

Cost-Effectiveness Analysis of Ferric Carboxymaltose (Renegy®) for the Treatment of Iron Deficiency Anemia During Pregnancy: The Mexican Social Security Institute (IMSS) Perspective

EE472

PALADIO-HERNÁNDEZ, JÁ, MA, MS¹, ROBERTO VALDEZ-HUERTA, BA², RODRIGO CERVANTES-MORALES, MD³, GERARDO FONTAN TEPICHIN, BA³
¹PALAGOD, Mexico City, Mexico, ²InMarket, Mexico City, Mexico, ³CHINOIN MEXICO, Mexico City, Mexico

Introduction

According to the WHO, anemia affects over 40% of pregnant women worldwide, with iron deficiency accounting for more than 50% of these cases. Intravenous Ferric Carboxymaltose (FCM, Renegy®) offers significant advantages in managing iron deficiency anemia (IDA) during pregnancy, including the ability to deliver high doses of iron in a single session, enabling rapid restoration of iron stores.

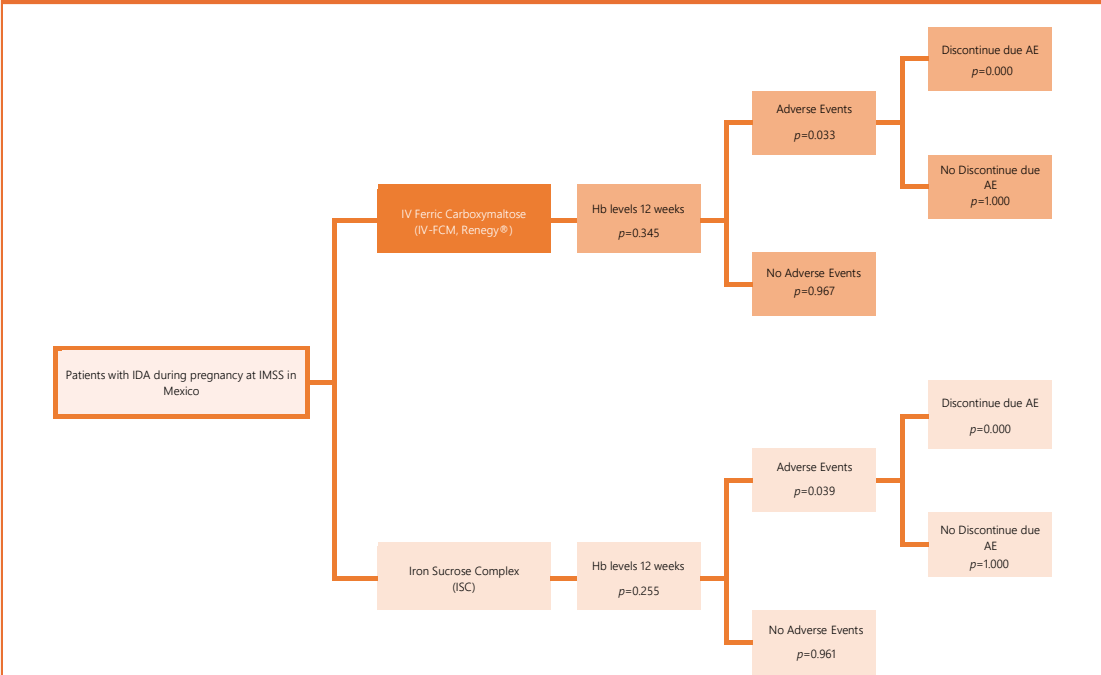
Additionally, FCM has demonstrated superior tolerability in pregnant women compared to Iron Sucrose Complex (ISC), making it a more patient-centered treatment option.

This study assessed the cost-effectiveness of FCM versus ISC for treating IDA during pregnancy from the perspective of the Mexican Social Security Institute (IMSS).

Methods

A decision tree model was constructed to simulate a cohort of patients over a 12-week time horizon, comparing FCM with ISC. Health outcomes and resource utilization data were primarily sourced from scientific literature.

Illustration 1. Simplified decision model.



A series of wide-ranging analyses were therefore performed to assess the sensitivity of the base case results to changes in input parameters and assumptions.

Costs included expenses related to infusions, iron vial acquisition, and adverse event management, with all costs expressed in US dollars (2024).

Outcomes were measured as the mean increase in hemoglobin (Hb) levels from baseline after 12 weeks. Probabilistic sensitivity analyses were conducted to assess result robustness.

