OBJECTIVES: The purpose of this cost-effectiveness model is to compare the cost-effectiveness of metronidazole, oral vancomycin, fidaxomicin, and fecal transplants for CDI. **METHODS:** This is a cost-effectiveness model from the societal perspective using probabilities, cost, and utility parameters from scientific literature. A decision tree model for mild/moderate CDI compares metronidazole, oral vancomycin, fidaxomicin, and fecal transplant. A decision tree for severe CDI compares oral vancomycin, fidaxomicin, and fecal transplant. Both decision trees capture up to two recurrences and/or the necessity of a colectomy. Both models account for short-term and long-term costs of CDI. One-way sensitivity and threshold sensitivity analysis were used to assess the robustness of the data. **RESULTS:** For mild-moderate CDI, fecal transplant is a dominant treatment option, as it reduces costs to $13,537 and increases effect to 11.85 QALYs. The best alternative to fecal transplants in mild-moderate disease is fidaxomicin if WTP/QALY >$0. For severe disease, fecal transplant is still a dominant treatment option, as it reduces costs to $13,537 and increases effect to 11.84 QALYs. The best alternative to fecal transplants in severe CDI is oral vancomycin at all WTP/QALY. For mild-moderate disease indicated that fecal transplants are favored to fidaxomicin as long as the cost of fecal transplants < $4,515, fecal transplant cure rate > 0.883, fecal transplant recurrence rate < 0.185, fidaxomicin cure rate < 0.955, and fidaxomicin recurrence rate > 0.02. For severe disease indicated that fecal transplants are favored to oral vancomycin as long as the cost of fecal transplants < $4,860, fecal transplant cure rate > 0.79, and the fecal transplant recurrence rate < 0.36. **CONCLUSIONS:** In both the treatment of mild/moderate and severe CDI, it is cost-effective to use fecal transplants as standard protocol rather than the last resort.

PIN51

COST-EFFECTIVENESS OF ERTAPENEM VERSUS CEFTRIAXONE IN TREATING URINARY TRACT INFECTIONS IN COLOMBIA

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OBJECTIVES: To compare Ertapenem with ceftriaxone for the treatment of urinary tract infections (UTI) in Colombia health care setting, with respect to cost and outcomes taking into account development of anti-microbial resistance (AMR). **METHODS:** A previously published decision tree model was adapted to estimate cost-effectiveness of Ertapenem vs. Ceftriaxone in the treatment of UTI. Clinical efficacy, adverse events and medical resource use were derived from literature. AMR to Ertapenem and ceftriaxone was calculated as weighted average based on the % distribution of different pathogens in UTI in Colombia and the sensitivity of Ertapenem and Ceftriaxone to each pathogen from Colombia SMART data. The resistance-adjusted effectiveness is then computed based on the efficacy from clinical trial and local AMR data, Model outcomes included resistance, clinical success, deaths, life years, direct costs, and costs per successfully treated patient. **RESULTS:** The overall AMR of Ertapenem vs. Ceftriaxone for UTI is 7% vs. 30%. The resistance-adjusted effectiveness is 83% vs. 64% for Ertapenem vs. Ceftriaxone. Daily drug costs for Ertapenem vs. Ceftriaxone are 133,550 vs. 8,550 Colombian Pesos. Total costs (including drug costs, hospitalization, cost of 2nd-line treatment & cost of AEs) are 446,871 vs. 188,268 Pesos. During the first hospitalization period, Ertapenem is associated with a 18.8% higher treatment success rate, and 178,377 Pesos more in total cost when compared with Ceftriaxone. The incremental cost per successfully treated patient (ICER) is 9,488 Pesos ($4.87 USD) for Ertapenem vs. Ceftriaxone. **CONCLUSIONS:** Accounting for local anti-microbial resistance, Ertapenem is more effective as well cost-effective vs. Ceftriaxone for the treatment of urinary tract infections in Colombia.

