

INTRODUCTION AND OBJECTIVE

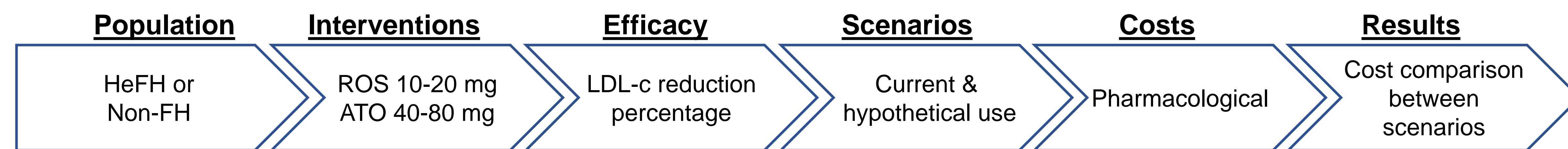
- According to the most recent guidelines, rosuvastatin and atorvastatin have demonstrated a relevant reduction in low-density lipoprotein cholesterol (LDL-c) levels, which is the main objective to lower cardiovascular (CV) risk, specifically in high and very high CV risk patients^{1,2,3}.
- In previous studies, rosuvastatin (10-20 mg) and atorvastatin (40-80 mg) had an equivalent effect to reduce LDL-c⁴. However, atorvastatin is more used than rosuvastatin in the clinical practice in Spain⁵.
- The aim of this study is to estimate the economic impact emerged from the substitution of equipotent doses of rosuvastatin and atorvastatin, defined as doses with similar reduction in LDL-c levels, in patients treated with high intensity statins in Spain.**

METHODS

Model Structure

- A cost-consequence model was developed with a 3-year time horizon from the perspective of the National Health System (NHS).
- The population included were patients ≥18 years old who have been diagnosed with heterozygous familial hypercholesterolemia (HeFH) or non-familial hypercholesterolemia (non-FH), and are currently treated with moderate/high-intensity statins (rosuvastatin 10-20 mg or atorvastatin 40-80 mg).

Figure 1. Model Structure



Inputs, assumptions & outcomes

- In Table 1, efficacy and cost data are presented. LDL-c reductions were gathered from published data from Spanish Arteriosclerosis Society registry and were used to define the equipotent doses. Only pharmaceutical costs were included in the analysis^{6,7,8}.

Table 1. Reduction in LDL-c levels (%) and cost by treatment

Treatment		HeFH ⁶	Non-FH ⁷	Retail price ^{8,*} (€, 2021)
Rosuvastatin	10 mg	-40.9%	NA	€9.96
	20 mg	-45.7%	-50.9%	€19.72
Atorvastatin	40 mg	-39.7%	-49.6%	€16.58
	80 mg	-45.3%	-51.8%	€32.74

HeFH, heterozygous familial hypercholesterolemia, LDL-c: low-density lipoprotein cholesterol; NA: not applicable; non-FH: non-familial hypercholesterolemia. *Costs were expressed as retail price plus VAT. The Royal Decree Law 8/2010 was applied.

- Different scenarios were assessed for each set of equipotent doses in each population: a current scenario, where current use of atorvastatin and rosuvastatin was considered; and three hypothetical scenarios, where reductions in the use of atorvastatin of 5%, 10% and 20% and consequent increases in rosuvastatin consumption were assumed within 3 years.
- The main outcome was the economic impact associated with the substitution of atorvastatin for the equipotent doses of rosuvastatin, calculated from the annual cost per reduction of 1% in LDL-c for each intervention.
- Scenario analyses were performed in five subpopulations that represented different Spanish regions: Andalusia, Catalonia, Valencian Community, Galicia and Madrid Community.

REFERENCES

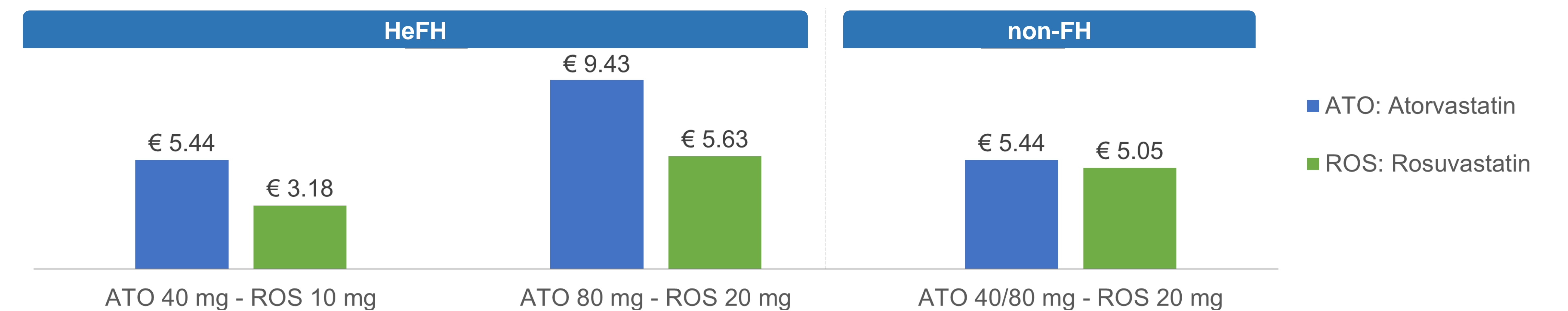
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RESULTS

