PP574 Cost-Effectiveness Of Newborn Screening Of Primary Immunodeficiency Diseases: A Systematic Review And Economic Evaluation

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Introduction. Primary immunodeficiency diseases (PIDs) are a heterogeneous group of over 200 disorders with defects in the function and/or development of the immune system. Although early screening is imperative for improving therapeutic efficiency and preventing disease-associated morbidity, its widespread use has been limited, owing to the low incidence of PIDs. It is particularly important to evaluate the cost-effectiveness of PIDs screening for newborns. The aim of this study was to provide an overview of the existing cost-effectiveness evidence on newborn screening of PIDs and to provide reference for decision-makers in China and other developing countries.

Methods. We conducted a systematic review using three electronic databases (PubMed, CNKI, and CSPD) of cost and cost-effectiveness studies of PIDs screening published during 2000–2019. Two reviewers independently searched databases and screened titles, abstracts and full texts; a third reviewer resolved disputes when necessary. The initial search returned 124 references, of which 10 full articles were included in the review. Five of the studies conducted analyses using model-based techniques.

Results. Severe combined immunodeficiency (SCID) was the predominantly studied condition (80%). Most studies (70%) examined the T-cell receptor excision circle (TREC) assay. A healthcare system's perspective was commonly used (50%) for cost calculations, and most studies (50%) were US-based. The majority (67%) of the studies found the TREC assay an effective screening tool for SCID, but the incremental cost-effectiveness ratio (ICER) varied across screening test specificity and disease incidence.

Conclusions. Evidence from the published literature demonstrated that newborn screening for PIDs generally appeared to be cost-effective, and most importantly, it is lifesaving and allows children with PIDs an opportunity to live a healthier life. However, the type of PIDs included in this study were limited and most studies were done in developed countries whose health systems are different from low-/middle-income countries (LMIC). Further research is required to identify the cost-effectiveness of PIDs screening both in developed and developing countries.

PP581 Catastrophic Costs Of Multidrug-Resistant Tuberculosis: Estimation Based On The Cost Of Treatment In China

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Introduction. China bears a considerably high burden of multidrug-resistant tuberculosis (MDR-TB). Second-line anti-TB drugs are urgently needed yet domestic MDR-TB drugs are expensive and lack policy support. Patients' living conditions are closely related to the drug affordability. The national TB prevention programs should play a critical role. The purpose of this study is to measure the cost of treating MDR-TB patients under different treatment schemes and price sources. The results of this study are expected to inform the relevant drug protection policies and provide inputs for further cost-effectiveness analyses.

Methods. Based on the treatment plan of China's Multidrug-Resistant Pulmonary Tuberculosis Clinical Path (2012 edition) and the World Health Organization (WHO) Drug-Resistant Tuberculosis Treatment Guide (2018 edition), the treatment costs of MDR-TB were measured under different scenarios. Catastrophic health expenditure was then calculated if the treatment cost exceeds 40 percent of the household's non-subsistence income. National, rural and disposable income per capita in 2018, were used to represent Chinese patients' affordability.

Results. Under varied treatment schemes and market price sources in China, the total costs for MDR-TB patients range from 19,401 to 126,703 CNY [2,853 to 18,633 USD] per person. Under current prices, all treatment schemes recommended by the WHO will incur catastrophic costs for Chinese MDR-TB patients. Significant differences were found between rural and urban areas as 52.8 percent of the treatment listed in the 2012 China Guideline would lead to catastrophic cost for rural patients but not urban ones.

Conclusions. Our study concludes that the domestic drugs are more expensive than the international purchase price and the treatment of MDR-TB imposes substantial economic burden on patients, especially in the rural areas. The results of the study also indicate that it is urgent for the state to emphasize government responsibility and initiate centralized procurement for price negotiations to reduce the market price of MDR-TB drugs. The urban-rural gap should also be addressed in the design of future policies to ensure the drug affordability for all patients in need.

PP585 A New Hope For Breast Cancer Survivors: Early Assessment Of A Breast Cancer Vaccine

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Introduction. Breast cancer is the most frequent cancer among women globally, impacting 2.1 million women each year, causing the greatest number of cancer-related deaths among women. In Malaysia, the new cases of breast cancer comprised of 32.7 percent of all new cancer cases in women as reported by The International Agency for Research on Cancer (IARC). The recurrence rate was about 16.4 percent post-mastectomy. This early assessment is to evaluate the effectiveness and safety of a breast cancer vaccine.

Methods. A systematic review was conducted. Searches were done through PubMed, Medline and ClinicalTrial.gov. The articles were selected based on inclusion and exclusion criteria and appraised

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