PIN52

COST-EFFECTIVENESS OF ONCE DAILY DOLUTEGRAVIR VERSUS TWICE DAILY RALTEGRAVIR AS FIRST-LINE ANTIRETROVIRAL THERAPY IN HIV-INFECTED ADULTS IN THE UNITED STATES

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OBJECTIVES: Dolutegravir is a new FDA-approved (August 2013) antiretroviral medication in the integrase inhibitor class which could be a possible first-line agent for treatment of antiretroviral naïve HIV infected adults. A phase III trial (SPRING-2) compared clinical efficacy of dolutegravir versus raltegravir, a currently recommended first-line agent, and demonstrated non-inferior viral response rates at 96 weeks for dolutegravir (81%) when compared to raltegravir (76%). This study aims to estimate the costs and effectiveness of dolutegravir and raltegravir and to determine the cost-effectiveness of dolutegravir versus raltegravir. **METHODS:** A decision analysis model was constructed to determine the cost-effectiveness of treatment with dolutegravir versus treatment with raltegravir as a first-line agent from the perspective of the provider. First-line efficacy data was derived from the previously-mentioned published phase-III trial (SPRING-2). Drug costs were estimated using average whole sale price and data were obtained using the Red Book. Costs associated with second-line treatment as well as adverse effect treatment were also derived from the Red Book. The model was run over a period of 192 weeks using TreeAge Pro 2013. **RESULTS:** The estimated costs for the dolutegravir arm and raltegravir arm at 192 weeks were $100,750.28 and $96,622.17, respectively. The incremental cost-effectiveness ratio for dolutegravir versus raltegravir was estimated to be $412,811 per 1% increase in virological success. Sensitivity analysis performed on the cost parameters confirmed the primary cost effectiveness results. **CONCLUSIONS:** The analysis provided cost-effectiveness findings of dolutegravir versus raltegravir for HIV-infected treatment naïve patients and showed favorable cost-effectiveness results for raltegravir when using a 192 week time frame.

PIN53

COST-EFFECTIVENESS ANALYSIS OF ARTESUNATE-AMODIAQUINE VERSUS ARTEMETHER-LUMEFANTRINE FOR THE TREATMENT OF UNCOMPLICATED MALARIA IN UNDER-FIVE YEAR OLD PATIENTS IN GHANA

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OBJECTIVES: Artemisinin combination based therapy (ACT) was started in Ghana in 2002 as a result of failure of monotherapy in the treatment of falciparum malaria. The decision to change was in line with recommendations from the World Health Organisation. ArtesunateAmodiaquine (A-Q) is the preferred combination drug of choice for the treatment of uncomplicated malaria and Artemether-Lumefantrine (A-L) is an alternative first line option. This study evaluates the cost-effectiveness of A-Q compared with A-L among under-five year olds in Ghana. **METHODS:** In this study a decision analytic model using a decision tree was developed to assess the cost-effectiveness of the two treatments. Cost of illness and cost of medication (Coartem paediatric and Camoquine plus) were determined using figures from the National Health Insurance Scheme (NHIS) Ghana and from wholesalers respectively. Transportation cost was estimated using exit interviews. With the help of randomized controlled trials we estimated malaria cases averted (using clinical failure rates) over a 28 day period post treatment with each drug. Costs were discounted by 3% over a five year period but malaria cases averted 28 days after treatment was not discounted. Incremental costs per uncomplicated malaria case averted was then determined. **RESULTS:** The cost of illness per episode of uncomplicated malaria was 7.50 Ghana cedis (bundled NHIS cost) and transportation cost was 3.00 Ghana cedis. The incremental cost effectiveness ratio of artesunate-amodiaquine compared with artemether-lumefantrine was 16 Ghana cedis per uncomplicated malaria case averted. **CONCLUSIONS:** This economic evaluation showed that in the Ghanaian setting, treating uncomplicated malaria in under-five year old children with artesunate-amodiaquine was more cost-effective compared with artemether-lumefantrine.

