Summary of health economic model: sFlt-1/PlGF ratio versus standard of care

Study | Neonatal cost savings in hypertensive disorders of pregnancy: Economic evaluation of the sFlt-1/PlGF test with real world implementation of biomarkers[1]

Introduction[1]

Preeclampsia is a major contributor to iatrogenic preterm delivery and accounts for significant incremental obstetric costs in the U.S. due associated neonatal care expenses.[2]

Total yearly cost burden of preeclampsia in first year after birth[2]

$2.18 billion

Incorporating the sFlt-1/PlGF biomarker test into the management of hypertensive disorders of pregnancy (HDP) may significantly increase the number deliveries closer to term by safely prolonging pregnancy by two weeks.

Key results of the health economic model[1]

Potential cost savings by incorporating the sFlt-1/PlGF ratio:

Implementation of sFlt-1/PlGF ratio into the management of HDP

$10,595
cost savings

per patient for the first six months of the baby's life*

Implementation of sFlt-1/PlGF ratio resulting in prolongation of pregnancy by two weeks

$62,572
cost savings

for each successfully prolonged pregnancy within the first six months of the baby's life

Conclusion[1]

Use of the sFlt-1/PlGF ratio as an additional tool to standard of care practice for preeclampsia risk stratification may offer significant healthcare savings for patients. Clinical decisions with the supplementation of the biomarker test have the potential to reduce iatrogenic preterm deliveries, potentially improving outcomes and decreasing neonatal care costs.

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Cost-effectiveness of biomarker-aided strategy

The model compared a biomarker-aided approach using the sFlt-1/PlGF ratio versus the standard of care alone for hospitalized patients at risk for preeclampsia with severe features

Methodology[1]

Researchers simulated **1,000 women hospitalized with HDP** across various gestational ages.

A decision tree analysis was performed using published data from the PRAECIS[3] and BEACON[4] studies to estimate **number of births** by gestational age group, in both the standard of care and biomarker-aided approach.

Published data[5] was used to determine the **cost of care** for infants within the first six months of life, broken down by gestational age at birth.

To determine the **total cost of care for each approach,** the cost value within each gestational age group was multiplied by the estimated number of births in each gestational age group, and totaled for each approach.

Births by gestational age: Standard of care vs. biomarker-aided approach
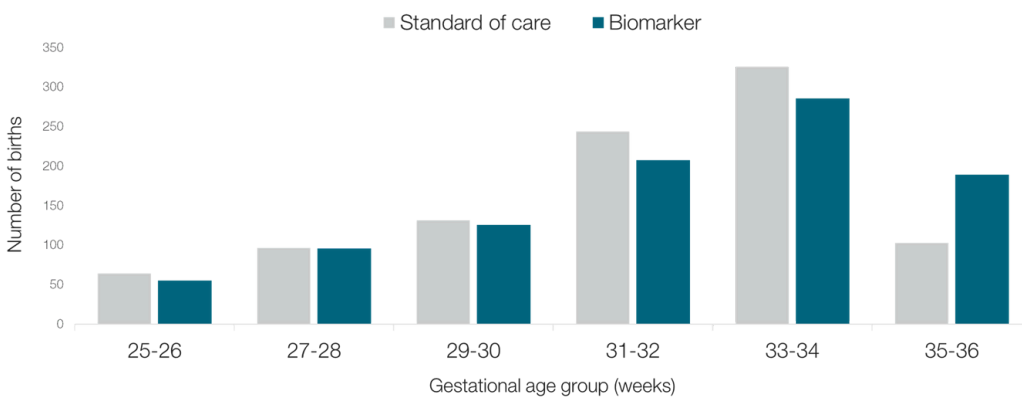
The distribution of births by gestational age for **standard of care** alone resulted in a total cost of care of **$159 million**.

The distribution of births by gestational age for the **biomarker-aided approach** resulted in a total cost of care of **$148 million.**

Cost savings calculations[1]

The analysis takes into account the total cost of care between the two approaches in relation to the clinical outcome of interest. The clinical outcome data focused on the number of deliveries that were prolonged by two weeks after presentation of HDP for each approach, according to the model.

		Biomarker		Standard of care				
Δ Total cost of care	=	$148,432,308	–	$159,027,641	=	$10,595,333	=	$62,572
Δ Number of pregnancies prolonged by two weeks		574.3	–	405.8		168.5		

* $10,595,333 / 1,000 patient simulations = $10,595 overall cost savings per patient

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