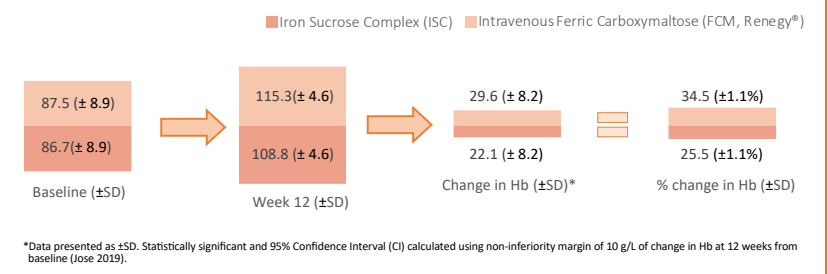
Results

FCM demonstrated rapid and effective iron replenishment, achieving a significantly greater increase in Hb levels over a 12-week period compared to ISC. FCM proved to be a more cost-effective option for IDA in pregnant women, with a total cost per patient of \$622.70 compared to \$961.50 for ISC.

This translates to cost savings of \$338.80 per patient, representing a 68.4% reduction in expenses.

Table 1. Direct medical costs per treatment alternative.					
Intravenous Ferric Carboxymaltose (FCM, Renegy®) 500mg					
Dose	Infusions	Infusion cost	Treatment cost	EA cost	Total cost
2 vial bottles	1 infusion	\$140.86	\$215.39	\$266.45	\$622.70
Iron Sucrose Complex (ISC) 100mg					
Dose	Infusions	Infusion cost	Treatment cost	EA cost	Total cost
4 vials	4 infusions	\$577.00	\$13.20	\$371.30	\$961.50

Illustration 2. Effectiveness: mean increase in hemoglobin (Hb) levels.



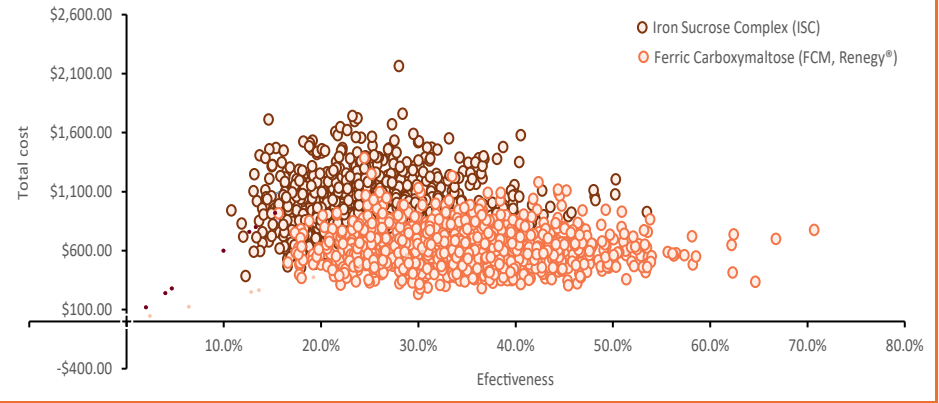
The base case analysis used a first-order Monte Carlo approach, with second-order uncertainty captured in a probabilistic sensitivity analysis.

Table 2. Base case cost-effectiveness analysis.			
IDA treatment	Ferric Carboxymaltose (FCM, Renegy®)	Iron Sucrose Complex (ISC)	Incremental (difference)
Total Cost	\$622.70	\$961.50	-\$338.80
Effectiveness (±SD)	34.5% (±1.1%)	25.5% (±1.0%)	9.80% (±0.3)%
ICER	Dominant	-	-

IDA: Iron deficiency anemia. ICER: Incremental Cost Effectiveness Ratio. Effectiveness: Mean increase from baseline in Hb. SD: Standard Deviation.
Dominant: IV FCM is Dominant since it incurs lower costs and yields superior clinical or economic outcomes compared to ISC.

Sensitivity analyses performed around the key inputs and assumptions of the modeling analysis showed that the results of the base case analysis were robust.

Illustration 3. Probabilistic Sensitivity Cost-Effectiveness Analysis.



Conclusions

From the IMSS perspective, FCM is a clinically superior and a dominant (a treatment is both, less costly and more effective) treatment for IDA in pregnant women compared to ISC. Also, FCM offers faster and more significant Hb improvement, better tolerability, and substantial cost savings, solidifying its role as the preferred therapeutic option for managing IDA during pregnancy.

References

Jose, A., Mahey, R., Sharma, J.B. et al. **Comparison of ferric Carboxymaltose and iron sucrose complex for treatment of iron deficiency anemia in pregnancy - randomised controlled trial.** BMC Pregnancy Childbirth 19, 54 (2019).

Patel H, Deshmukh R, Mehta A. **Comparison of therapeutic response and tolerability of intravenous iron sucrose complex and ferric carboxymaltose in pregnant women with iron deficiency anemia: A prospective observational study.** Mol Clin Oncol. 2025;22(2):155.

Contact

Gerardo Fontan Tepichin
gfontan@chinoin.com



Acknowledgement

CSL Vifor

Presented at ISPOR 2025
Montreal QC, Canada
May 13-16, 2025

This analysis was sponsored by CHINOIN Mexico. The prices of Ferric Carboxymaltose (Renegy®), used in this cost-effectiveness analysis are not binding.