In Preterm Infants Impact of Perinatal Factors on Breast Milk Composition and Volume

A recent paper explored how maternal age, delivery type, and infant sex affect mothers' milk production and nutritional content after premature birth.

Study

The current study documented milk production in mothers who delivered preterm babies over the first 15 days postpartum. The study was conducted over two years in the northwestern part of Spain. The milk composition and production volume were assessed in 45 Caucasian mothers who gave birth to 52 infants.

All babies were born before 32 completed weeks of pregnancy or weighed 1,500 g or less at birth. The median pregnancy duration was 31 weeks, and the birth weight was 1,375 g.

Results

The median milk production in this study was 80 mL on day 4. As expected, this was linked to inadequate milk production at six weeks.

If the milk produced on day 4 was less than 140 mL/day, the mother was likely to produce <500 mL by day 15, confirming earlier literature. In fact, on day 15, the median milk volume was 275 mL per day, well below the 500 mL mark of successful milk production.

Nutritional differences were noted as well. Colostrum produced by mothers who delivered vaginally was richer in fat than after Cesarean delivery, with a significant difference on day 3 but not after. The trend toward higher fat content in vaginal deliveries continued at days 7 and 15 but was not statistically significant at later points. The mother's age or the infant's sex did not make a significant difference.

Vaginal delivery predicted higher milk production than Cesarean deliveries, though this difference was not statistically significant. The inevitable delay in breastfeeding after a Cesarean section might account for this, as it prevents early bonding, which is key to initiating milk production.

In some literature, an emergency Cesarean section is less disruptive to lactations than an elective Cesarean section, possibly because emergency procedures often follow the onset of labor and associated hormonal changes. However, the specific distinction was not analyzed in the current study.

Similarly, mothers younger than 35 produced more milk on average than mothers over 35. Again, this difference was not statistically significant in this study. The authors note that a larger sample size or different age categories might clarify these trends in future research.

Implications

The study suggests that only 26% of mothers produced enough milk, more than 500 mL per day by day 15, meaning 74% did not reach this threshold. This is consistent with prior research, indicating satisfactory milk production in a small minority of preterm mothers.

This underlines the need to record extracted milk volumes right from the beginning for mothers of babies in neonatal medical care. "Early intervention in these mothers' milk production could help achieve adequate volumes, ensuring optimal production at discharge."

Mothers must be educated to feed their babies colostrum and express or extract it within an hour of birth to ensure increased milk production. This applies even more to preterm births when lactogenesis is already impaired.

Other factors, such as the mother's body mass index and body fat content, could affect breast milk characteristics, but they were not included in this study.

Additionally, previous studies have observed that the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic had a negative impact on HM production. Many mothers experienced uncertainties about safe breastfeeding and HM production during the lockdown. Having donor milk banks in the same hospital means milk is available for the baby, further discouraging breastfeeding. Health agencies uniformly recommended breastfeeding even if the mother was positive for the virus.

Conclusion

The study findings suggest that milk volume <140 mL/day on day 4 is linked to <500 mL on day 15. The present study found that maternal age and type of delivery did not have a statistically significant effect on milk volume. However, trends were observed toward higher production in younger mothers and after vaginal delivery.

Colostrum from mothers who delivered vaginally compared to Cesarean section has a higher fat content on day 3, but this difference was not statistically significant at late time points.

Future studies should be larger and more comprehensive to validate these results.

Source:

https://www.news-medical.net/news/20250610/Early-signs-of-breastfeeding-failures-after-premature.aspx