

# Cow's milk allergy as viewed by family physicians

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## Abstract

**Aim:** Allergic diseases are increasing in the modern world and newborn infants encounter food allergies primarily. The most commonly seen food allergy in Turkey is cow's milk protein allergy. In this study, cow's milk protein allergy was examined from the perspective of family doctors and levels of knowledge were measured with a face-to-face questionnaire.

**Material and Methods:** The responses of 210 (146 males, 64 females) family doctors who completed the questionnaire by participating in the study and the relationship of these answers with professional experience (Professional Experience; 1-10 years / 11-30 years).

**Results:** Family physicians; 99 (47.1%) had previously encountered milk allergy, 162 (72.1%) knew the age at which cow's milk allergy is seen, 51 (24.3%) knew to what extent the allergy could recover, 65 (31%) knew the clinical conditions related to cow's milk allergy, 97 (46.2%) knew that diet could create cow's milk allergy, 10 (4.8%) knew the tests that are used in food allergies, and 19 (9%) knew that formula could be involved in cow's milk allergy.

Professional experience ranged from 1 to 27 years (1-10 years, n=151 / 11-30 years, n=59) No statistically significant difference was determined between the group with 1-10 years of experience and the group with 11-30 years of experience in respect of the level of knowledge of cow's milk allergy.

**Conclusion:** In conclusion, family physicians should receive regular in-service training on allergy topics just as for other areas of medicine and the efficacy of the training should be evaluated with objective measurements.

**Keywords:** Cow's Milk; Family Doctor; Questionnaire.

## INTRODUCTION

As for all other allergic diseases, the frequency of food allergies has shown a year-on-year increase. Cow's milk allergy is the most common food allergy seen in infants (1). However, cow's milk allergy is a temporary condition and spontaneously resolves after the age of 3 years in 85% of cases (2). Nevertheless, clinical symptoms can be seen in a broad spectrum ranging from mild skin findings to life-threatening anaphylaxis (3).

The first step in definitive diagnosis and treatment of cow's milk protein allergy is to remove cow's milk protein from the diet of the mother and the infant (4). Although allergy skin test and serum milk-specific IgE test are used for diagnosis, the gold standard diagnostic test is a double-blind, placebo-controlled food provocation test (5).

When maternal breast milk is not sufficient, nutritional support can be given with amino acid-based formula (6). The aim of this study was to measure the level of knowledge of family physicians who could be the first

to diagnose and treat cow's milk protein allergy and to monitor treatment together with allergy physicians, and at the same time to raise the awareness of family physicians about this extremely important disease group.

## MATERIAL and METHODS

From a total of 300 family physicians working in our province, 210 volunteered to participate in this study. Approval for the study was granted by the Local Ethics Committee (Kahramanmaras Sutcu Imam Universty, Clinical Trials Local Ethics Committee, 14.02.2018/2018-4/15). During monthly routine meetings held by the Regional Health Authority, the family physicians were interviewed face-to-face and the previously prepared questionnaire was completed. In the preparation of the questionnaire, reference was made to the studies of Gupta et al, Erkoçoglu et al and Topal et al (7-9). The forms used were prepared to elicit demographic information from the physicians, and measurements regarding identification of patients with cow's milk protein allergy and their skills in treating such patients.

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Correct responses to the questions asked to the family physicians were determined. Analysis was made of whether or not there was a relationship between the correct responses and duration of professional experience. The study participants were separated into 2 groups as those with 1-10 years of professional experience and those with 11-30 years of experience.

### Statistical Analysis

Statistical evaluations of the study data were made using SPSS 18 software. Categorical variables were stated as number (n) and percentage (%) and measurable variables as mean±standard deviation (SD). Relationships between

variables were evaluated with the Chi-square test. A value of  $p < 0.05$  was accepted as statistically significant.

### RESULTS

Evaluation was made of the responses to each question asked and it was determined that of the total 210 family physicians, 99 (47.1%) had previously encountered milk allergy, 162 (72.1%) knew the age at which cow's milk allergy is seen, 51 (24.3%) knew to what extent the allergy could recover, 65 (31%) knew the clinical conditions related to cow's milk allergy, 97 (46.2%) knew that diet could create cow's milk allergy, 10 (4.8%) knew the tests that are used in food allergies, and 19 (9%) knew that the use of formula could be involved in cow's milk allergy (Table 1).

