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HOW MUCH INFORMATION DO MEDICAL PRACTITIONERS AND ENDOCRINOLOGISTS HAVE ABOUT DIABETIC RETINOPATHY?

Rony Carlos Preti, Fábio Saraiva, João Artur Trein Junior, Walter Y. Takahashi, Maria Elizabeth Rossi da Silva.

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OBJECTIVE: The objective of this study was to use a questionnaire to evaluate knowledge concerning diabetic retinopathy among the physicians present at the 12th Latin American Congress on Diabetes held in São Paulo, Brazil, September 2004.
METHODS: A questionnaire about their experience and management of patients with diabetes mellitus and the ophthalmologic examination was administered to 168 endocrinologists attending the meeting.
RESULTS: Among the 168 physicians, only 36.9% correctly referred patients with diabetes type 1 to an ophthalmologist, whereas 86.9% referred patients with the type 2 disorder as recommended by the American Academy of Ophthalmology. Regarding the correct indication for screening for diabetic retinopathy, more physicians who had received their degree less than 5 years previously implemented this practice (54.8%), as opposed to those who had received their MD 20 years or more ago (22.6%). Regarding their experience in funduscopy during their specialty training, 52.4% claimed to have experience, but only 21.4% of those interviewed performed this examination on their patients. According to 84.5% of the interviewees, the fundus examination influenced their clinical treatment program.
CONCLUSION: Our study demonstrates that medical knowledge among medical practitioners and endocrinologists on preventive measures and periodicity of diabetic retinopathy examinations appears to be far from ideal for diabetes type 1, but satisfactory for diabetes type 2. Therefore, refresher courses emphasizing the correct management of diabetic patients are necessary, because the social and economic impact of retinopathy is significant.

KEYWORDS: Consumer satisfaction. Diabetic retinopathy. Diabetes. Knowledge. Retina.

INTRODUCTION

Diabetic retinopathy is the main cause of reduced visual acuity in the United States.[1,2] It is one of the most common vascular complications of diabetes mellitus (DM) and one of the main causes of new cases of blindness among active people in the workplace.[3–5]

The American Academy of Ophthalmology (AAO) recommends that the first fundus examination (FE) in patients with type 1 diabetes should be performed 5 years after diagnosis of the disorder,[6] because retinopathy is rarely observed before this period.[7,8] However, patients with type 2 diabetes should be examined immediately when they are diagnosed,[6] because the duration of the disease is uncertain, so some degree of retinopathy may be present at this time.[9] The findings at this first examination will determine the frequency of subsequent tests.

Multicenter studies have shown that if laser therapy is indicated at the proper time for treatment of diabetic retinopathy, the probability of blindness is considerably reduced.[10–13] Therefore, it is extremely important for endocrinologists and general practitioners to be fully informed about the diagnosis and treatment of this retinopa-

Ophthalmology and Endocrinology. University Medical School- São Paulo/ SP,Brazil.
Email: rypreti@ig.com.br
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thy, considering its significant social and economic impacts on society.

The objective of this study was to administer a questionnaire designed to evaluate knowledge concerning diabetic retinopathy among physicians present at the 12th Latin American Congress on Diabetes held in São Paulo, Brazil, September 2004.

MATERIALS AND METHODS

A questionnaire with 6 questions was devised and administered to physicians present at the 12th Latin American Congress on Diabetes held in São Paulo, Brazil, September 2004 (Appendix 1).

Statistical analysis comprised the chi-square test with Yates correction for analysis of frequencies among the groups.

The collected data were compared with the recommendations of the American Academy of Ophthalmology, ie, that the first fundus examination (FE) should be performed 5 years after diagnosis of the disorder for patients with type 1 diabetes and at the time of diagnosis for patients with type 2 diabetes.

RESULTS

Out of 500 questionnaires administered, only 168 (33.6%) were completely answered.

The length of time since the physicians present at the Congress had received their degree was divided into 5-year intervals (Table 1), with an average of 17.0 years (± 10.30).

Upon answering the questionnaire, 58 of the 168 physicians (34%) reported correct referral of their patients according to AAO guidelines, without differentiating type 1 from type 2 diabetes, whereas, 110 (65.5%) did this incorrectly. Regarding the type of diabetes, patients with type 1 were correctly referred by 36.9% of the physicians, while those with type 2 were correctly referred by 86.9% ($P < .001$; Table 2).

