Introduction

Maternal and congenital syphilis prevalence rates are currently rapidly increasing in Mongolia [1]. Early detection of syphilis among pregnant women prevents congenital syphilis [2,3]. However, Traditional method for screening syphilis in pregnancy was rapid plasma reagin (RPR) serologic test, and if positive compared by TPHA. Since 2008, the Ministry of Health of Mongolia has been implementing on-site rapid screening test (RT) intervention and same day approach for maternal syphilis with the contribution with the WHO. This strip test is easy to administer, to store, and shows result immediately [4-7].

Objective: To understand the cost-effectiveness (CE) of screening antenatal syphilis using the RT strategy, to compare this intervention with RPR testing strategy.

Materials and methods

Ingredients-based cost data and epidemiological data were collected retrospectively. Descriptive analysis has done for prevalence of syphilis, and economic analysis has done to calculate costs. Stability of cost-effectiveness ratios were evaluated by the univariate sensitivity analysis.

Results

Our study found that the cost per DALY saved by US$ 14.60 in the RT intervention, and US$ 17.88 by the RPR intervention. To concern incremental cost-effectiveness of DALY. RT intervention was US$ 397.00 cheaper than RPR intervention; however, its effectiveness was less by 7.98 DALY. This negative ICER means that, to save one unit of DALY RPR intervention needs to reduce its cost by US$ 49.74.

Disadvantage of rapid test is that patients remain seropositive even though after receiving treatments. It cannot distinguish active from past infection. It will increase false negative results and unnecessary confirmation tests when screening that individual over time.

Lower cost makes RT intervention more cost-effective, however, incremental of effectiveness is not so greater. Therefore, more studies needed to be done in the sensitivity of rapid tests in Mongolia, because the effectiveness significantly depend on the test sensitivity.

We conclude that current study for further implementation of RT approach will be beneficial from the economical point of view. However, RT saves less DALYs than RPR, its savings in non-health care, and pregnant woman time costs, and its limited requirements for storage and usage suggest its use could be improving the coverage of antenatal syphilis screening in Mongolia [10].

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