex survey structure of MEPS and provided national level estimates. **RESULTS:** National-level prevalence of psychotropic polypharmacy among community-dwelling elderly individuals with PD was 14.7% [95% Confidence Interval (CI), 8.69% - 20.71%]. Antidepressants (33.9%, 95% CI, 26.2% – 41.6%) comprised the highest psychotropic medication class used followed by anti-anxiety (12.7%, 95% CI, 7.34% - 18.07%), antipsychotics (8.25%, 95% CI, 3.26% – 13.23%), and sedative/hypnotic (5.78%, 95% CI, 2.08% - 9.46%). Individual level factors associated with psychotropic polypharmacy among community-dwelling elderly individuals with PD consisted of age, gender, race/ethnicity, education, marital status, exercise, body mass index, perceived physical and mental health status as well as chronic physical and mental health conditions. For example, elderly individuals with PD diagnosed with mental health conditions were seven times more likely (Odds Ratio - 7.19; 95% CI- 2.70-19.1) to receive psychotropic polypharmacy compared to those without a diagnosis of mental health condition. **CONCLUSIONS:** Even though the use of psychotropic polypharmacy among community-dwelling elderly individuals with PD is less compared to nursing home and home healthcare settings, close monitoring is still warranted to prevent serious adverse events in this vulnerable population.

PND55

THE USE OF MIGRAINE PROPHYLAXIS TREATMENT: ANALYSIS OF CLINICAL PRACTICE DATA FROM THE UNITED STATES, GERMANY, FRANCE, AND JAPAN

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OBJECTIVES: To explore factors associated with the use of migraine prophylaxis treatment in the United States of America (USA), Germany, France, and Japan. **METHODS:** Data were drawn from the 2014 Adelphi Migraine Disease Specific Program, a cross sectional survey of physicians and their migraine patients across the USA, France, Germany and Japan. Using physicians as the clustering unit, multivariable logistic regression was used to explore factors associated with migraine prophylaxis use, controlling for demographic characteristics, monthly headache days (HD); number of migraine specific acute medications used (ACM); time since migraine diagnosis (DD); anxiety; depression; body mass index, over-the-counter medication use, physician specialty (primary-care-physicians – PCPs/neurologists/internists); Migraine Disability Assessment scores; EuroQol-5-Dimensions scores and country. **RESULTS:** The study included 444 physicians (265 PCPs, 179 neurologists) and 4,319 patients (USA: 1,500; Germany: 900; France: 900; Japan: 1019). 71.6% were female, mean (SD) age and DD were: 40.1 (14.1) and 5.3 (7.0) years respectively. 43.2% reported 4-14 HD and 6.6% reported ≥15 HD. Prophylaxis non-users included: 67.3% of patients with 0-3 HD; 55.5% of patients with 4-7 HD; 37.3% of patients with 8-14 HD; and 27.1% of those reporting ≥15 HD. Higher HD (8-14 vs. 0-3, odds ratio-OR=3.39; and ≥15 vs. 0-3, OR=2.42); ACM (1 vs. 0, OR=0.30; >1 vs. 0, OR=0.32); being treated by neurologists vs. PCPs (OR=3.1); and region, Germany vs. USA (OR=0.16) and Japan vs. USA (OR=0.33), were significantly associated with prophylaxis use (at α=0.05). **CONCLUSIONS:** The analysis shows a reduced likelihood of prophylaxis use in patients treated by PCPs (vs. neurologists), in Germany and Japan (vs. USA), and an inverse relationship between ACM and prophylaxis use. Whereas patients with ≥8 HD were more likely to use prophylaxis treatment, there is significant unmet need with 37.3% and 27.1% of patients not receiving prophylaxis treatment despite experiencing 8-14 and ≥15 HD, respectively.