The length of time since graduation was not significantly correlated with experience with fundus examination during specialty training (range, 30.8% to 65.0% among the 5 groups; average, 52.4%) or the frequency of performing funduscopy in everyday practice (range, 11.54% to 30%). Physicians who had received their degree less than 5 years previously were significantly more likely to correctly refer patients for fundus examination compared with alumni of over 20 years ($P = .003$; Table 3). Regarding whether they had experience with fundus examination during specialty training, 88 physicians (52.4%) stated they had experience, whereas 80 (47.6%) did not. Only 21.4% of those interviewed stated that they perform the test on their patients (question 3, Appendix 1).

Table 1 - Relationship between time since graduation and number of physicians

Time since graduation	Number of physicians	%
Less than 5 years	31	18.45
6 to 10 years	26	15.47
11 to 15 years	20	11.90
16 to 20 years	23	13.69
> 21 years	68	40.47
Total	168	100

Table 2 - Total of physicians that correctly referred patients with diabetes type 1 and type 2.

Correct referral	Type 1	Type 2
Yes	62 (36.90%)	146 (86.90%)
No	106 (63.10%)	22 (13.10%)

Table 3 - Comparison between time since graduation and the correct referral to fundus examination

Graduation period of time	Number of physicians correctly referring	%
Less than 5 years	17	54.84*
6 to 10 years	8	30.70
11 to 15 years	6	30.00
16 to 20 years	12	52.17
More than 20 years	15	22.05*

Concerning correlation of the length of time since graduation with experience with fundus examination during specialty training and with performing fundus examinations in current clinical practice, no significant difference was noted among the groups (Tables 4 and 5).

Similarly, no significant difference was found regarding the relationship between experience with fundus examination during specialty training and the correct referral of patients with type 1 or type 2 diabetes (Table 6) Only 31.8% of the physicians with experience with fundus ex-

Tabel 4 - Comparison between graduation period of time and experience in fundus examination during specialty training

Graduation period of time	Experience in fundus examination	%
	Yes	No
Less than 5 years	13 (41.93%)	18 (58.07%)
6 to 10 years	8 (30.77%)	18 (69.23%)
11 to 15 years	13 (65%)	7 (35%)
16 to 20 years	13 (56.52%)	10 (43.48%)
More than 20 years	41 (60.30%)	27 (39.70%)

Table 5 - Comparison between time since graduation and the physicians that daily performed fundus examinations

Time since graduation	Fundus examination	%
Less than 5 years	Yes = 6	19.35
	No = 25	80.65
6 to 10 years	Yes = 3	11.54
	No = 23	88.46
11 to 15 years	Yes = 6	30
	No = 14	70
16 to 20 years	Yes = 6	26.08
	No = 17	73.92
More than 20 years	Yes = 15	22.05
	No = 53	77.95

Table 6 - Relationship between experience in fundus examination during speciality training and the correct referral of patients with type 1 and 2 diabetes

Experience in fundus examination during specialty training	Correct referral	%
Yes	Yes = 28	31.82
	No = 60	68.18
No	Yes = 30	37.50
	No = 50	62.50

amination during specialty training referred their patients correctly, which was similar to the group without this experience (37.5%).

When questioned about the effect of the results of the fundus examination on the type of treatment they adopted, 84.5% of the physicians atated that they are influenced, whereas 15.5% are not ($P < .001$).

DISCUSSION

Studies have shown that treatment of diabetic retinopathy is effective in prevention of blindness,[14,15] and that early detection and follow-up are important for a good prognosis.

Although only 36.9% of doctors referred patients with type 1 diabetes according to AAO guidelines, the incorrect referral of these patients was due mainly to indication before the need to do so. Practically speaking, this does not harm the patient directly; it is more of a matter of inefficient expenditure of public health funds.

When the length of time since graduation was compared to the correct referral of patients, correct referral was more frequent for those who had received their degree less than 5 years previously (54.8%) compared with those who had graduated 20 or more years previously (22.1%); this is probably due to recent guidelines and more adequate specialty training.

The length of time since graduation did not significantly correlate with experience with fundus examination during specialty training or with the frequency of performing funduscopy in everyday practice. Although funduscopy is an important examination, only 21.4% of the total number of physicians stated performing it with their patients, which is in agreement with the 22% observed by Vilela et al,[16] and supportive of the contention that treatment of diabetics may be impaired due to a gap in the physician's knowledge. However, it should be noted that having or not having experience with funduscopy during specialty training did not seem to affect correct referral rates.

