



Editorial

Side Effects of Baby Milk Powders: Awareness to the Lactating Mothers

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A B S T R A C T

The present study governs that breast feeding is the superior for baby because it contains the necessity nutrients to maintain baby's immunity. A number of baby milk powder products are available in the market globally to meet the substitution of breast feeding. It was shown that milk powder preparations contain dissolved oxidized cholesterol which has been reported to produce cardiac problem. Oxidized cholesterol is called as oxysterols produced either by free radicals or by enzymes. Certain free radicals-derived oxysterols have been suspected of being initiators of atherosclerotic plaques. World Health organization (WHO) recommends exclusive breast feeding to the baby for at least 6 months. Breast milk gives infant steady supply of WBCs, antibodies, lymphocytes and vitamins, etc which are responsible for building immunity to the body of infants. According to WHO, early initiation of breast feeding within an hour immediately after birth could bring infant mortality rate down by 22%. Therefore the present study is an awareness to the modern mothers of advanced society to save the life of their kids and future of the country by breast feeding and should not solely dependent on the baby milk powder formulations.

Keywords: Baby milk powder, oxysterols, atherosclerosis, no substitution for breast feeding.

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1. INTRODUCTION

Different branded baby milk powder products are formulated by various multinational companies to meet an alternative requirement of breast feeding ¹. The milk powder can be prepared by evaporating the milk to dryness usually by using spray drying. The purpose is to increase the shelf life of milk powders to preserve it for long duration and due to low moisture content they do not need to be refrigerated. Milk powders contain all the essential amino acids along with proteins, carbohydrates and some minerals such as calcium and potassium. According to USAID, average proportions (by weight) of major nutrients in non fat dry milk are 36% protein, 52% carbohydrates (predominantly lactose), calcium

1.3%, and potassium 1.8%. On the other hand, it contains an average of 25-27% protein, 36-38% carbohydrates, 26-40% fat, and 5-7% minerals. However, inappropriate storage conditions such as high relative humidity and high ambient temperature can significantly degrade the nutritive value of milk powder. As per WHO guidelines, an adult should take 400 to 500 milligrams of calcium a day to prevent bone fracture. Milk can fulfill nutritional supplements to the body and is ideal food for the mammals including human². Apart from food and nutrition, dairy products such as dry whole milk, dry butter milk, dry whey products, non fat skimmed milk and dry dairy blends which are prepared from powdered milk are being commercially traded³. Too much use of milk powders to the baby is not good for health. An attempt has been made in the present study to aware to lactating mothers regarding side effects of feeding of the milk powders to the baby.

2. METHODS OF PREPARATION OF MILK POWDERS

Milk powders were originated as a modern method of preserving milk since long antiquity in the year of 1802. In 1832 the first commercial production of dried milk was initiated by M Dirchoff⁴. In 1837 and in 1855, William Newton and T.S. Grimwade patented a vacuum drying process and a procedure to prepare dried milk⁵. In modern times, milk powders were prepared by spray drying, drum drying and freeze drying processes respectively using pasteurized milk obtained from skimmed milk, whole milk, butter milk or whey. In spray drying, the milk is first concentrated in an evaporator and then the concentrated milk is sprayed into a heated chamber to make complete evaporation of the water content keeping finely divided powdered particles intact⁶.

Alternatively, the milk can be dried by drum drying where milk is applied as a thin film to the surface of a heated drum, and the dried milk solids are then scraped off. However, powdered milk made this way tends to have a cooked flavor, due to caramelization caused by greater heat exposure whereas in freeze drying, which preserves many nutrients in milk, compared to drum drying which alters the properties of the milk powder, such as its solubility in cold water, its flavor, and its bulk density. It was proved that on long storage of dried skim milk can deteriorate its quality and can hamper the health of baby⁷.

3. RESULTS AND DISCUSSION

The powdered milks are reported to contain oxysterols i.e. oxidized cholesterol in large amount than in fresh milk and oxidized cholesterol is hard to digest by the body. Oxysterols are the derivatives of cholesterol which are produced by either free radicals or enzymes. Having it regularly may cause illness, harmful effects of cholesterol like weight gain, high Blood Pressure, and in the worse cases it leads to many problems related to heart⁸. These are free radical cholesterols

