

Pediatric Research (1998) **43**, 270–270; doi:10.1203/00006450-199804001-01605

Individualizing the Lipid Content of Own Mothers' Milk: Effect on Weight Gain for Extremely Low Birth Weight (ELBW) Infants ♦ 1583

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(Spon by: R. Kimura)

Hindmilk (HM) feeding of own mothers' milk (OMM) results in greater weight gain than composite milk (CM; foremilk+hindmilk) feeding for preterm (PT) infants. However, in the clinical setting, the between-mother variability for milk volume, milk flow rate, and lipid content precludes the use of standardized instructions for HM fractionation. In this prospective study we used the creatocrit (CRCT) technique, an accurate estimate of the total lipid content in OMM, to individualize HM fractionation and feeding for 21 ELBW (<1250g) infants whose mean birthweight and gestational age were 827g(450-1150g) and 26.4 wks (24-31 wks), respectively. Of the 21 infants, 19 required HM feedings due to mean daily weight gain < 15g on fortified CM. Of these 19 infants, 13 gained >15g/d on fortified HM, whereas 6 infants needed higher-calorie OMM (hind-hindmilk; HHM), acquired by mothers' fractionating HHM later in the milk expression procedure, to achieve this weight gain. See Table. For these 19 infants, mean daily weight gain was significantly higher for the 10 days after individualizing lipid content (HM/HHM) than for the previous 10 days (or for the duration of CM feeding, if <10 days), with daily intake=140-150cc/kg/d for the two time periods (19.7g vs 3.83g, t=7.20, p<.0001). The two infants who did not require HM gained 24.5g and 25g per day on CM (CRCT=10% and 13%, respectively) over the same study period. These data are the first to reveal the clinical utility of combining HM and CRCT techniques to achieve desired weight gain on OMM feedings. The between-mother variability of CRCT measures for CM, HM, and HHM underscores the importance of individualizing OMM fractionation guidelines in the clinical setting.

	CM	HM	HHM
N	19	19	6
Mean CRCT	8.4 (6-10)	11.3 (9-18)	13.3 (11-15)
Mean Wt. Gain (g/d)	3.8 (-15-13)	18.0 (8-29)	29.0 (24-37)