

ICCN Poster Presentations

Food and the child

The long term effects of soy-based formula on isoflavone concentration of plasma and urine, and growth and recognition development at 10 and 20 months old infants

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Background: Soy-protein formulas are widely used for feeding babies with cow-milk allergy. Soybeans contain phytochemicals which are biochemically active component, isoflavones. The safety and long-term effects of isoflavones in soy-based formulas has been questioned recently.

Objective: We investigated the effects of soy-based formula on isoflavone concentration of plasma and urine, and growth and recognition development in 10 and 20 months old infants.

Design: After the preceding study of 4 months of infants, thirty-three healthy infants were participated the follow-up study. Experimental groups were the breast milk (n=7, BM), the breast milk for 4 months thereafter soy-based formula (n=6, BM+SBF), the soy-based formula (n=9, SBF), and the cow's milk-based formula fed group (n=8, CBF). Dietary and anthropometric assessments, and infant development test (gross motor, fine motor, personal social, language, cognitive adaptive) were carried out.

Results: The measurements of weight, height, head and chest circumference at 10 and 20 months of age were all in normal growth range in comparison with Korean of pediatric growth chart. No significant differences were found for the consumption of daily nutrients and the recognition development among the four groups. Plasma concentrations of daidzein and genistein at 10 months (107.8 ± 3.5 , 112.8 ± 3.7 and 137.0 ± 8.7 , 143.3 ± 9.1 ng/ml) and 20 months (27.1 ± 6.2 , 28.3 ± 6.5 and 32.7 ± 1.4 , 34.2 ± 1.4 ng/ml) of BM + SBF and SBF group were significantly higher than those of other experimental groups ($p < 0.05$). Also, urine concentrations of daidzein and genistein at 10 months (9.82 ± 3.3 , 9.34 ± 3.1 and 11.01 ± 2.5 , 10.53 ± 2.4 µg/ml) and 20 months (4.88 ± 1.8 , 4.67 ± 1.7 and 9.49 ± 2.6 , 9.08 ± 2.5 µg/ml) were significantly higher in both BM+SBF and SBF group than those of other experimental groups ($p < 0.05$).

Conclusions: These data suggest that soy-based formula could be used for long-term feeding.

Nutritional status of 0-36 month old children in the Zabol cities centres

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Aims: many environmental and familial factors influence nutritional status. The aim of this analytical cross-sectional study was determination of nutritional status and the effects of some ecological and demographic factors on 0-36 months age children growth.

Methodology and results: 553 women with at least one 0-36 months old child were randomly selected from 5 health and medical centres by using familial fold number during May to July 2001. The nutritional status of 600 children under three years old was determined by using anthropometrical and growth charts (nchs). Then a questionnaire was completed for each child by interviewing the mother and using health records. Data on weight and height of the child, mother's age, duration of breast feeding and so on were collected. Data was analyzed with χ^2 and Anova methods. The research was approved and supported by Zahedan University of Medical Sciences, Iran. On the basis of Gomez (expected weight for age=ew/age) and Waterlow (height for age=h/age and expected weight for height=ew/h) classification, 59.2, 47 and 28.2% of children were malnourished, respectively. The mean duration of breast-feeding was 14 months. A significant correlation was found between the age of termination of breast feeding and the nutritional status of children (ew/age, $p=0.007$; and h/age, $p<0.001$ respectively).

Conclusion: the results indicate that with increasing the length of breast feeding the greater the prevalence of malnourished children.