Background

- Human milk is the preferred form of nutrition of all infants. Breastfeeding initiation is recommended immediately postbirth and ideally within the first hour (World Health Organization [WHO], 2010).
- The importance of human milk in the management of preterm and high-risk neonates is well documented and recommended by the American Academy of Pediatrics (AAP) and colostrum is recognized as the first immune stimulator in infants.
- The underdeveloped gastrointestinal tract and the presence of prematurity with its associated complications prevents external feedings during this period. The prolonged inability to feed can lead to intestinal atrophy, necrotizing enterocolitis, feeding intolerance and nosocomial infections.
- These factors have identified the need for safe and efficacious alternatives for administering preterm colostrum as a potential "immune therapy" to 2909 infants in the first days of life when they cannot be fed.
- Colostrum contains many types of protective agents, with the potential to be delivered as an oral immune therapy (C-OIT) before enteral feedings have begun. Studies as shown that it is a safe, and feasible practice that is well tolerated even by the smallest premature infants.

Objective

- To determine the NICU staff's knowledge base regarding the importance and benefits of colostrum painting.
- To educate the staff of the NICU on the practice of performing colostrum painting and to adopt these practices as part of routine patient care.

Method

- 40% of staff consisting of registered nurses participated in a survey to assess their knowledge and understanding of colostrum painting.

Results of Survey

- An order must be written to initiate oral administration of colostrum and length of immune therapy.
- Mothers will be requested to bring their fresh (never frozen) colostrum to the NICU in order to be able to start oral care prior to freezing.
- Colostrum and mature milk can be stored up to 48 hours in the refrigerator and then placed in the freezer to be saved for the initiation of enteral feeds.
- Oropharyngeal administration of colostrum is not given as an enteral feeding and is in small volumes that the infant does not need to swallow; it is for gut priming.
- A small amount of milk (typically 0.2 mL divided between 2 cheeks) is placed on the oral mucosa in the buccal cavity for absorption. A sterile cotton swab or oral applicator is used for each application of human milk.

Benefits of Colostrum Painting?

- The unique properties of human milk provide the neonate with "immunologic, anti-infective, antiinflammatory, egypgenic, and mucosal membrane protecting properties.
- Human colostrum has higher concentrations of secretory IGA, growth factors, lactoferrin, anti-inflammatory cytokines, oligosaccharides, antioxidants, and other protective components as compared with mature human milk.
- Lactoferrin binds to iron, preventing pathogenic organisms from obtaining iron from the infant necessary for their survival; in addition small clinical trials it has shown to decrease the incidence of lower respiratory tract infections, the duration of dehydrating diarrhea, the severity of rotavirus infection, and the colonization with giardia in infant.

What Is Colostrum Painting?

- Colostrum, is the first milk rich in cytokines and other immune agents that provide bacteriostatic, bactericidal, antiviral, anti-inflammatory and immunomodulatory protection against infection.
- Colosrnum painting, also called colostrum oral immune therapy (C-OIT) is an alternative method of administering colostrum by the oropharyngeal route.
- It involves placing small amounts of the colostrum directly onto the oral mucosa with the expectation that the colostrum or selected components will be absorbed by the mucous membranes.
- Colostorum oral immune therapy (C-OIT) provides an immune therapy that reduces neonatal complications by improving progression to enteral feeding and delivering powerful immune-boosting nutrition.

Procedure For Colostrum Painting?

- A caregiver, preferably the parent, gently paints the inside of the mouth including the tongue, gums, and buccal area.
- Oral painting with human milk should continue until the infant is able to take feeds by mouth (ideally at the breast or bottle).

Conclusion

- Evidence has demonstrated that early introduction of human milk (colostrum) to neonates in the NICU particularly the preterm infants has significant benefits and should become a standard practice in our unit.
- Goal for our unit is to engage nurses to actively participate in the collection of colostrum, and to educate mothers on the importance and value of colostrum oral immune therapy (C-OIT).
- As primary caregivers, nurses are at the bedside to encourage mothers to provide human milk within the first 4h of delivery.
- Caregivers should share the science of human milk with parents, describing it as an immune therapy (not solely nutrition).
- Goal is to help the parents to keep track of the volume and frequency of human milk expression and praise their success.
- Continually support parents and advocate for "never-fail" and "always-use" of human milk for all infants.
- Use creative approaches to support human milk use in the NICU.
- Be in the forefront of research activities that will support the use of the gut "priming" and colostrum painting in clinical practice.

References