

## Neonatal Nursing Congress 2018: Case report of exclusively Breast-fed Neonate with Cow Milk Protein Allergy (CMPA) - Sandhya Ghai- National Institute of Nursing Education

Sandhya Ghai

### Abstract

The amount of Cow Milk Protein Allergy (CMPA) has been recognized in India. Overall the incidence of CMPA in the infants nursed with formula milk is 5-7% and in breastfed infants, it is 0.5-1%. Though the incidence is less in breastfed infants and early presentation is rare here in this case report we present a case of CMPA associated with exclusive breastfeeding. A three months old female baby presented with complaints of streaks of blood in the stool. The infant had 1 episode of bloodline in stool at two months of age. At three months of age, the baby was brought for neonatal consultation when an episode of blood streak in stool increased to 4 times a week. The baby was otherwise well. Stool examination revealed reddish-yellow ill-formed alkaline reaction with traces of mucus and blood, pus cells 12-15, RBC 10-12/HPF, no cyst/ova, and eosinophil count was 3 cells/cm and occult blood positive. Colonoscopy revealed a loss of vascular pattern and nodularity + throughout. Biopsy finding revealed intact colonic lining epithelium. Lamina propria shows focal congestion, moderate lymphoplasmacytic cells infiltrate with occasional eosinophils, bits of colonic mucosa with surface inflammatory cell exudate. No significant increase in eosinophils was noted. The mother stated an increased intake of milk and almonds in the days preceding to the incident. As the episodes of blood streaks in stool increased, she was primarily advised to stop almonds and eggs. But the signs did not subside and she was then advised total exclusion of CMP in her diet. The symptoms, however, still persisted. The dietary evaluation revealed the intake of CMP from sources having hidden content of milk e.g. bread. Mother was again counselled for CMP free diet and breastfeeding was continued. The episodes of blood streaks in baby's stools settled. Gradually complementary feed was started at five months of age with semolina (suji) halva and mashed banana. After three days of this complementary feed, the infant developed constipation which was relieved on 10 days with glycerine suppository. Currently baby is on complementary feed with semolina halva, coconut water, and fluids. The incidence of cow milk protein allergy (CMPA) has been recognized in India. Among Indian children at the time of diagnosis, the

mean age is  $17.2 \pm 7.8$  months, and the mean duration of illness is  $8.3 \pm 6.2$  months. Overall the incidence of CMPA in the infants fed with formula milk is 5-7% and in breastfed infants, it is 0.5 - 1%.  $\beta$ -lactoglobulin in cow's milk is responsible for the allergy. Usually the infant present with symptoms that mimics Hirschsprung's disease and malrotation. Mostly at the time of weaning infants present with abdominal distension, vomiting, dysentery/bleeding per rectum due to allergic proctitis, proctocolitis and enterocolitis, and rarely with constipation, failure to thrive, and watery diarrhoea. In addition to these, the neonates may present with refuse feed, eczema, irritation shock, renal failure. However, the incidence is less in breastfed infants and initial presentation is rare here in this case report we present a case of CMPA related to exclusive breastfeeding. A 3 months old female baby presented with complaints of streaks of blood in the stool. The baby is 2<sup>nd</sup> child of non-consanguineous Indian couple. The mother had a history of hypothyroid and gestational diabetes.

### The Case:

The baby was delivered by normal vaginal delivery at 38+4 weeks with a birth weight of 2.91 kg. The Apgar score was 8 and 9 respectively at 1 and 5 min of life. The formula feed was started after an hour of life and breastfeeding was started at 15 hours of life. On day 5 thyroid profile performed and was normal. The baby was discharged on day 7 of life on Arbivit 0.5 ml. At the time of discharge, the transcutaneous bilirubin was 10, the baby was alert and active, maintaining temperature, hemodynamically stable with no congenital malformation. Age-appropriate immunization given and weight gain was 500 gm over a month. At one month of age, the baby developed jaundice with serum bilirubin of 13.2 mg and mild abdominal distention. In view of pathological jaundice, G6PD was suspected whereas the report turned out to be negative. Breast milk associated jaundice was suspected and the mother was advised to breastfeed well. Gradually over 2 weeks, the TSB was in the normal range. The infant

Sandhya Ghai  
National Institute of Nursing Education, India

remained apparently well till 2 months of age when the first streak was observed no medical advice was sought. At 3 months when streaks of blood in stool increased to 4 times per week the baby was brought to the neonatal unit. On taking history mother reported intake of high-fat milk and increase intake of almonds before the baby had initiation of signs and symptoms. Gradually the episodes of streaks of blood in stool increased. Injection vitamin K was given and the mother was advised to take normal milk, stop taking almonds, and eggs. At 4 months of age again there was a reoccurrence of blood in the stool.

To diagnose the case history and clinical examination should raise a suspect and lab investigation supports it. The immune reaction can be IgE or non-IgE mediated. Strict allergen avoidance is advocated that is diet modification for nursing mothers and for formula-fed infant's hydrolysed formula. In the case of mothers is breastfeeding she should be encouraged to avoid all milk and related products from her diet and should continue breast-feeding. Mothers should be referred to a dietician for counselling to avoid all hidden sources of CMP. Addition the child should receive CMP free complementary feedings and drugs. Initially while confirming the diagnosis mother should be encouraging to take CMP free diet for 14 days and if there is an improvement in symptoms she should continue to avoid CMP. In case no improvement the infant should be evaluated for other cause and treat. If symptoms improve CMP can be reintroduced to the mother's diet. In case this challenge is a positive mother can continue to breast on CMP free diet and calcium 1000 mg/day can be added to her diet. In case the infant has the persistence of signs and symptoms on the breastfeed of mother on CMP free diet other substances such as egg or soy allergy can be suspected and mothers have to eliminate such products from the diet in order to continue breastfeeding. In case an infant has not breastfed all products containing CMP and animal products should be stopped. Extensively hydrolysed infant formula is started and in infants with severe allergy amino acid-based formula can be used. After 6 months of age if tolerated Soya milk protein can be an option. In addition to this nutritional counselling and regular monitoring of growth and development is mandatory. Undue and overt elimination should be avoided as the majority >90% develop tolerance by 6 years of age, 75% develop by 3 years of age, henceforth it is essential to evaluate the child for a tolerance of milk every 6-12 months.

**Note:** This work is partly presented at 30<sup>th</sup> Global Experts Meeting on Neonatal Nursing and Maternal Healthcare, May 14-15, 2018 Singapore