Cost-Effectiveness Analysis of an Interdisciplinary Lifestyle Intervention Targeting Women With Obesity and Infertility in Comparison to Usual Care

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Background: Although lifestyle modification is considered as the first-line treatment for women with obesity and infertility, these women generally do not have access to a program supporting them in adopting healthy habits that is integrated to fertility care. Implementing such a program requires to demonstrate its efficiency. The purpose of this study was to conduct a cost-effectiveness analysis (CEA) of an interdisciplinary lifestyle intervention (Fit-for-Fertility (FFF) program) for women with obesity and infertility, in comparison with the usual care protocol, i.e. fertility treatments.

Methods: A CEA was conducted alongside a randomized controlled trial, recruiting women at the fertility clinic of the Centre hospitalier universitaire de Sherbrooke. Women were randomized to: i) the intervention group (IG): FFF program alone for 6 months (individual follow-ups every 6 weeks and 12 group sessions), and in combination with usual care for infertility after 6 months if not pregnant; or ii) control group (CG): usual care from the outset. Data were collected in both groups, during 18 months or until the end of the pregnancy for those who became pregnant. Costs related to the management of infertility, obesity, pregnancy and childbirth, and the FFF program were considered and collected by self-reported questionnaires, review of medical records and administrative databases. Live birth (LB) rate was used to assess effectiveness. The CEA's parameter of interest was the incremental cost-effectiveness ratio (ICER), calculated by non-parametric bootstrap with 5,000 iterations. All costs are in Canadian dollars, 2019.

Results: A total of 130 women were randomized (65 CG, 65 IG). We present results for the 108 women (57 CG, 51 IG) who completed at least 6 months in the study. We observed an absolute difference of 14.2% (p=0.328) in LB rate between groups (IG: 51.0%; CG: 36.8%). Total mean costs per patient were significantly higher in the IG vs the CG for healthcare system's ($5,660 ± $3,200 vs $3,631 ± $3,389; p=0.002) and society's ($9,745 ± $5,899 vs $6,898 ± 7,021; p=0.026) perspectives. We observed an ICER of $12,633 per additional LB [$5,319-$19,947] from the healthcare system's perspective, and $5,980 [$3,086-$8 874] from the patients' perspective. Overall, the ICER for the society's perspective, which includes both previous perspectives, was estimated at $24,393 per additional LB [$15,509-$33,276].

Conclusion: According to our results, a lifestyle intervention may be clinically more effective than the usual protocol of care for women with obesity and infertility, but generates higher costs as well, resulting in a positive ICER (of $12,600 per additional life birth for the healthcare system). Such an intervention could be considered efficient compared to the usual standard of care, but studies are needed to assess the willingness to pay of stakeholders for this type of intervention.