PND56

DRUG UTILIZATION EVALUATION OF ANTIEPILEPTIC DRUGS IN PEDIATRIC POPULATION AT A SECONDARY CARE HOSPITAL

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OBJECTIVES: Epilepsy is a common but serious brain disorder. Epilepsy can begin at any time of life, but it is most common in children under five years.The main objective of this study was to assess the pattern of antiepileptic drugs(AEDs) use in pediatric clinical practice and report the potential adverse effects of AEDs. **METHODS:** This was a cross-sectional study conducted Over a six-month period, all pediatric epilepsy out- patients of age 6months to 12years from a secondary care hospital who were diagnosed with epilepsy were followed up prospectively. Data was collected and analyzed using various statistical methods. **RESULTS:** Data for a total of 153 out-patients were collected, 80 were males and 73 were females with a mean age of 6.87±3.4 years. 50 patients (32.67%) had idiopathic seizure, 46 patients (30%) had focal epilepsy and 48 patients (31.37%) had generalized epilepsy while the rest 9 patients were diagnosed with febrile seizures. An average of 1.6 antiepileptic drugs per patient was prescribed. 121 patients (79%) were on monotherapy, 22 patients (14.3%) were taking 2 AEDs and 10 patients (6.5%) were prescribed with three or more AEDs, Carbamazepine was the commonest monotherapy (71%) followed by Valproic acid (10.80%), and Phenytoin (9.90%). Combination of one conventional AED with one Benzodiazepine were the most frequent 2 drug combination, while 2 conventional AEDs with one Benzodiazepine were the commonest 3 drug combination, only 3 patients (1.9%) were taking newer AEDs as add on therapy. The overall incidence of adverse drug reactions (ADRs) was 5.22% and Carbamazepine caused majority of ADRs. **CONCLUSIONS:** Monotherapy was the most frequently used remedy in all forms of epilepsy. Despite the availability of newer antiepileptics in secondary care settings, the domain of monotherapy was still dominated in pharmacotherapy of epileptic seizure.

PND57

COMPARISON OF CHARACTERISTICS OF PATIENTS DIAGNOSED WITH RELAPSING REMITTING MULTIPLE SCLEROSIS AND TAKING SUBCUTANEOUSLY ADMINISTERED DISEASE MODIFYING THERAPIES: INTERFERON BETA 1B VERSUS 1A

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OBJECTIVES: The objective of this study is to assess and compare the characteristics of relapsing remitting multiple sclerosis (RRMS) patients taking Interferon beta 1b (Extavia) or Interferon beta 1a (Rebif) subcutaneously. **METHODS:** A large US administrative retrospective claims database was used to identify patients diagnosed with RRMS and were prescribed Interferon beta 1b (IB1a) or 1a (IB1b) between January 2010 and December 2012 were included in the study. All patients were ≥ 18 years of age and continuously enrolled in the same health plan at least a year. Descriptive statistics and chi-square tests were performed on the data. **RESULTS:** There were a total of 317 patients on IB1a and 10,190 on IB1b during the study period. Of these, more than 70% of the patients in both groups were females (76.7% vs 74.9%, p=0.484). IB1a patients were older than IB1b (48.57±11.47 vs 46.51±10.63 years, p=0.001) and majority of the patients were in the 40 to 65 years age group (72.2% vs 69.1%, p<0.001). The majority of the patients in IB1a were from Midwest (60.35% vs 35.6%) and the least number of patients were from East (5.4% vs 27.0%, p<0.001). More than half of the IB1b patients were on group coverage (21.5% vs 58.0%) and the majority of the IB1a patients were on unknown coverage (77.6% vs 38.9%, p<0.001). The majority of the IB1b patients prescriptions were on health plan formulary (34.1% vs 65.1%, p<0.001) and were diagnosed with mental health problems (18.9% vs 56.9%, p<0.001). IB1a patients enrolled in the same health plan longer (5.71±3.48 vs 4.52±2.45 years, p<0.001) and submitted more claims (491.72±485.80 vs 377.36±363.13, p<0.001). IB1b patients received more number of days of supply than IB1a (30.47±6.80 vs 31.48±13.55 days, p<0.001). **CONCLUSIONS:** IB1b patients were younger, on health plan formulary and received more number of days of supply.

PND58

IMPACT OF NEW ENTRANTS TO THE MARKET FOR MULTIPLE-SCLEROSIS DISEASE-MODIFYING DRUGS IN CANADA

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OBJECTIVES: Multiple sclerosis (MS) is one of the most common neurological diseases, and in Canada, MS rates are among the highest reported worldwide. Disease-modifying drugs (DMDs) for MS are used to prevent disability and delay disease progression. Ten DMDs are approved in Canada, of which four (oral therapies fingolimod, dimethyl fumarate and teriflunomide; monoclonal antibody alemtuzumab) have entered the market since 2011. The objective of this study was to evaluate the Canadian market for DMDs since 2011. **METHODS:** Data on retail prescriptions and on drugstore and hospital purchases of DMD in Canada were obtained from IMS Brogan. Numbers of prescriptions and purchases (in $Can) were collected for 12-month periods ending May 31st2011, 2013 and 2015. **RESULTS:** Total numbers of prescriptions filled for DMDs in Canada amounted to 174,503, 181,536 and 231,513 in the 12 months ending May 31st of 2011, 2013, and 2015, respectively. The number of prescriptions for the market leader, glatiramer acetate, remained stable during this period, but as a percentage of overall DMD prescriptions decreased from 33.6% (2011) to 24.5% (2015). Prescription volume of the four newest DMD entrants to the Canadian market underwent steady growth, from <1% to 37% of overall DMD prescriptions in the 12 months ending May 31st2011 and 2015, respectively. Total drugstore and hospital purchases for these therapies in Canada reached $181 million in the 12 months ending May 2015, representing 40% of the value of total DMD purchases. **CONCLUSIONS:** DMDs represent a market of more than $450 million dollars in Canada; this will likely continue to grow due to the increasing prevalence of MS in the general population. Since 2011, the market share of the four newest entrants to the Canadian market has grown rapidly so that in 2015, they captured approximately two-fifths of DMD prescriptions and purchases.

