

# Cost-effectiveness Analysis of Follitropin Alfa Product (GONAL-F®) Compared to its Biosimilars Based on Meta-analysis of Randomized Controlled Trials

Vasily Lukyanov<sup>1</sup>, Edel Falla<sup>2</sup>, Elena de Agustin Calvo<sup>3</sup>, Juan-Enrique Schwarze<sup>4</sup>, Thomas D’Hooghe<sup>4,5,6</sup>, Claudia Roeder<sup>7</sup>

<sup>1</sup>IQVIA Solutions B.V., Amsterdam, The Netherlands; <sup>2</sup>IQVIA, London, UK; <sup>3</sup>P&R, HE Department, Merck, S.L.U., Madrid, Spain, an affiliate of Merck KGaA; <sup>4</sup>Merck Healthcare KGaA, Darmstadt, Germany; <sup>5</sup>Department of Development and Regeneration, Laboratory of Endometrium, Endometriosis & Reproductive Medicine, KU Leuven (University of Leuven), Leuven, Belgium; <sup>6</sup>Department of Obstetrics, Gynecology and Reproductive Sciences, Yale University Medical School, CT, USA; <sup>7</sup>Pharma Value Consulting, Switzerland



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## CONCLUSION



Cost per live birth was lower with originator r-hFSH-alfa versus r-hFSH-alfa biosimilars



€18,138

Originator



€20,377

Biosimilars



The ICER was €7,208 for originator r-hFSH-alfa versus r-hFSH-alfa biosimilars



Drug acquisition costs accounted for only a small proportion of the overall costs



## INTRODUCTION

- Originator r-hFSH-alfa (GONAL-f®, Merck Healthcare KGaA, Darmstadt, Germany) demonstrated a higher probability of live birth and ongoing pregnancy versus r-hFSH-alfa biosimilars in a recent meta-analysis based on RCT data<sup>1</sup>
- Economic modelling using data from large populations (preferably meta-analyses<sup>2</sup>) can provide useful information to help decision-makers make informed evaluations on the optimal gonadotropin for OS



## OBJECTIVES

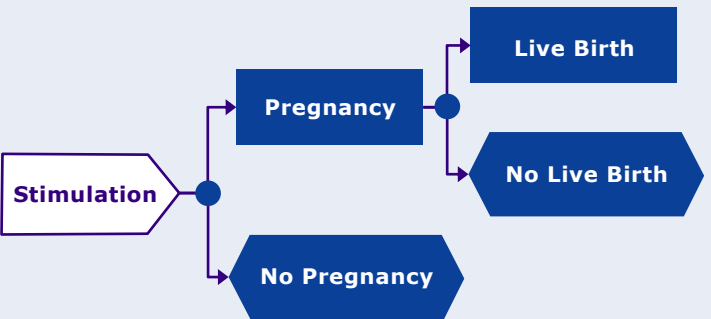
To compare cost per live birth and cost effectiveness of originator r-hFSH-alfa and its biosimilars from a Spanish perspective, using clinical outcomes from a recent meta-analysis<sup>1</sup>



## METHODS

- A decision tree model was developed (**Figure 1**)
- Relative risks from the meta-analysis<sup>1</sup> were used as clinical inputs and costs were sourced from publicly available sources in Spain
- The analysis comprised one stimulation cycle with fresh embryo transfer
- ICER was calculated as the difference in total costs divided by the difference in LBRs
- A probabilistic sensitivity analysis was conducted

