Cost-Effectiveness of Etonogestrel Subdermal Contraceptive Implant (ESI) Compared to Levonorgestrel Intrauterine device (LNG-IUD) Reimbursed on the Brazilian Private Health Insurance and Plans.

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OBJECTIVE

To estimate the cost-effectiveness of Etonogestrel Subdermal Contraceptive Implant (ESI) Compared to Levonorgestrel Intrauterine device Reimbursed on the Brazilian Private Health Insurance and Plans.

METHODS

A 15-year cost-effectiveness Markov model was developed to assess the cost per unplanned pregnancy of hormonal devices LNG-IUD and of ESI among Brazilian women in the perspective of the Health Plans Operators. Efficacy inputs, including rate of pregnancies and discontinuation, as well as economic parameters of the model were estimated following National Regulatory Agency for Private Health Insurance and Plans (ANS) for costs. Outcomes considered for contraceptive failure were birth, extra-uterine pregnancy, miscarriage and abortion. Costs of contraception and failures included device, drugs, exams and medical management (physician visits, procedures and hospitalizations) as reported in the model database. A discount rate of 5% was applied to both efficacy and costs.

RESULTS

R$ 1,298,819.90 — **COST REDUCTION OVER A 15-YEAR TIME HORIZON**

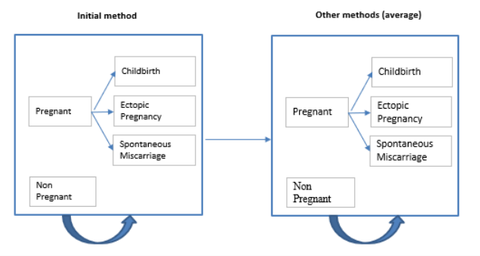

Figure 1. Markov structure adopted in the model.

ESI was cost-effective in the base case and in the majority of sensitivity analyses. ESI allows to avoid 45.7 ‰ pregnancy and cost reductions of R$ 1,298,819.9 over 15-year, resulting in an ICER ratio of a R$ (28,442.00) considering both the treatment costs and the costs generated with unplanned pregnancies, savings. At a threshold of R$ 6,254.90 per unintended pregnancy avoided, Monte Carlo simulations demonstrated an 99.5% probability for ESI to be the most cost-effective method.

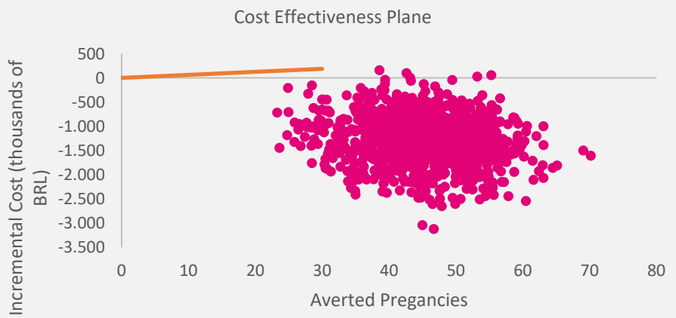

Figure 2. Cost-effectiveness plane showing superiority of ESI over IUD

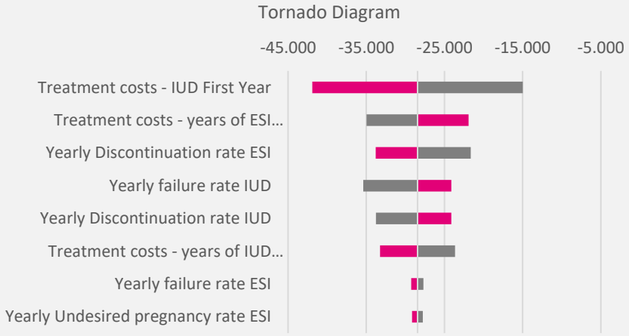

Figure 3. One-Way Sensitivity Analysis of ESI vs. IUD comparison

CONCLUSION

ESI is the most cost-effective contraception strategy for low level of willingness to pay compared to LNG-IUD; it offers more security and allows more choice alternatives in the Brazilian Private Health Insurance and Plans. Results are sensitive to 1st year treatment cost of LNG-IUS, ESI reimplantation costs, and LNG-IUS discontinuation rate.

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