that are suspected to be the initiators of atherosclerotic plaques. In the past, powdered milk was not recommended for people with lactose tolerant. However, according to the United States Department of Agriculture, there is now low lactose content in powdered milk formula. The low lactose formula was originally developed in 1995 for military personnel who had requested to help for their soldiers that were lactose intolerant⁹⁻¹¹. Therefore, babies should not be solely dependent on milk powders instead of breast feeding. As per WHO recommendation, breast feeding must be carried out for at least first six months and up to as much as of age for the proper growth and development of infants¹². Baby can take colostrum through breast feeding which develops immunity to prevent the baby from jaundice attack and incorporates IgA by developing antibodies inside them which helps to fight against the foreign organisms. If a mother is unable to feed a baby, cow's milk can be used as a substituent. Breast feeding not only maintains nutrition, hydration and body temperature but also develops memory. These effects may not be known by the mothers. So the government should start awareness programmes for mother's to save the life of their child. Breast feeding decreases the risk of different life threatening diseases including respiratory tract infection, diarrhoea, asthma, celiac disease, Type-1 diabetes, leukemia and obesity in adulthood. It can trigger various biochemical reactions mediated by enzymes, hormones, growth factors, immunologic proteins and polyunsaturated fatty acids responsible for baby's normal growth intelligence and neuronal development¹³⁻¹⁴. Now-a-days sometimes women are not ready to accept these issues seriously of feeding their babies either because of their busy schedule or sometimes in fear of loss of their beauty. Breast feeding can benefit to the mothers also through weight loss, less post-partum depression, decreased risk of breast cancer, CVS, rheumatoid arthritis and normalization of menstrual cycle¹⁵.

4. CONCLUSION

The present work is awareness to the lactating mothers having tendency to feed milk powder preparations in excess or before 6 months could be fatal for their baby of getting cardiac problem. They must have proper knowledge about the product what they are using. Due to presence of oxysterols in milk powders, it may lead to cause atherosclerosis which is lethal to the child. So lactating mothers should not be dependent on milk powders and it has been recommended for the breast feeding for a number of beneficial effects as given in the following Figure 1¹⁶.

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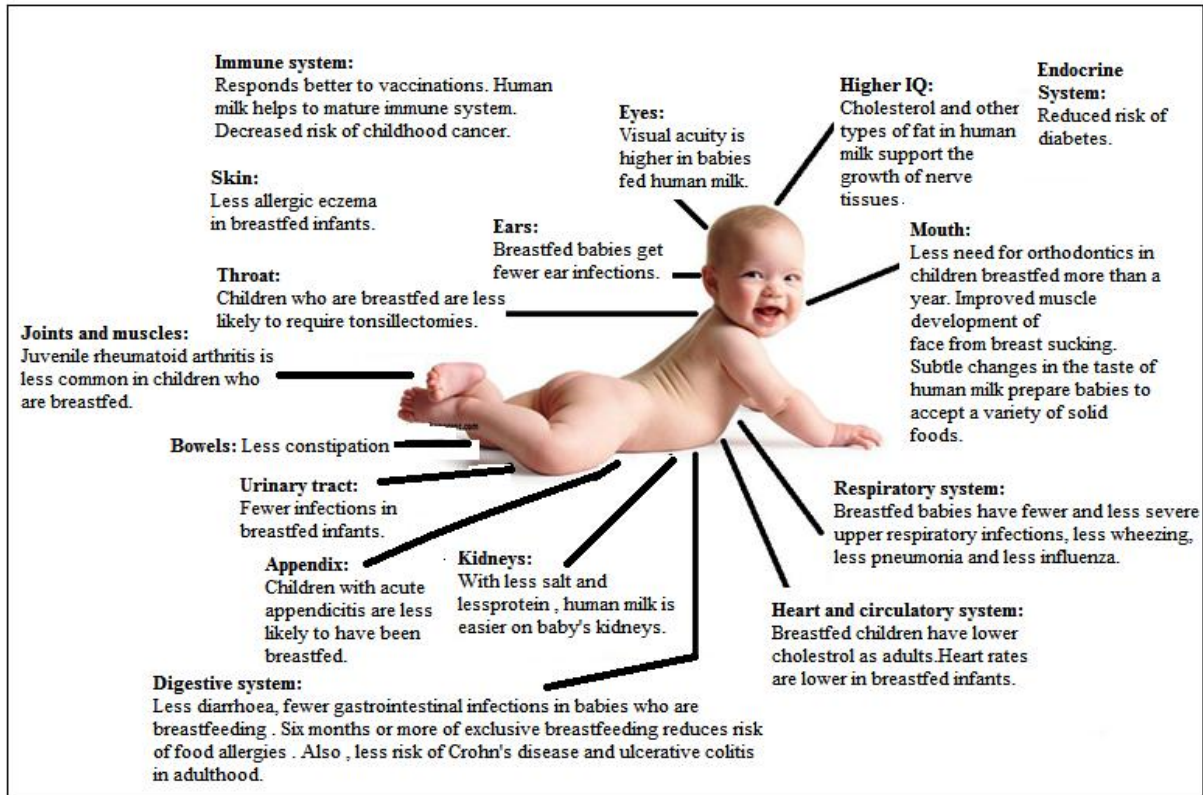


Fig 1: Baby is safe with breast feeding

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