



USE CASES

quantusFLM

Medical Imaging with Artificial Intelligence

quantusFLM — Noninvasive Estimation of Fetal Lung Maturity

Product Description

quantusFLM is a non-invasive test based on the quantitative analysis of fetal lung ultrasound images using artificial intelligence. Developed by Transmural Biotech from a research project at Hospital Clínic de Barcelona, it estimates the risk of neonatal respiratory morbidity (respiratory distress syndrome and transient tachypnea) without the need for amniocentesis. It is performed using a conventional ultrasound scan of the fetal lung, is compatible with Voluson systems, and provides a report in just a few minutes via a web platform, with accuracy comparable to that of amniotic fluid analysis in multicenter studies.

Epidemiological Context

In Spain, between 7% and 9% of births are preterm, accounting for more than 20,000 babies per year, and approximately 6% are late preterm (weeks 34 to 36). Neonatal respiratory morbidity, primarily respiratory distress syndrome and transient tachypnea, is one of the leading causes of admission to the neonatal ICU and of morbidity and mortality associated with prematurity. Assessing fetal lung maturity is key to determining the timing of delivery and the need for corticosteroids, but the gold-standard method—amniocentesis—is an invasive procedure with associated risks of infection, bleeding, or pregnancy loss.

Use Cases

CU-FLM-01: Alternative Information to Amniocentesis

Stakeholders	Pregnant woman at risk of preterm birth, obstetrician, or maternal-fetal medicine specialist
Main Workflow	In pregnant women at risk of preterm birth who require an assessment of fetal lung maturity, quantusFLM noninvasively estimates the risk of neonatal respiratory morbidity by analyzing pulmonary ultrasound images, providing additional information to assess the need for amniocentesis.
Key Benefit	Avoids unnecessary invasive procedures, reducing the risks associated with amniocentesis. Provides objective information to support clinical decision-making.
Success Metrics	Reduction in the number of amniocenteses performed, rate of complications avoided, concordance with laboratory results.

CU-FLM-02: Additional Information for the Prescription of Corticosteroids

Stakeholders	Pregnant woman between 34 and 36 weeks with a risk of preterm birth, obstetrician
Main Flow	In pregnant women at risk of preterm birth between 34 and 36 weeks of gestation, quantusFLM provides a noninvasive estimate of fetal lung maturity that complements the specialist's clinical assessment, offering additional information to help determine whether corticosteroid administration is indicated.
Key Benefit	Helps tailor the indication for corticosteroids, avoiding unnecessary administration and ensuring their use when they provide the greatest benefit, especially when there is uncertainty regarding respiratory risk.
Success Indicators	Alignment of corticosteroid indications with actual risk, reduction in unnecessary administrations, and improved neonatal outcomes.

CU-FLM-03: Support for Planning Elective Deliveries in High-Risk Pregnancies

Stakeholders	Maternal-fetal medicine specialist, pregnant woman with an indication for elective delivery (e.g., preeclampsia, gestational diabetes, fetal growth restriction)
Main Workflow	When assessing the optimal timing for delivery, the specialist performs a fetal lung ultrasound. quantusFLM estimates the risk of neonatal respiratory morbidity and provides additional data—along with gestational age and other clinical parameters—to help determine the timing of delivery.
Key Benefit	Helps balance the risks of prematurity against those of prolonging the pregnancy. Supports individualized decisions regarding the timing of delivery.
Success Indicators	Reduction in neonatal ICU admissions due to respiratory causes; alignment of the timing of delivery with actual risk.