

Target fortification at the Wake Forest Baptist Health NICU



With Dr Chandel



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The Miris HMA™ was cleared by FDA in the end of December 2018. Soon after the company received a request from the Wake Forest Baptist Health NICU and they subsequently became the first NICU in US with the FDA cleared version of the Miris HMA™. Over a year down the road we checked in with Doctor Amit Chandel, Assistant Professor of Pediatrics, to hear how the Miris HMA™ has improved the nutritional care of their smallest babies.

How did you come to hear about the Miris HMA™?

I had always wondered that with so much advancement in science and tests moving from labs to bedside, that there would be something available to analyze the components of breast milk, so that we could really know what nutrition we are giving to our most vulnerable preterm newborns. Infant nutrition is one of my core interests. Our Neonatology Chief Dr Shenberger was aware that there is a breast milk analyzer by Miris which is used in NICUs in Europe and that it had recently been approved by US-FDA. I was immediately drawn to this and we purchased the milk analyzer in the ensuing months for our NICU.

We were using the standard and adjustable techniques for fortification of human milk in our NICU,

both these approaches either under or over shoot the optimal nutritional needs for the infant. So, we were very excited to hear about Miris HMA which could help these infants by analyzing the maternal milk and giving us the information about the macronutrient composition of mom's milk.

What did you find when you started analyzing mother's milk in your NICU?

Research has shown variation in maternal milk composition with dietary intake, gestational age, corrected gestational age of the infant in the same mother and large variation between mothers. When we started analyzing maternal milk in our NICU, we found similar variation in maternal milk macronutrient composition which was very fascinating.

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What has been the benefits of the analysis?

We are currently analyzing the milk of mothers who had babies born less than 31 weeks gestational age. We wanted to focus on the babies who are the most vulnerable and we can get at least 4 weeks of analysis and target fortification. Our target fortification program has been running for 9 months now and, despite our numbers being small, we are definitely seeing a positive trend towards better weight gain and linear growth in babies receiving target fortified milk. An additional benefit that is hard to quantify is that mothers feel very satisfied providing their milk for analysis knowing that it would help their little ones grow better.

What does the target fortification process look like in your NICU? Who does what?

Our team consists of lactation consultant, NICU nutritionists, milk technicians and myself. We currently analyze two times per week. Our lactation

consultant provides information regarding milk analysis to eligible mothers during her lactation consultation and provides mothers with the milk collection kit. When mothers return milk for analysis, it is analyzed by our lactation consultant. The report generated by the HMA is reviewed by the NICU nutritionists and macronutrient components are put into an automated excel based calculator, which tells us how much protein needs to be added to the maternal milk. This information is relayed by the nutritionists to the milk technicians, who will finally prepare the milk to specification and forward the target fortified milk to the nurse who is caring for the individual baby.

How do you manage billing of the analysis as it does not have a CPT code?

We currently have not been billing the analysis, but this is something that we are thinking about for the future.

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Clinicians, not analyzing in their NICU, often asks us if mothers react negatively to the analysis of their milk, that they would get the impression that there is concerns regarding the content of their milk. What is your experience, how have you informed mothers of the purpose of the analysis and what have their reaction been?

I think it is a genuine concern which cannot be brushed away. We discussed this question within our team when we were implementing the milk analysis in our NICU. To address this concern, we developed a standard way for communicating the benefits of analyzing and emphasized that it is being used to optimize maternal milk to the needs of the growing preterm infant. So far, our experience has been really good, and mothers feel very empowered and satisfied that they are giving the milk for analysis and upon analysis if any optimization is required it is provided to their infants.

One year in, what would your advice be to a NICU considering implementing human milk analysis and target fortification in their NICU?

Optimal Nutrition is one of the cornerstones for good growth and development of these vulnerable preterm infants who are predisposed to growth failure because of being born preterm and various other comorbidities associated with prematurity, like chronic lung disease. With macronutrient variation in human milk being a known fact, human milk analysis provides a quick way of analyzing these variations and targeted fortification a tool to overcome them. This approach of fortification is very precise and has growing evidence about improving growth. It gives us an objective way to fortify human milk instead of just guessing with standard and adjustable fortification techniques. I think this is going to be adopted in more and more NICUs in coming time.



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