**Table 1. Responses to the questions asked to family physicians on the subject of cow's milk protein allergy**

Questions	n (%)
Have you ever encountered a child with cow's milk allergy? (Yes/Total)	99/210 (47.1)
<b>In which age group is cow's milk allergy most likely to be seen?</b>	
a) 0-2 Years	162 (72.1)
b) 2-5 Years	44 (21.1)
c) 5-11 Years	3 (1.4)
d) 11 Years and older	1 (0.5)
<b>In what proportion of children with cow's milk allergy, does tolerance (elimination of the allergy) develop over time?</b>	
a) <25%	47 (22.4)
b) 25-50%	69 (32.9)
c) 50-75%	42 (20)
d) >75%	51 (24.3)
e) No idea	1 (0.5)
<b>Which of the allergic diseases below may be related to cow's milk protein allergy?</b>	
a) Intestinal Colic	43 (20.5)
b) Atopic Eczema	48 (22.9)
c) Urticaria	28 (13.3)
d) Anaphylaxis	3 (1.4)
e) All of the above	65 (31)
f) No idea	23 (11)
<b>What action would you take for a patient with suspected cow's milk protein allergy?</b>	
a) Treat the allergic reaction that has developed and recommend continuing to use milk.	9 (4.3)
b) Only remove cow's milk from the diet.	32 (15.2)
c) Remove cow's milk from the diet but state that milk products such as cheese and yoghurt could be consumed.	72 (34.3)
d) Completely remove cow's milk and all milk products from the diet of both the infant and the mother.	97 (46.2)
<b>Which tests are ordered for the diagnosis of food allergy?</b>	
a) Skin prick test	54 (25.7)
b) Food-specific IgE levels	105 (50)
c) Oral provocation with food test	11 (5.2)
d) All of the above	10 (4.8)
e) No idea	30 (14.3)
<b>Which formula food would you give in cases of cow's milk protein allergy?</b>	
a) Normal formula	7 (3.3)
b) Soya-based formula	31 (14.8)
c) Hypoallergenic formula	80 (38.1)
d) Amino acid-based formula	19 (9)
e) No idea	73 (34.8)

The family physicians in the study comprised 146 (69.5%) males and 64 (30.5%) females, with a mean age of 38.53 ± 7.72 years (range, 24 -58 years).

The mean duration of professional experience was 8.95 ± 6.78 years (range, 1-27 years). Of the total participants,

151 had experience of 1-10 years (mean, 5.28±2.94) and 59 had experience of 11-30 years (mean, 18.34±4.34). No statistically significant difference was determined between the group with 1-10 years of experience and the group with 11-30 years of experience in respect of the level of knowledge of cow's milk allergy (Table 2).

**Table 2. Comparison of the correct responses given to the questions according to the years of professional experience of the family physicians**

	Professional experience 1-10 Years (n:151)	Professional experience 11-30 Years (n:59)	p value
Gender (F/M)	45/106	19/40	0.741
Previously encountered cow's milk protein allergy (Yes) n (%)	66 (43.7)	33 (55.9)	0.112
Correctly knowing the age of allergy - n (%)	117 (77.5)	45 (76.3)	0.852
Correctly knowing the tolerance of allergy - n (%)	40 (26.5)	11 (18.6)	0.234
Knowing symptoms related to allergy - n (%)	48 (31.8)	17 (28.8)	0.676
Knowing the diet of the infant and mother -n (%)	74 (49)	23 (39)	0.191
Knowing the diagnostic tests - n (%)	9 (6)	1 (1.7)	0.193
Knowing the formula to be used - n (%)	14 (9.3)	5 (8.5)	0.857