Base case

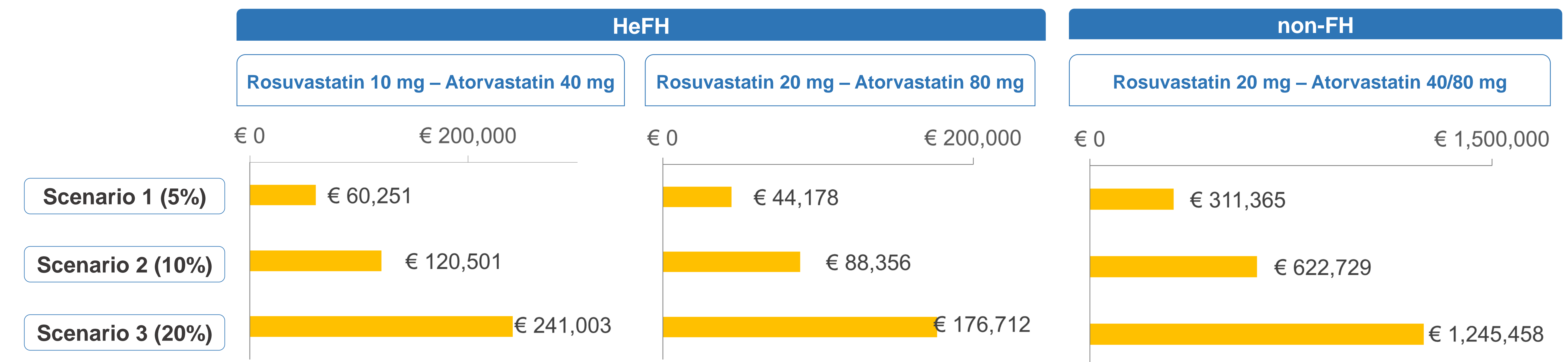
- Over the 3-year analysis, a total of 14,444, 14,501 and 14,561 patients with HeFH were included, respectively; while for the population with non-FH, 231,555, 232,466 and 233,434 patients were estimated, respectively.
- In patients with HeFH, rosuvastatin 10 mg and atorvastatin 40 mg resulted equipotent, as well as rosuvastatin 20 mg and atorvastatin 80 mg. In patients with non-FH, rosuvastatin 20 mg was equipotent to atorvastatin 40 mg and 80 mg. Therefore, a mean weighted reduction was defined for both doses (50.2%).
- In both populations, rosuvastatin presented a lower annual cost per reduction of 1% in LDL-c, regardless of the dose (Figure 2).

Figure 2. Annual cost per 1% reduction in LDL-c at equipotent doses in each population (per patient)



- The substitution of atorvastatin for equipotent doses of rosuvastatin in patients with HeFH resulted in potential costs savings within 3 years (€44,178-€241,003). In non-FH patients, the reduction in the use of atorvastatin and the increase in rosuvastatin resulted also in potential cost savings within 3 years (€311,365-€1,245,458) (Figure 3).

Figure 3. Potential cost savings over 3 years



Scenario Analyses

- In scenario analyses, Andalusia (HeFH: €11,258-€78,037; non-FH: €283,263-€1,133,051), Catalonia (HeFH: €10,756-€80,239; non-FH: €24,609-€98,435) and Madrid Community (HeFH: €7,026-€33,079; non-FH: €61,992-€247,968) were the regions with the highest potential savings.

CONCLUSIONS

- Therapeutic substitution of equipotent doses of atorvastatin for rosuvastatin in patients with HeFH and non-FH could lead to potential cost savings for the Spanish NHS and regional services, while maintaining patients' LDL-c control.**
- Rosuvastatin is a more efficient alternative than atorvastatin for the treatment of hypercholesterolemia in patients at high or very high CV risk who need high intensity statin therapy in Spain.**