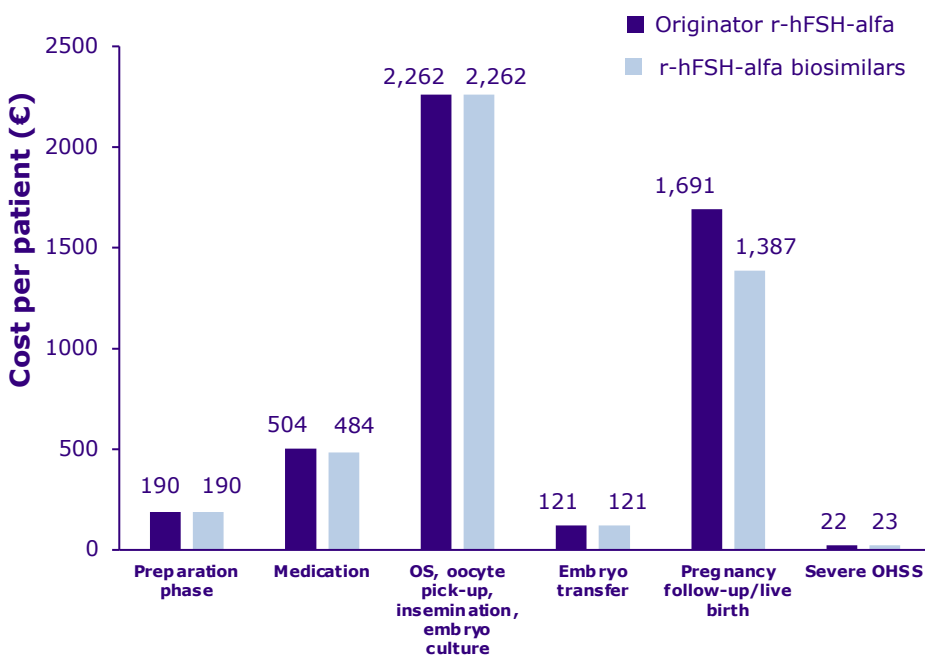
**Figure 1. Model Structure**



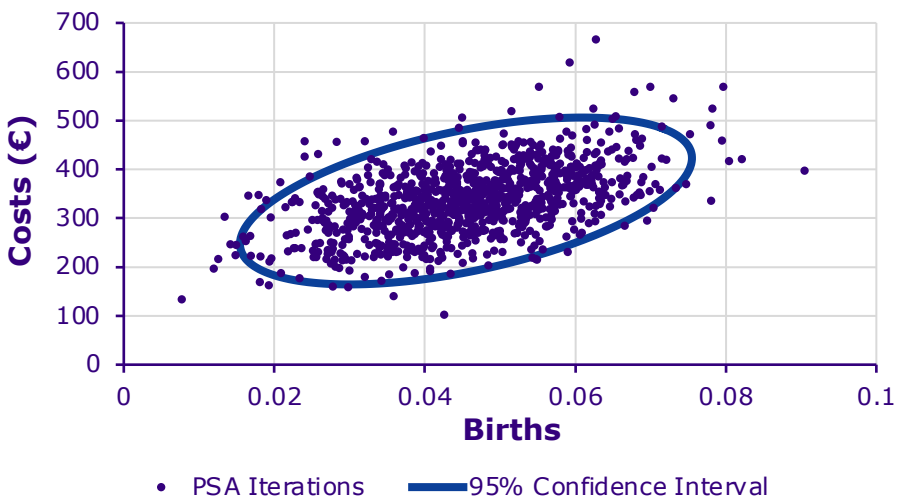
## RESULTS

- Originator r-hFSH-alfa was associated with an increased LBR versus r-hFSH-alfa biosimilars (**Table 1**)
- The cost per live birth was lower with originator r-hFSH-alfa versus r-hFSH-alfa biosimilars (**Table 1**), with an ICER of €7,208
- Total cost per patient was marginally higher with originator r-hFSH-alfa versus r-hFSH-alfa biosimilars (€4,789 vs €4,465), related to the costs associated with the higher number of pregnancies and live births observed with originator r-hFSH-alfa (**Figure 2**)
- Drug acquisition costs represented only a small proportion (~10%) of the overall costs (**Figure 2**)
- The probabilistic sensitivity analysis cost-effectiveness plane based on 1,000 Monte-Carlo simulations showed low uncertainty around the final results (**Figure 3**)

**Figure 2. Cost Breakdown Per Patient According to Phase of MAR**



**Figure 3. Probabilistic Sensitivity Analysis Cost-effectiveness Plane**



**Table 1. Cost Per Live Birth**

	Originator r-hFSH-alfa	r-hFSH-alfa biosimilars	Difference
LBR	26.4%	21.9%	4.5%
Total Costs*	€4,789	€4,465	€323
Cost/Live Birth	€18,138	€20,377	

\*Source costs multiplied by probability. Higher total costs for originator r-hFSH-alfa due to its higher rate of pregnancy and live birth and consequently higher costs for these. ICER, incremental cost-effectiveness ratio; LBR, live birth rate; MAR, medically assisted reproduction. OS, ovarian stimulation. RCT, randomised controlled trial; r-hFSH, recombinant human follicle-stimulating hormone.

### REFERENCES

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