

**At First Three Minggu After Delivery**

Dessy Shinta Murty, Sri Mulatsih, Neti Nurani

Department of Child Health, Faculty of Medicine,

Universitas Gadjah Mada/Sardjito Hospital Yogyakarta, Indonesia

**ABSTRACT**

**Background:** Human milk's is recommended nutrition for every infant. It contains macronutrients which change dynamically and vary among mothers. Knowledge of detailed macronutrients content in human milk is needed to improve nutritional management especially for preterm infants.

**Objective:** To measure macronutrient and calorie content and those changes in preterm and term human milk on three lactation periods at first three week after delivery.

**Methods:** We conducted a prospective study among 80 mothers of infants who were hospitalized in Department of Perinatology/ NICU Sardjito Hospital. Carbohydrate, fat, protein and calorie contents were measured using MIRIS human milk analyzer in every week for three week consecutively after delivery. Human milk samples were single-daytime obtained in the morning by full breast expressed method.

**Results:** Median of protein, fat, carbohydrate, and calorie contents on mature preterm milk were 1.40 (IQR 0.38), 3.25 (IQR 1.00), 5.70 (IQR 0.80) g/dl, and 60 kcal/dl. Median of protein, fat, carbohydrate and calorie contents on mature term milk were 1.40 (IQR 0.35), 3.30 (IQR 0.77), 5.80 (IQR 0.75) g/dl, and 62 kcal/dl at third week after delivery. In both group, protein content at first week was significantly higher than third week ( $p < 0.001$ ) after delivery. In contrast fat and calorie content at first week were significantly lower than third week ( $p < 0.05$ ) after delivery.

**Conclusions:** There were no significant differences of macronutrient and calorie contents between preterm and term human milk at first three week after delivery. There were significant changes in fat, calorie, and protein contents in both preterm and term human milk during early lactation.

**Keywords :** human milk, macronutrient, calorie, MIRIS, preterm

## INTISARI

**Latar belakang:** ASI merupakan sumber nutrisi yang direkomendasikan bagi setiap bayi. Kadar makronutrien dalam ASI bersifat dinamis dan bervariasi pada tiap individu ibu. Pemeriksaan makronutrien diperlukan dalam manajemen nutrisi yang lebih tepat pada bayi kurang bulan.

**Tujuan:** Mengetahui perbandingan kadar makronutrien ASI dari ibu dengan bayi lahir kurang bulan dan cukup bulan di tiga minggu pertama setelah persalinan.

**Metode:** Kami melakukan penelitian prospektif terhadap 80 ibu sehat yang terdiri dari 41 ibu dengan bayi lahir cukup bulan dan 39 ibu dengan bayi lahir kurang bulan di bagian Perinatologi/ NICU RSUP Dr. Sardjito. Kadar karbohidrat, protein, lemak, dan kalori ASI diperiksa dengan *human milk analyzer* MIRIS sebanyak 3 kali, yaitu di minggu 1, 2, dan 3 setelah persalinan..Sampel ASI didapatkan dengan metode sekali pengambilan dan *full-breast expressed* di pagi hari.

**Hasil:** Median kadar protein, lemak, karbohidrat (g/dl) dan kalori (kcal/dl) pada kelompok ASI kurang bulan adalah 1,40 (IQR 0,38), 3,25 (IQR 1,00), 5,70 (IQR 0,80), dan 60 kcal/dl. Median kadar protein, lemak, karbohidrat (g/dl) dan kalori (kcal/dl) pada kelompok ASI kurang bulan adalah 1,40 (IQR 0,35),3,30 (IQR 0,77),5,80 (IQR 0,75), dan 62 kcal/dl. Secara bermakna kadar protein lebih tinggi di minggu pertama daripada minggu ketiga setelah persalinan. Sebaliknya kadar lemak dan kalori secara bermakna lebih rendah di minggu pertama daripada minggu ketiga setelah persalinan.

**Kesimpulan:** Tidak ada perbedaan bermakna kadar makronutrien dan kalori ASI dari ibu dengan bayi lahir kurang bulan dan cukup bulan di tiga minggu pertama setelah persalinan. Terdapat perubahan bermakna kadar protein, lemak dan ASI di tiga minggu pertama setelah persalinan.

**Kata kunci :** air susu ibu, makronutrien, MIRIS, kurang bulan, kalori