

Knowledge of pediatrician on gastroesophageal reflux/gastroesophageal reflux disease in children: a preliminary study

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Abstract

Background Background Gastroesophageal reflux (GER) is involuntary movement of gastric content into esophagus due to transient lower esophageal sphincter relaxation. This condition usually ignored by physician. Many GER cases have severe complication before properly managed. Ten years after incorporating GER into Indonesia pediatric training curriculum, the knowledge of GER among pediatrician need to be measured.

Objectives To measure pediatrician's knowledge of GER/GERD in children.

Methods This was a cross sectional study using questionnaire and interview.

Result There were 387 respondents who filled the questionnaire and being interviewed. The majority of respondents were between 25-45 years old (33.6%). Respondents who graduated before the year 2000 were 48.3%, and after 2000 were 51.7%. Majority of respondents were general pediatrician (90.2%) and 41.3% working in teaching hospitals. Among pediatricians graduated after year 2000, 66%, 50.5% and 57.5% could give more than 80% correct answer to questions about general knowledge, diagnosis and management of GERD as compared to 49.2%, 42.2% and 47% subjects graduated before year 2000. More pediatricians graduated before year 2000 answered the questions on general knowledge, diagnosis and management < 60% correctly compared to those graduated after year 2000 (42.2%, 25.2% and 28.3% vs. 14%, 11.5% and 12% respectively). Fifty-five of 160 (34.4%) respondents who working in teaching hospital gave more than 80% correct answer to questions about GERD. Compared to those working in non-teaching hospitals, only 17.6% were able to correctly answer more than 80% of questions.

Conclusions Better knowledge about GER/GERD are found among pediatricians graduated after the topics has been introduced to the curriculum and among those practicing in teaching hospitals. [Paediatr Indones. 2010;50:336-9].

Keywords: knowledge, pediatrician, gastroesophageal reflux

Gastroesophageal reflux (GER) is the involuntary movement of gastric content into esophagus due to transient lower esophagus relaxation.¹ This is a common symptoms in infant and children. GER leads to severe complications such as decreased quality of life, failure to thrive, and recurrent respiratory problems. Pediatrician should have good knowledge to recognize and manage the condition properly. Most people do not pay attention when dealing with children with regurgitation or vomiting, until the condition becomes worse.

Pediatrician should recognize whether a GER symptom is physiologic or pathologic. The topics was formally incorporated to Indonesian medical doctor and pediatrics residency curriculum in year 2006 and 2000, respectively.²⁻⁵ Several studies showed that the knowledge of pediatrician about GER/GERD was not sufficient.^{6,7} In Indonesia, since GERD was introduced to pediatric residency curriculum, there was no study evaluating its effect on pediatrician knowledge. This study aimed to measure knowledge about GER among pediatricians to improve the education as needed.

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Methods

This was a cross sectional study conducted in Jakarta and surrounding areas from March to July 2009. Ethical approval for this study was obtained from the Ethics Committee of the Medical School University of Indonesia/Cipto Mangunkusumo Hospital, Jakarta. All pediatricians were included in this study, except if they refused to be interviewed. The required sample size was 385, using estimated proportion of 5%.

Samples were collected by stratified random sampling, based on pediatrician graduation year. We divided the prospective respondents into two groups, those graduated before year 2000 and after 2000. Informed consent was obtained from each subjects.. Statistical analysis was performed using SPSS version 12.

Statistical analysis was performed using SPSS 12 to evaluate subject characteristics, the most questions answered incorrect and number of respondents who could answer correctly either whole or specific questions based on graduation year and working institution (teaching hospital and non teaching hospital).

Results

Of 589 pediatricians, 202 refused to participate. Characteristics of respondents are shown in **Table 1**. The majority of respondents understood the importance of GER/GERD (96.1%) problems in their patients and they were confident to manage it (80.6%). Mostly, they obtained the knowledge from

continuing medical education (69.8%) as seen in **Table 2**.

The result of total correct answers based on graduation year and working institution are described

Table 1. Characteristics of subjects

	n (%)
Age (years)	
< 35	67 (17.3)
35- <45	130 (33.6)
45- <55	67(17.3)
>55	123 (31.8)
Sex	
Male	214 (55.3)
Female	173 (44.7)
Graduation year (general pediatrician)	
Before year 2000	187 (48.3)
Year 2000 and after	200 (51.7)
Recent education	
General pediatrician	349 (90.2)
Pediatric consultant	36 (9.3)
Doctor, Professors	2 (0.5)
Working institution	
Hospital with pediatric residents	72 (18.6)
Hospital with clerkship	88 (22.7)
Non teaching hospital	227 (58.7)

Table 2. Source of information about GER/GERD

Information about GER/GERD	n (%)
Medical school/Residency training	254 (65.6)
Continuing Medical Education	270 (69.8)
Paper	13 (3.4)
Internet	125 (32.3)
Medical journal	164 (42.4)
Pharmacy promotion	71 (18.3)

Table 3. Number of correct answers on questions about general knowledge, diagnosis, and management of GERD