## DISCUSSION

Previous studies have shown that family physicians must be supported with occasional training on the subject of the approach to cow's milk protein allergy (10). In accordance with the information in general literature, more than half of the family physicians in this study gave incorrect responses to all the questions that were asked and this lack of knowledge was seen in all age groups regardless of the duration of professional experience. In a long-term study conducted in cities with many allergy clinics, Erkocoglu et al (8) reported a correct response rate of approximately 60%. In the current study, almost half of the family physicians stated that they had never encountered a case of cow's milk protein allergy. This can be thought to be associated with inadequate identification of the disease. Interestingly, approximately three-quarters of the respondents correctly knew that food allergies emerge at a young age. In contrast to this knowledge, approximately a quarter knew the allergy tolerance. In the question about allergy-related symptoms, two-thirds responded incorrectly. In a study by Comberiat et al (11), pediatricians were asked questions about food-related enterocolitis and only 10% were able to give all correct responses. This shows that it is difficult for physicians to identify patients presenting at the clinic with food allergy. Therefore, even if they see a patient with food allergy they may not be aware of it. In the current study, the question with the lowest rate of correct responses was the question of which methods are used for the diagnosis of food allergy, with up to 95% of the family physicians giving an incorrect response. In a study by Topal et al (9) the correct response rate to this question was 75%. This difference could have been due to the previous lack of an allergy center in the city where the study was conducted. Another feature was that in response to the question of which formula should be used in cases of cow's milk protein, the highest response was for hypoallergenic formula. This shows that the use of the word "hypoallergenic" in the name of this formula has

created a false perception that it can be used in allergy treatment. It is clear that the responsibility for this falls on the commercial formula producers and the governmental authorities that determine and oversee health policies.

In our work, the level of knowledge of our family physicians was found to be insufficient. This lack of information is not only the problem of family physicians. The level of knowledge of physicians working in different fields should also be measured and developed. It will be useful to prepare consensus reports in this regard and to send them to doctors. There are precious reports prepared in the literature about the subject (12). It will also draw attention to the importance of preparing new reports.

## CONCLUSION

In conclusion, family physicians should receive regular in-service training on allergy topics just as for other areas of medicine and the efficacy of the training should be evaluated with objective measurements.

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## REFERENCES

1. Barros KV, Flor Silveira VL, Laranjeira MS, et al. evidence for involvement of IL-9 and IL-22 in cows' milk allergy in infants. *Nutrients* 2017;9pii:E1048.
2. Kneepkens CM, Meijer Y. Clinical practice. Diagnosis and treatment of cow's milk allergy. *Eur J Pediatr* 2009;168:891-6.
3. Sarinho E, Lins MDGM. Severe forms of food allergy. *J Pediatr (Rio J)* 2017;1:53-9.
4. Vandenplas Y. prevention and management of cow's milk allergy in non-exclusively breastfed infants. *Nutrients* 2017;9pii: E731.
5. Soares-Weiser K, Takwoingi Y, Panesar SS, et al. EAACI food allergy and anaphylaxis guidelines group. the diagnosis of food allergy: a systematic review and meta-analysis. *Allergy* 2014;69:76-86.

6. Fiocchi A, Schunemann H, Ansotegui I, et al. The global impact of the DRACMA guidelines cow's milk allergy clinical practice. *World Allergy Organ J* 2018;11:2.
7. Gupta RS, Springston EE, Kim JS, et al. Food allergy knowledge, attitudes, and beliefs of primary care physicians. *Pediatrics* 2010;125:126-32.
8. Erkoçođlu M, Civelek E, Azkur D, et al. Knowledge and attitudes of primary care physicians regarding food allergy and anaphylaxis in Turkey. *Allergol Immunopathol (Madr)* 2013;41:292-7.
9. Topal E, Çatal F, Özdemir R, ark. Aile hekimlerinin inek sütü allerjisinin tanısı ve tedavisi ile adrenalin otoenjektörü kullanımı hakkındaki bilgi düzeylerinin ölçülmesi. *Asthma Allergy Immunol* 2014;12:9-14.
10. Lozinsky AC, Meyer R, Anagnostou K, et al. Cow's milk protein allergy from diagnosis to management: a very different journey for general practitioners and parents. *Children (Basel)* 2015;2:317-29.
11. Comberiati P, Landi M, Martelli A, et al. Awareness of allergic enterocolitis among primary-care paediatricians: A web-based pilot survey. *Allergol Immunopathol (Madr)* 2016;44:461-6.
12. Kansu A, Yüce A, Dalgıç B, et al. Consensus statement on diagnosis, treatment and follow-up of cow's milk protein allergy among infants and children in Turkey. *Turk J Pediatr* 2016;58:1-11.