Perbandingan efektivitas terhadap status seng, akseptabilitas dan toleransi makanan pendamping air susu ibu berbasis hati ayam dan tepung beras fortifikasi pada bayi usia 6 bulan = The acceptability and effectivity of chicken liver based complementary food compared to fortified rice cereal on zinc status in six month old breastfed infant

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Abstrak

ABSTRAK
Latar belakang.Masa pemberian makanan pendamping air susu ibu (MPASI), yaitu usia 6 sampai 24 bulan, merupakan salah satu periode kritis untuk mencegah malnutrisi. Growth faltering banyak terjadi pada fase ini, disebabkan kandungan nutrisi MPASI yang tidak lengkap dan tidak seimbang serta tingginya angka infeksi.Prevalensi defisiensi seng pada usia 6-24 bulan tinggi, baik di negara berkembang maupun negara maju. Mayoritas MPASI pertama yang diberikan di Indonesia berupa produk nabati, yaitu beras, beras merah, kacang-kacangan, buah, dan sayur yang memiliki kandungan seng yang rendah dan fitat yang tinggi sehingga merupakan faktor risiko defisiensi seng. Hati ayam merupakan sumber seng, protein, dan zat besi yang baik. Perlu dilakukan evaluasi pemberian hati ayam sebagai MPASI pertamadalam hal akseptabilitas, toleransi, serta efektivitas terhadap status seng.
Tujuan. Mengevaluasi MPASI buatan rumah berbahan dasar hati ayam dalam hal akseptabilitas, toleransi, dan efektivitas terhadap status seng.
Metode. Uji klinis acak dengan pembanding MPASI tepung beras fortifikasi dilakukan di Puskesmas Kecamatan Jatinegara, Koja, dan Kramat selama Februari sampai Juni 2014. Terdapat tiga kelompok intervensi, yaitu kelompok MPASI hati ayam, MPASI bubur susu (tepung beras fortifikasi, mengandung susu), dan MPASI single grain (tepung beras fortifikasi tanpa susu). Intervensi dilakukan selama 30 hari. Sebelum dan sesudah intervensi dilakukan pengukuran antropometri dan pemeriksaan seng plasma. Setiap hari dilakukan pencatatan volume MPASI yang dihabiskan dan efek samping. Analisis Anova dan Bonferroni dilakukan untuk menilai perbedaan antar kelompok. Korelasi Pearson dan regresi linear digunakan untuk menilai faktor-faktor yang memengaruhi status seng plasma.
Hasil. Sebanyak 90 bayi diikutsertakan dalam penelitian, namun terdapat 7 subjek drop-out dan 17 sampel darah lisis sehingga data yang dapat dianalisis adalah 66 bayi. Akseptabilitas ketiga jenis MPASI setara. Tidak didapatkan efek simpang pada semua kelompok. Ketiga jenis MPASI dapat memenuhi kebutuhan harian seng sebesar 3 mg/hari. Efektivitas terhadap status seng ditunjukkan dari selisih seng plasma pra-intervensi dan pasca-intervensi. Perbedaan selisih sengplasma (g/dL) hati ayam dan bubur susu adalah 12,0 (IK 95% 0,6;23,4), hati ayam dan single grain adalah 12,0 (-23,4;-0,6), serta bubur susu dan single grain 8,5 (-2,3;19,3). Pertambahan berat badan dan panjang badan berbeda bermakna antara ketiga kelompok.
Simpulan. Akseptabilitas MPASI hati ayam setara dengan tepung beras fortifikasi. Tidak didapatkan efek samping selama pemberian MPASI hati ayam dan tepung beras fortifikasi. Efektivitas MPASI hati ayam terhadap status seng plasma lebih baik dibandingkan tepung beras fortifikasi. Faktor yang memengaruhi efektivitas MPASI terhadap status seng plasma adalah jenis MPASI, yang mungkin berkaitan dengan rasio molar fitat/seng, dan asupan kalsium.

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ABSTRACT
Background.High prevalence of zinc deficiency and growth faltering were observed during the complementary feeding perioddue to low quality complementary food and high prevalence of infection. Most of first complementary food given to Indonesian infants were plants sources which contain low zinc and high phytate, thus put Indonesian babies into high risk of zinc deficiency. Chicken liver is a good source of zinc, protein, and iron, making it a good option for complementary food.
Objective. To evaluate chicken liver based complementary food in terms of acceptability and effectivity on zinc status.
Method. Randomized clinical trial comparing three groups of complementary food:chicken liver, fortified rice cereal containing milk, and fortified rice cereal without milk given to predominantly breastfed infant aged around 6 month old. This study took place in primary health care of Jatinegara, Koja, and Kramat District during February to June 2014. Intervention was given for 30 days. Anthropometric measurement and plasma zinc investigation were performed before and after intervention. Amount of consumed complementary food was recorded daily. Anova and Bonferroni test were used to evaluate difference between groups. Factors influencing plasma zinc status were evaluated with Pearson correlation and linear regression.
Results. Ninety babies were enrolled, 7 subjects refused to continue study and 17 blood samples were hemolyzed thus only 66 subjects were analyzed. The three groups shown similar acceptability and were able to met daily requirement of zinc of 3 mg/day. No adverse effect was observed during study period. The increment of pra-intervention and pasca-intervention plasma zinc was used as an indicator of effectivity on zinc status. Mean difference of zinc increment (g/dL) between two groups were 12,0 (95% CI 0,6;23,4) for chicken liver and rice cereal containing milk, 12,0 (-23,4;-0,6) for chicken liver and rice cereal without milk, and 8,5 (-2,3;19,3) for rice cereal containing milk and without milk. Weight and length increment showed significant difference between three groups.
Conclusions. The three groups showed no difference in acceptability and were able to met daily requirement of zinc of 3 mg/day. Chicken liver group demonstrated better effectivity on zinc status compared to fortified rice cereal groups. Dietary factors influencing plasma zinc status were type of complementary food, which probably correlated with molar ratio of phytate/zinc, and calcium intake.