Graduation year and working institution	Respon- dents (n)	Number of respondents answered correctly			
		n (%)			
		80-100%	70-79%	60-69%	<60%
Graduated before year 2000					
Hospital with resident	23	5	5	6	7
Hospital with undergraduate medical student	50	13(26)	3 (6)	15 (30)	19(38)
Non teaching hospital	114	20 (17.5)	16 (14)	30 (26.3)	48 (42.2)
TOTAL	187	38 (20.3)	24 (12.8)	51 (27.3)	74 (39.6)
Graduated in year 2000 and above					
Hospital with resident	49	24 (49)	12 (24.5)	7 (14.3)	6 (12.2)
Hospital with undergraduate medical students	38	13	11	14	0
Non teaching hospital	113	20 (17.7)	42 (37.2)	27 (23.9)	24 (21.2)
TOTAL	200	57 (28.5)	65 (32.5)	48 (24)	30 (15)

Table 4. Results of questionnaire based on working institution

Total Correct Answer (%)	Teaching Hospital n (%)	Non Teaching Hospital n (%)
80 – 100 %	55 (14.2)	40 (10.3)
70 – 79 %	31 (8)	40 (10.3)
60 – 69 %	42 (10.9)	57 (14.7)
< 60 %	32 (8.3)	78 (20.2)

on **Table 3**. Among subjects who graduated before 2000, 49.2%, 42.2%, and 47% could answer correctly more than 80% questions on general knowledge, diagnosis, and management of GERD respectively, while among those who graduated after year 2000 we found 66%, 50.5%, and 57.5% respectively.

Among respondents who graduated before year 2000, we found 42.2%, 25.2%, and 28.3% answered less than 60% correctly on question about general knowledge, diagnosis, and management of GERD respectively, while among those graduated after year 2000 we found 14%, 11.5%, and 12%, respectively. Most respondents who graduated before the year 2000 gave less than 60% correct answer, similar to those who worked in non teaching hospital .

There were 3 questions which were answered most incorrectly by the respondents. The question whether cisapride were recommended for GERD was only answered correctly by 10.6% of respondents. Likewise, only the 42.6% of respondent were familiar about the use of hypoallergenic milk in formula-fed infant with vomiting. The question about milk thickening to reduce vomiting was also answered correctly by 50.4% of respondent.

Discussion

We conducted this study to evaluate knowledge about GERD among pediatricians due to increased concern of this problem. Reflux was usually ignored by physician, not like other symptoms as seizure, diarrhea or fever. The magnitude of this problem is often neglected therefore many physicians missed the opportunity when it becomes pathologic (GERD). Many patients usually come to hospital after the symptoms get worsen although they have already sought for help earlier. This condition can be prevented if physicians had a

good knowledge about GERD.

GERD can be diagnosed by history taking and physical examination. North American Society for Pediatric Gastro-Hepatology and Nutrition (NASPGHAN) recommended the importance of history taking and physical examination. Radiologic examinations are used to exclude other anatomical problem that maybe related with the symptoms. In a study conducted by NASPGHAN, most pediatricians requested for radiologic examinations.⁷ In our study, some respondents did the same thing, but majority knew that the diagnosis can be establish by history taking and physical examination only.

Almost 70% of up to 4 month old infants experience gastro esophageal reflux in their daily life. The prevalence of GERD is 5-9%, which is lower compared to adults. The concern is rises when we notice that most infants have a high number of reflux. Nelson et al assumed that the low prevalence of GERD in pediatric population is due to lack of study in this population.⁸ After GERD was incorporated into pediatric residency curriculum and socialized by Pediatric Gastroenterology Group of Indonesian Pediatric Society, pediatricians started to pay more attention. Based on this study, those who graduated in year 2000 and above were able to answer questionnaire more than those who graduated before year 2000. This condition seems related with the inclusion of GER/GERD in pediatric residency curriculum since year 2000, and it was seen in the result.

Working place, whether in teaching hospital or non teaching hospital seems to be a contributing factor for pediatrician knowledge. Respondents who worked in teaching hospitals were able to answer the questionnaire better than those worked in non teaching hospitals. Respondents in teaching hospitals should maintain their knowledge since they have to teach residents and medical students. In this study, we had interesting results regarding those who graduated before year 2000 and worked in teaching hospitals with residents, which included senior consultants. Majority of them answered correctly less than 60 % of questions about general knowledge and diagnosis of GER/GERD. The reason for this might be due to relatively small sample of this group (n=23) and lesser exposure to other cases other than their specialty.

Cisapride has been proven to be effective in increasing lower esophageal sphincter pressure. There

were six randomized control trial showing clinical improvement in GERD patient.⁹ Recommendation of using cisapride had been socialized by The Indonesian Pediatric Gastroenterology Society. In this study only 10% respondents can answered correctly the question about cisapride which is showed that pediatricians were not familiar with this medication. Study by Shaoul et al also showed similar result.⁶ In Indonesia cisapride is only available in hospital, not in pharmacist or drug store, so the drug was not recognized well by pediatricians as GERD treatment.

In vomiting infant who is formula-fed, it is recommended to try hypoallergenic formula for 1 to 2 weeks.^{10,11} Thickening milk formula also reduces the risk of vomiting, but actually does not improve the reflux index.¹² Almost half of respondents couldn't answer these question properly.

The limitation of our study was not all respondents can be interviewed directly and telephone call was used instead. The answers could not reflect the true knowledge due to interview setting in break or practice time of respondents.

We concluded that the capability of respondents to answer GER questions correctly was related to the time of graduation, whether before or after this topic was introduced to curriculum. Better knowledge is also higher in those working in teaching hospital compared to those do not.

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