



Center for Management of Infants with Cow's Milk Allergy (CMICMA): The First Center in Thailand

Pipop Jirapinyo, M.D.

Department of Pediatrics, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand.

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More than a decade of intensive researches have been carried out on food allergy of infancy by our group with 2 novel formulas which have been introduced into the world of pediatrics which are a chicken-based formula and a ricamino, while we are getting more and more acquainted with this disease in infancy. Likewise, parents of these infants who are not quite satisfied with their pediatricians in managing this disease in their infants have brought their infants to our unit for the last opinion or for better management. There are new knowledge we have got from hundreds of infants flowing to our unit, some of which have never been described in the world of pediatrics. Therefore our team decided to study this disease immensely by setting up a "Center for Management of Infants with Cow's Milk Allergy" on August 5th 2010. Since then, we have set up 5 affiliated centers around the country to study this disease regionally. The 5 affiliated centers are The Prince Songkhla Hospital, Maharat Chiangmai Hospital, Maharat Nakhon Rajsima Hospital, Chonburi Hospital and the Queen Sirikit Institute for Child Health.

Interestingly, various chronic nonspecific signs and symptoms of infants have been proven that they are caused by food protein allergy. Though these clinical manifestations of the infants are still successfully managed by general pediatricians by prescribing medications which alleviate the symptoms, the infants still need repetitive treatments until the underlying food protein allergy subsides. In contrast, if diagnosis of food protein allergy is made in these infants and appropriate hypoallergenic infant formulas are advised for these infants, most of the infants' symptoms will permanently subside. Using a period of avoiding allergic foods in each individual infant is still a controversial issue. Some can tolerate the allergic foods after excluding the food only 6 months, but some cannot tolerate the food after they have been avoiding the foods for 3 years. However, almost all infants can tolerate most of the allergic foods before they enter primary schools. Therefore this disease has its unique clinical pattern.

Currently, there are only 2 types of formulas recommended for the infants who have CMA. The extensively cow's milk protein hydrolysed formula (EHF) is the initial recommended formula to prescribe to the infants. This EHF may contain only extensive casein hydrolysate (ECH) or only extensive whey hydrolysate (EWH). There is still no study comparing the efficacy between ECH and EWH in the management of CMA in infants. At this moment, there is only a formula with ECH available in the Thai market. Although the cow's milk protein in both formulas is extensively hydrolysed, both still contain some large protein molecules that can stimulate allergic reactions. Since we are the last center for management of this disease, we find a very high prevalences of infants who are still allergic to the formula containing ECH.

According to the universal recommendations, if an infant is still allergic to EHF, it is recommended to switch from an EHF to an amino acid formula (AAF). The AAF is extremely expensive which is 8, and 5 times more expensive than the cow's milk infant formula and EHF, respectively. Only a small percentage of parents in our country can afford to buy the AAF.

Since the year 2004, we successfully developed a chicken-based formula (CBF) for the infants who are allergic to most formulas including EHF. The two purposes of developing CBF are 1) to help the parents who cannot afford to buy AAF for their babies and 2) to be an alternative formula for the management of CMA in infants.

In 2007, we proved that CBF had more marked advantages than soybean formula for the management of CMA. Since then, the CBF has been requested by parents of infants with CMA.

Despite using CBF in the treatment for infants with CMA, there are 10-20% of these infants still allergic to CBF which need AAF as the last option. We thus encountered the same economical problem of the parents in buying the AAF. Also another problem emerges when we switch to the AAF for the infants. Almost 10% of those infants who were fed with AAF



were also allergic to the AAF. These 2 problems brought us to develop a rice-based amino acid formula (Ricamino) in the year 2009. Most infants who are allergic to AAF are able to be fed with Ricamino. The price of Ricamino depends on the capability of the parents to pay since generally it is set at 30% of the AAF price.

With these 2 innovations in our unit as well as new knowledge about CMA, we are ready to study the clinical patterns of this disease throughout the country. Starting from the year 2011, the 5 other affiliated centers mentioned above will join us in studying the disease extensively. Gracefully, both CBF and Ricamino got the most prestigious awards for their social contributions to Thai communities from the National Innovation Agency (NIA) in the year 2007 and 2010, respectively. Besides, both formulas are the first formulas that have ever been developed which are much more tolerated by most infants with CMA.

The Center for Management of Infants with Cow's Milk Allergy (CMICMA) in Siriraj Hospital has since it was established gained vast knowledge about the food allergy of Thai infants. The knowledge likewise will benefit to the international pediatric communities. Most of the unknown factors which disturb infantile growths and developments are revealed to be related to CMA. One of our extremely far reaching goals is to

prove that many surgical conditions of infancy are caused by CMA. Early management of CMA in these infants will gradually abate their symptoms and the symptoms will not progress to the surgical condition.

In conclusion, food allergy of infancy (FAI) is the new defined disease that always includes cow's milk protein allergy. It is more prevalent these days which may be as high as 5% of infants during their first year of age. Cow's milk infant formula is one of the major causes of this disease. Also, a history of allergy in one of the parents is one of the closely related factors. Many more studies are still needed to search for the cause of malfunctions of T regulator lymphocytes during the early infancy period of these affected infants. And lastly, finding the best formula for these infants with CMA who are not breast-fed is urgently needed to solve all of the problems in these infants.

REFERENCE

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