PIN54

COST-EFFECTIVENESS OF SINGLE VERSUS MULTIPLE TABLET REGIMENS FOR TREATMENT OF HIV-1 INFECTION

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OBJECTIVES: Favorable clinical outcomes in HIV-1 infection require optimal adherence to multi-drug antiretroviral (ARV) regimens. Single-tablet regimens (STRs) simplify treatment compared with multiple-tablet regimens (MTRs) and are associated with improved adherence, improved virologic outcomes and reduced hospitalizations. To date, models assessing the economic value of STRs have been based only on clinical trial evidence from idealized settings with close follow-up. Economic models have not yet incorporated real-world evidence comparing adherence and effectiveness between STRs and MTRs. **METHODS:** A patient-level simulation model was used to compare health and economic outcomes between STRs and MTRs in the US. STRs included EVG/COBI/FTC/TDF, EFV/FTC/TDF and RPV/FTC/TDF. MTRs included a 3rd agent plus 3TC+TDF backbone. Before incorporating real-world evidence, the model was validated against published economic projections based on clinical trial results. Real-world evidence identified via systematic literature review was then incorporated for differences in adherence, resistance, and hospitalization risk between STRs and MTRs. Upcoming generic drug scenarios included 25-75% cost reductions and lower average drug costs for MTRs vs. STRs by $1,300 to $6,100 per year. All costs were inflated to 2013 USD. **RESULTS:** After incorporating real-world evidence, the virologic suppression rates at 24 weeks were 72.7% and 63.2% for STRs and MTRs, respectively. When initiating with STRs vs. MTRs, short-term inpatient costs (at 2 years) were reduced by 29% ($7,660 vs. $10,819) and an additional 2 life years (20.6 vs. 18.6) were gained. The discounted life-time incremental cost-effectiveness ratios ranged from ~$26,000 to $52,000 per QALY, depending on assumed generic discounts. **CONCLUSIONS:** STRs have demonstrated superior clinical and economic outcomes compared to MTRs in real-world settings. Incorporating this evidence into a cost-effectiveness model illustrated that initiation with STRs is a cost-effective strategy compared with initiation with MTRs, due to greater real-world adherence and effectiveness, and reduced inpatient costs.

PIN55

THE COST-EFFECTIVENESS OF HEPATITIS C TREATMENTS IN TREATMENT NAÏVE GENOTYPE 1 PATIENTS

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OBJECTIVES: In the United States, chronic hepatitis C (HCV) is responsible for more death and disease than HIV/AIDS. It is the most common chronic blood-borne infection, and remains a major cause of death and illness in the United States. Current standard of care treatments for HCV have difficult dosing regimens and are often accompanied by undesirable side effects. With a host of new clinically promising, interferon-free, combo therapies currently in clinical trials it is important to assess the cost-effectiveness of the current and future treatment options for chronic hepatitis C. The objective of the current study is to assess the cost-effectiveness of current, and future, treatment options for treatment naïve genotype 1 chronic hepatitis c patients. **METHODS:** Cost-effectiveness analysis using a Markov model of the natural disease progression of HCV infection and impact of treatment. We use a simulated 20 year model of a hypothetical cohort of 1000 treatment naïve genotype 1 HCV patients to assess the cost-effectiveness of no treatment, boceprevir + pegylated interferon + ribavirin (BOC+P+R), telaprevir + pegylated interferon + ribavirin (TVR+P+R), and sofosbuvir + ledipasvir + ribavirin (SOF+LVR+R). **RESULTS:** Over the 20 year time horizon of this cohort no treatment would result in 9.76 QALYs and a total discounted cost of $41,434, while BOC+P+R resulted in 11.06 and $132,070, TVR+P+R in 11.08 and $132,482, and SOF+LVR+R in 11.90 and $172,384, respectively. Our analysis showed that BOC+P+R and TVR+P+R were weakly dominated, while SOF+LVR+R was the most cost-effective therapy. **CONCLUSIONS:** The interferon-free combo therapy SOF+LVR+R is the most cost-effective treatment option, with an ICER of $61,291 when compared to no treatment. These results have important economic, and policy implications for the treatment of chronic hepatitis C.