PND59

COST ANALYSIS OF PATIENTS WITH MULTIPLE SCLEROSIS NEWLY INITIATING SUBCUTANEOUS INTERFERON β-1A VERSUS ORAL DISEASE-MODIFYING DRUGS

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OBJECTIVES: Evaluate costs among patients with multiple sclerosis (MS) newly initiating subcutaneous interferon beta-1a (scIFNβ1a) vs oral disease-modifying drugs (DMDs; ie, teriflunomide, fingolimod, dimethyl fumarate). **METHODS:** Patients from IMS LifeLink PharMetrics Plus™ met the following criteria: MS diagnosis (ICD-9-CM:340.xx); initiation of scIFNβ1a, teriflunomide, fingolimod, or dimethyl fumarate between 1/1/2012–6/30/2013 (1st claim=index date); continuous eligibility 12 months pre- and post-index; no DMD 12 months pre-index (treatment-naïve); and age 18–63 years. Total (all-cause) and medical costs (excluding DMD cost) were examined 12-months post-index (reported in 2014 US dollars). Generalized linear models with gamma distribution and log link controlled for demographics (age, sex, region) and clinically-meaningful disease severity measures (90-day pre-index relapse, neurologist visits, MRI). **RESULTS:** 1665 patients (686 scIFNβ1a, 118 teriflunomide, 455 fingolimod, 406 dimethyl fumarate) met inclusion criteria (mean age=44.4 years; 75.5% female). After adjustment, estimated least squares mean 12-month total cost for scIFNβ1a was $57,558 compared with teriflunomide ($55,414; p=0.4977), fingolimod ($69,478; p<0.0001), and dimethyl fumarate ($69,798; p<0.0001). Age (p<0.0001) and 90-day pre-index relapse (p<0.0001) were significant predictors of cost. Estimated least squares mean 12-month medical cost for scIFNβ1a was $13,562 compared with fingolimod ($15,840; p=0.0234), teriflunomide ($17,148; p=0.0350), and dimethyl fumarate ($20,987; p<0.0001). Age (p<0.0001), region (p=0.0006), and each clinically-meaningful disease severity measure (all p<0.0001) were significant predictors of cost. Interactions between DMD and region were identified, as was between DMD and no 90-day pre-index relapse. Among patients with no 90-day pre-index relapse, medical costs were lower for patients initiating scIFNβ1a compared with patients initiating an oral DMD. **CONCLUSIONS:** In this real-world assessment, after controlling for demographics and clinically-meaningful disease severity measures, patients initiating scIFNβ1a had lower 12-month total costs compared to fingolimod and teriflunomide and lower 12-month medical costs compared with patients initiating any oral DMD. Examination of interactions identified effects between various covariates and cost.

PND60

FINGOLIMOD VERSUS TEIFLUNOMIDE: HEALTH CARE COSTS ASSOCIATED WITH PATIENTS DIAGNOSED WITH RELAPSING REMITTING MULTIPLE SCLEROSIS TAKING DISEASE MODIFYING THERAPIES IN THE UNITED STATES

