

## Case Report of Exclusive Breastfed Neonate with Cow Milk Protein Allergy (CMPA)

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### Abstract

Overall the incidence of CMPA in the infants fed with formula milk is 5-7% and in breastfed infants it is 0.5-1%. The incidence of cow milk protein allergy (CMPA) have been recognized in India. 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 3 months old female baby presented with complain of blood streaks in stool. The infant had one episode of blood streak in stool at 2 months of age. At 3 months of age baby was brought for neonatal consultation when episode of blood streak in stool increased to 4 times in a week. On taking history mother reported intake of high fat milk and increase intake of almonds before baby had initiation of signs and symptoms. Gradually the episodes of blood streak in stool increased as mother continued to take high fat milk and almonds. Considering this high intake initially the mother was advised to shift to normal milk, stop almonds, and eggs. The symptoms didn't subside then total exclusion of CMP was done in addition to almonds, and eggs from mothers diet. The symptoms persisted and the infant developed proctocolitis. Dietary evaluation revealed intake of sources having hidden content of milk. Mother was again counselled for CMP free diet and breast feed was continued. Gradually complementary feed was initiated at 5 months of age with semolina halva and mashed banana. After three days of this complementary feed the infant developed constipation which was relieved on 10 day with glycerine suppository. Currently baby is on complementary feed with semolina halva, coconut water and fluids.

**Keywords:** Breastfed Neonate; Cow Milk Protein Allergy (CMPA)

### Introduction CMPA

The incidence of cow milk protein allergy (CMPA) have been recognized in India. Among Indian children at the time of diagnosis the mean of age is  $17.2 \pm 7.8$  months and mean duration of illness is  $8.3 \pm 6.2$  months [1]. Overall the incidence of CMPA in the infants fed with formula milk is 5-7% and in breastfed infants it is 0.5 - 1% [2].  $\beta$ -lactoglobulin in cow's milk is responsible for the allergy. Usually the infant present with symptoms that mimic 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 diarrhea [3]. In addition to these the neonates may present with refuse feed, eczema, irritation shock, renal failure [4]. 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 3 months old female baby presented with complain of streaks of blood in stool. The baby is 2<sup>nd</sup> child of non-consanguineous Indian couple. The mother had history of hypothyroid, and gestational diabetes.

## The Case

The baby was delivered by normal vaginal delivery at 38<sup>+4</sup> weeks with 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 breast feed 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 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 normal range.

The infant remained apparently well till 2 months of age when 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 neonatal unit. On taking history mother reported intake of high fat milk and increase intake of almonds before baby had initiation of signs and symptoms. Gradually the episodes of streaks of blood in stool increased. Injection vitamin K was given and mother was advised take normal milk, stop taking almonds, and eggs. At 4 months of age again there was reoccurrence of blood in stool. 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/cmm and occult blood+ve. Colonoscopy revealed 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 reported an increased intake of milk and almonds in the days prior to the episode. As the episodes of blood streaks in stool increased, she was initially advised to stop almonds and eggs. But the symptoms didn't subside and she was then advised total exclusion of CMP in her diet. The symptoms however, still persisted and the infant developed proctocolitis. Dietary re-evaluation revealed intake of CMP from sources having hidden content of milk e.g. bread. Mother was again counselled for CMP free diet, whereas the breast feed was continued and 1000 mg/day calcium was added into the mother diet. Gradually complementary feed was initiated at 5 months of age with samonila halva and mashed banana. After three days of this complementary feed the infant developed constipation and was relieved on 10 day with glycerine suppository. In addition to above diet gradually the other home made foods were introduced along with Isomil, the soy based milk free lactose free spray dried infant formula. The infant had on an off constipation. At age of 1 and half year she developed severe constipation and was managed by neonate the Polyethylene glycol and syrup Piklin.

**Management as per literature:** To diagnose the case history and clinical examination should raise a suspect and lab investigation support it [5,6]. 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 infants hydrolysed formula. In case mothers is breast feeding she should be encouraged to avoid all milk and related products from her diet and should continue breast-feeding. Mothers should be referred to dietitian 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 encourage to take CMP free diet for 14 days and if there is 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 mothers diet. In case this challenge is 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 persistence of signs and symptoms on breastfeed of mother on CMP free diet other substances such as egg or soy allergy can be suspected and mother have to eliminate such products from diet in order to continue breastfeeding [6]. In case of infant is not breastfed all product containing CMP and animal product should be stopped. Extensively hydrolysed infant formula is started and in infants with sever 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 [5,6]. Undue and overt elimination should be avoided as 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 tolerance of milk every 6-12 months.

Open cow milk challenge test period is of one week can be used for diagnosis of CMA at home. The milk intake is initiated at 0.5 ml to 20 ml on day one, than increase to 90 ml on second day and the end of the week it is increased up full feed. This challenge is re-conducted at eight day and after four weeks. If not symptoms appear intake of normal amounts can be initiated and continue to reassess the infant [4].

### Conclusion

In conclusion, we share our experience of managing a case of allergic procto-colitis due to CMPA in an exclusively breast fed neonate. It is important to remember hidden sources of CMP intake while modifying maternal diet. The management course became little complicated as mother faced problem in the identification of hidden sources of cow milk in food products as all ingredients are not always mentioned on the wrappers. This indicates that mothers should be advised to consume food products after confirming the company and must prefer only home-made food.

### Bibliography

1. Poddar U., *et al.* "Cow's milk protein allergy: an entity for recognition in developing countries". *Journal of Gastroenterology and Hepatology* 25.1 (2010): 178-182.
2. Sambrook J. "Incidence of cow's milk protein allergy". *British Journal of General Practice* 66.651 (2016): 512.
3. Arunachalam P and Mathai J. "Neonatal segmental enteritis due to cow's milk allergy". *Journal of Indian Association of Pediatric Surgeons* 18.4 (2013): 149-151.
4. YQ Teng, *et al.* "Clinical Analysis of Cow's Milk Allergy in Eleven Neonates". *Hong Kong Journal of Paediatrics* 16 (2011): 273-277.
5. Brill H. "Approach to milk protein allergy in infants". *Canadian Family Physician* 54.9 (2008): 1258-1264.
6. Koletzko S., *et al.* "Diagnostic Approach and Management of Cows Milk" (2018).

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