PP14 Recombinant Human Erythropoietin For Sickle Cell Disease And Brazilian Healthcare System Sustainability: Cost-Effectiveness And Budget Impact Analysis

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Introduction: Sickle cell disease (SCD) is a rare disease, including renal complications. Erythropoiesis-stimulating agents (i.e., recombinant human erythropoietin, rHuEPO) are recommended for SCD and renal impairment. Evidence suggests its effectiveness in raising hemoglobin (Hb), which may reduce the need for regular blood transfusions. Cost-effectiveness analysis (CEA) and budget impact analysis (BIA) of rHuEPO were performed from the Brazilian Unified Health System (SUS) perspective.
Methods: A decision tree was created to assess rHuEPO's impact on reducing blood transfusions. Quality-adjusted life year (QALY) for transfusion dependency and direct medical costs related to rHuEPO and transfusion were considered. SCD patients with worsening kidney function and Hb levels enter the model with an indication of receiving regular transfusions; those who proceed to the rHuEPO +standard care arm are likely to have clinically relevant elevation in Hb levels (i.e., <1.5 g/dL), suspending transfusions, and those who do not respond to treatment continue to receive regular transfusions. BIA population was estimated based on epidemiological data, considering direct costs over a five-year horizon.
Results: rHuEPO+standard care compared to standard care generated 36.8 percent less need for transfusions, resulting in an increase of 0.033 QALY and a saving of BRL11,564 (USD2,362) per patient/year. rHuEPO was the dominant alternative; that is, there was greater clinical benefit and lower total cost. At BIA, the eligible population was 5,274 patients per year, on average. The direct cost of acquiring rHuEPO for the total eligible population summed BRL13,737,129 (USD2,806,016) in five years. However, considering the estimated effectiveness of CEA in reducing transfusions, BIA demonstrated savings of BRL96,545,791 (USD19,720,936) accumulated over five years.
Conclusions: Health technology assessments showing the new alternative as dominant are uncommon, especially in rare diseases, where patented orphan drugs usually have increased costs, which is not the case of rHuEPO. In this analysis, rHuEPO remained the dominant alternative and its incorporation would result in savings that may contribute to the sustainability of the Sistema Único de Saúde, Brazil's national health system.

PP15 Cost–Benefit Analysis Of An Antimicrobial Stewardship Program In A Cancer Setting In Qatar

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Introduction: The inappropriate use of antimicrobial agents has been associated with increased healthcare costs and the spread of multidrug-resistant organisms. We aimed to estimate the economic impact of the developed antimicrobial stewardship program (ASP), after five years of implementation, versus the preliminary ASP, upon implementation, in the cancer setting at the National Center for Cancer Care and Research (NCCCR) in Qatar.
Methods: The research investigated the economic benefits of employing a preliminary ASP versus a developed ASP from the perspective of a public healthcare hospital. Preliminary ASP was defined as the 12 months following the establishment of the ASP (i.e., 1 May 2015 to 30 April 2016), while developed ASP was defined as the most recent 12 months of ASP implementation (i.e., 1 February 2019 to 31 January 2020). Patient records were retrospectively reviewed. The total economic benefit of ASP maturity was calculated as the sum of the cost savings and the cost avoidance associated with the service, minus the operational cost.
Results: A total of 1,000 patients were included in the study. The developed ASP was associated with substantial reduction in antimicrobial consumption and resource utilization. Total cost of resources to avoid during the developed ASP period was USD1,634,658, in contrast to USD4,923,024 during the preliminary ASP period, yielding a positive cost avoidance of USD3,288,366. Developed ASP incurred lower operating costs than preliminary ASP, resulting in positive change in operational cost of USD3,428. The benefit-to-cost ratio was 640. The net benefit due to ASP maturity was USD3,624,875. The robustness of the results is demonstrated by the sensitivity analysis.
Conclusions: This study underscores the benefits of ASP development in a cancer setting. The observed reductions in antimicrobial costs from reduced antimicrobial use and the added value of cost avoidance signify the positive impact of a well-developed ASP. These findings lend support to the broader implementation of comprehensive ASPs, which contribute not only to patient-care optimization but also to cost containment.

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