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OBJECTIVES: The objective of this study is to assess and compare the health care costs associated with patients diagnosed with relapsing remitting multiple sclerosis (RRMS) and taking Fingolimod capsules or Teriflunomide tablets. **METHODS:** A large US administrative retrospective claims database was used to identify patients diagnosed with RRMS and were prescribed Fingolimod or Teriflunomide between January 2010 and December 2012 were included in the study. All patients were ≥ 18 years of age and continuously enrolled in the same health plan for a year. Descriptive statistics, chi-square tests and regression analysis were performed on the data and statistical significance level was set a priori at 0.05. **RESULTS:** There were a total of 3,102 patients on Fingolimod and 114 on Teriflunomide that met the study criteria. Patients on average were charged $5168.66±2371.50 and $3811.13±1377.13 for their treatment (p<0.001). However, the amount allowed (p<0.001) by the health plan was $5013.07±2351.37 and $3705.05±1373.52 and the actual amount paid (p<0.001) was $4905.78±2344.11 and $3630.08±1375.79 for a month supply. On average, patient's deductible (p=0.748) was $12.12±106.89 and $8.40±55.13 and patient co-payment (p=0.887) was $75.14±239.49 and $78.74±159.46 for Fingolimod and Teriflunomide. The majority of the Fingolimod (54.9%) and Teriflunomide (92.1%) patients were charged anywhere between $50K to $100K and $25K to $50K for their treatment per year. For patients whose prescription was on their health plans formulary ($148.37±12.99 vs $126.88±15.62) on average charged per day lower compared to patients on non-formulary status ($158.22±25.40 vs $125.98±39.61). The regression analysis shows that patients receiving drug supply ≤30 days, having mental health issues, individual coverage, patient's <65 years of age and patients receiving Fingolimod were more likely (p<0.05) to have higher charges. **CONCLUSIONS:** The cost of Fingolimod treatment for RRMS patients is higher than Teriflunomide.

PND61

HEALTH ECONOMIC EVALUATION OF ORALLY VERSUS SUBCUTEANOUSLY ADMINISTERED DISEASE MODIFYING THERAPIES FOR PATIENTS DIAGNOSED WITH RELAPSING REMITTING MULIPLE SCLEROSIS

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OBJECTIVES: The objective of this study is to conduct a health economic evaluation and compare the health care costs associated with patients diagnosed with relapsing remitting multiple sclerosis and taking orally or subcutaneously administered disease modifying therapies (DMTs). **METHODS:** A large US administrative retrospective claims database was used to identify patients diagnosed with RRMS and were prescribed either orally or subcutaneously administered DMTs between January 2010 and December 2012 were included in the study. All patients were ≥ 18 years of age and continuously enrolled in the same health plan at least a year. Descriptive statistics, chi-square tests and logistic regression analysis were performed on the data and statistical significance level was set a priori at 0.05. **RESULTS:** There were a total of 3,216 patients on Orals and 10,507 on Subcutaneous DMTs that met study criteria. Patients on average were charged $5120.54±2356.75 and $3966.75±1904.01 for their treatment with Orals and Subcutaneous DMTs (p<0.001). However, the amount allowed (p<0.001) by the health plan was $4966.70±2336.18 and $3615.94±1752.21 and the actual amount paid (p<0.001) was $4860.56±2328.56 and $3504.89±1745.19 for a month supply. The annual cost of treating patients with Orals was higher than Subcutaneous DMTs ($61,446.57±28281.09 vs $47,601.01±22848.23, p<0.001). The majority of the Orals were charged anywhere between $50K and $100K (53.1% vs 11.9%, p<0.001) and Subcutaneous were charged between $25K and $50K (36.1% vs 80.4%) for their annual treatment. The mean cost of DMTs per day of treatment is higher for Orals compared to Subcutaneous ($151.04±21.25 vs $117.93±35.24, p<0.001). The logistic regression analysis showed that patients receiving Orals were eight times more likely to have costs for their treatment more than $50K per year compared to subcutaneous DMTs (OR 8.0, p<0.001). **CONCLUSIONS:** Patients on Orals DMTs have a higher treatment costs than Subcutaneous administered DMTs.

PND62

HEALTH ECONOMIC EVALUATION OF INTERFERON BETA 1B VERSUS 1A FOR PATIENTS DIAGNOSED WITH RELAPSING REMITTING MULTIPLE SCLEROSIS

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OBJECTIVES: The objective of this study is to conduct a health economic evaluation and compare the health care costs associated with patients diagnosed with relapsing remitting multiple sclerosis and taking Interferon beta 1b (Extavia) or Interferon beta 1a (Rebif) subcutaneously. **METHODS:** A large US administrative retrospective claims database was used to identify patients diagnosed with RRMS and were prescribed Interferon beta 1b (IB1a) or 1a (IB1b) between January 2010 and December 2012 were included in the study. All patients were ≥ 18 years of age and continuously enrolled in the same health plan for a year. Descriptive statistics, chi-square tests and regression analysis were performed on the data and statistical significance level was set a priori at 0.05. **RESULTS:** There were a total of 317 patients on IB1a and 10,190 on IB1b that met study criteria. Patients on average were charged $3378.06±963.58 and $3985.06±1923.06 for their treatment (p<0.001) with IB1a and IB1b. However, the amount allowed (p<0.001) by the health plan was $3060.36±917.77 and $3633.22±1769.11 and the actual amount paid (p<0.001) was $2977.23±912.96