APPENDIX 1 - QUESTIONNAIRE OPHTHALMOLOGIST/ENDOCRINOLOGIST'S DAILY RELATIONSHIP WITH DIABETIC RETINOPATHY – SÃO PAULO

1. WHAT YEAR DID YOU GRADUATE?_____ 1. 1) SEX: ( )M ( )F
2. IN YOUR SPECIALTY TRAINING DID YOU RECEIVE ANY EXPERIENCE IN FUNDUS EXAMINATION?
   ( )YES ( )NO
3. DO YOU PERFORM EYE FUNDUS EXAMINATIONS IN YOUR DIABETIC PATIENTS?
   ( )YES ( )NO

3.1. IF YES, DO YOU HAVE EXPERIENCE CLASSIFYING DIABETIC RETINOPATHY?
   ( )YES ( )NO

4. HOW LONG AFTER THE DIAGNOSIS OF TYPE 1 DIABETES DO YOU REFER YOUR PATIENT TO EVALUATION FOR RETINOPATHY?
   ( )IMMEDIATELY ( ) 2M ( ) 4M ( )6M ( )1y ( )5y
5. HOW LONG AFTER DIAGNOSIS OF TYPE 2 DIABETES DO YOU REFER YOUR PATIENT TO EVALUATION FOR RETINOPATHY?
   ( )IMMEDIATELY ( ) 2M ( ) 4M ( )6M ( )1y ( )5y
6. IS THE MANAGEMENT CHOSEN INFLUENCED BY THE RESULT OF THE FUNDUS EXAMINATION?
   ( )YES ( )NO

It has already been demonstrated that proper metabolic control reduces the risks of development or progression of retinopathy by 76% to 54%. Therefore, it is neither necessary nor suitable to await the result of funduscopy to introduce a stricter dietary regimen. Nevertheless, in our analysis, for most of the physicians interviewed, clinical treatment was influenced by the results of the fundus examination, indicating a lack of adherence to best practices by these health professionals.

CONCLUSION

The study confirms that the knowledge, medical performance, guidelines, awareness of preventive measures, and periodicity of diabetic retinopathy examinations in our country appear to be far from ideal regarding patients with type 1 diabetes and are satisfactory for those with type 2 diabetes.

RESUMO

Preti RC, Saraiva F, Trein Junior JA, Takahashi W Y, Rossi da Silva. M E. Quanta informação os Médicos Gerais e Endócrinologistas tem sobre Retinopatia Diabética? Clinics. 2007;62(3):273-8.

OBJETIVO: O objetivo deste estudo foi avaliar através de questionário o conhecimento dos médicos presentes no 12º Congresso Latino Americano de Diabetes Realizado em São Paulo – Brasil, Setembro de 2004.

MATERIAIS E MÉTODOS: Através de um questionário aplicado a 168 especialistas em endocrinologia presentes no 12º Congresso Latino Americano de Diabetes realizado São Paulo - Brasil em Setembro de 2004, os autores interrogaram sobre a experiência e conduta em relação à Retinopatia Diabética e ao exame oftalmológico.

RESULTADOS: Dos 168 médicos, apenas 36,9% encaminhavam corretamente ao oftalmologista os pacientes com diabetes do tipo 1, enquanto 86,9% o faziam de acordo

com a Academia Americana de Oftalmologia para os diabéticos do tipo 2. Quanto ao correto encaminhamento dos pacientes para exame de fundo de olho: os médicos com tempo de formação inferior a cinco anos foram os que mais realizam esta prática (54,8%), comparados àqueles com 20 ou mais anos (22,1%). Quanto à experiência em fundoscopia durante a especialização, embora 52,40% afirmassem possuir experiência, apenas 21,4% dos entrevistados realizavam fundo de olho em seus pacientes. Para 84,5% dos entrevistados, o exame de fundo de olho influenciava o tratamento clínico sistemico.

CONCLUSÃO: O estudo demonstra que o conhecimento médico das medidas preventivas e de periodicidade do exame da Retinopatia Diabética apresenta-se distante do ideal, para diabéticos tipo 1 e satisfatória para diabéticos tipo 2. Médicos graduados ate 5 anos apresentaram maior porcentagem de correto encaminhamento. A presença de retinopatia diabética no exame de fundo de olho influencia o tratamento clinico sistêmico da maioria dos médicos entrevistados.

UNITERMOS: Conhecimento, Diabetes, Retina, Retinopatia Diabética.

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