ORIGINAL ARTICLE / ÖZGÜN ARAŞTIRMA

Patient's knowledge level and expectations about coronary angiography

Hastaların koroner anjiyografi hakkındaki bilgi düzeyleri ve beklentileri

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ABSTRACT

Objectives: The aim of this study was to investigate patient education level on coronary angiography procedure.

Material and methods: This survey has been conducted in two different areas of Turkey. A questionnaire was prepared for patients admitted to undergo elective coronary angiography (CAG) consisting of 11 questions which 7 and 4 of those were annotated and multiple choice, respectively. After validation of the questionnaire has been performed with 10 volunteers, questionnaire was applied to patients who undergo CAG for the first time. Patients' knowledge about application, benefits, complications of CAG procedure, patients' expectations and way of the information access have been interrogated.

Results: The questionnaire was applied to 150 patients (102 males and 48 females, mean age: 57±9.6 years) who undergo this procedure for the first time. "What kind of benefits you expect from CAG?" was responded as "understanding of my cardiovascular disease and diagnosis" by 36% of responders (n=54) and as "to cure my disease and blood vessel opening" by 32% of responders (n=48). After these patients have been informed by the health staff trained about CAG and they were asked the choice questionnaire. "What do you expect from CAG?" was responded by choosing the answer of "To understand existing of occlusion or narrowing" by 62% of responders (n=93). Rate and number of correct answers were significantly increased in choice questionnaire than annotated questionnaire (p<0.05).

Conclusion: It is necessary to inform patients who undergo CAG taking into consideration of their age and educational level.

Key words: Patient education, physician-patient relationship, patients' knowledge level, coronary angiography, questionnaire.

ÖZET

Amaç: Bu çalışmada, hastaların koroner anjiyografi hakkında bilgi düzeylerinin araştırılması amaçlandı.

Gereç ve yöntem: Bu anket çalışması Türkiye'nin iki ayrı bölgesinde (Rize ve İstanbul) yapıldı. Elektif koroner anjiyografi (KAG) yapılması için başvuran hastaların koroner anjiyografi hakkında bilgi düzeylerini ölçmek için 7 tanesi açıklamalı, 4 adet de seçenekli, 11 soruluk bir anket formu hazırlandı. Soruların ve yanıtların geçerliliği 10 gönüllü hastada test edildikten sonra anket, ilk defa KAG olacak 150 hastaya (102 erkek, 48 kadın, ortalama yaş 57±9.6 yıl) işlem öncesi uygulandı. Hastaların KAG işleminin nasıl yapıldığı, faydaları ve işlemin komplikasyonları hakkında hastaların bilgileri, beklentileri ve bilgiye ulaşma şekilleri sorgulandı.

Bulgular: "Koroner anjiyografiden ne gibi faydalar bekliyorsunuz?" sorusuna %36'sı (n=54) "kalp damar hastalığımın anlaşılması, tanı", %32'si (n=48), "hastalığıma tedavi sağlayacağı, damar açma" şeklinde yanıtladı. Koroner anjiyografi girişim öncesinde bu hastalar eğitilmiş sağlık personeli tarafından koroner anjiyografi hakkında bilgilendirildi ve seçenekli anket soruları soruldu. Seçenekli anket sorularına, "koroner anjiyografi işleminden beklentileriniz nedir?", sorusuna %62'si (n=93), "kalp damarlarında tıkanıklık ya da daralma olduğunun anlaşılması" seçeneğini işaretlemiştir. Seçenekli anket sorularına verilen doğru cevap sayısında ve oranında, açıklamalı anket sorularına verilen yanıta göre anlamlı olarak yüksek saptandı. (p<0.05).

Sonuç: Koroner anjiyografi olacak hastaların, yaş ve eğitim düzeyi göz önünde bulundurularak bilgilendirilmesine ve klasik bilgilendirme dışında yöntemlerin uygulanmasına ihtiyaç vardır.

Anahtar kelimeler: Hasta eğitimi, hekim-hasta ilişkisi, koroner anjiyografi, bilgi düzeyi, anket.

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INTRODUCTION

Currently the cardiovascular diseases, which are one of the main public health problems, have a high priority. Medical branch of cardiology has many diagnostic and therapeutic procedures which are invasive, partly invasive or non-invasive. Nearly all procedures are to be equipped by modern technologic tools and software. As consequence of medical training physician may think that application of these procedures are too simple to be explained or he/she has no time to explain them because of work overload. The patient is entitled to receive health care information about how to benefit. [1] Nevertheless most patients are unaware of medical procedures due to their educational level. However lack of information or incomprehension related with patients' level (education, socioeconomic level) may cause many of impediments. Coronary angiography (CAG) is an invasive technical which is commonly used for diagnosis and treatment of coronary artery diseases. Even if rarely, due to its invasive nature it may cause several complications. Occasionally it may lead undesirable consequences in physician-patient relationship.

Sometimes physicians may not pay attention to inform patient about the procedures due to daily work overload or the others factors. [2] This may lead many of misunderstanding in patients' side. In this study it was aimed to measure patients' knowledge level on the procedure applied.

PATIENTS AND METHODS

Totally, 150 patients (102 males and 48 females, mean age: 57±9.6 years) who undergo this procedure for the first time were enrolled. Patients urgently required CAG were excluded. To measure patients' knowledge level a questionnaire consisting of 11 questions which 7 and 4 of those were annotated and multiple choice, respectively was prepared (see questionnaire). After validation of the questionnaire has been performed with 10 volunteers, some questions were amended and for different answers "others" was added. Patients' knowledge about application, benefits, complications of CAG procedure, patients 'expectations and way of the information access have been interrogated. To be clarifying questions several words were simplified during the interview. This questionnaire was applied to the patients who never undergo CAG and give informed consent.

Statistical Analysis

Descriptive statistics results were presented as mean, standard deviation, median, minimum, maximum and number, percentage for numeric and categorical parameters, respectively. Difference between the groups for categorical parameters was determined by Chi-square test. For rate and comparison of coronary angiographic knowledge level was used Chi-square and Kolmogorov-Smirnov test. Statistical analysis was performed by using SPSS v.15.0. Significance level was assumed as $p<0.05$.

RESULTS

All participants were hospitalized patients for CAG procedure with CAD suspicion. Patients will undergo CAG for the first time. Nearly all patients were from primary educational level, middle age and low-middle socioeconomic class. This survey has been conducted in two different areas in Turkey as Rize and Istanbul. Annotated questionnaire of "Which procedure will be apply to you?" was responded by 74% (n=111) as CAG. Question of "Who did you get the information about the process today?" was responded by 77% (n=115) as "from physician". Question which requires to be described the procedure was responded by 46% (n=69) as "I do not know". "What kind of benefits you expect from CAG?" was responded as "understanding of my cardiovascular disease and diagnosis" by 36% of responders (n=54) and as "to cure my disease and blood vessel opening" by 32% of responders (n=48). "What are the risks of CAG?" was responded as "I do not know" by 74% of responders. Question of "Dou you think that your physician gave sufficient information about CAG?" was responded by 50.7% (n=76) as "Yes" answer. After these patients have been informed by the health staff trained about CAG (informing a patient lasted 15-20 minutes) and they were asked the choice questionnaire. "What kind of procedure coronary angiography is?" was responded by 58% (n=87) with checking the choice as "it is a diagnostic procedure and there is no therapeutic effect". "What are the benefits of coronary angiography?" was responded by 53% (n=79) with checking the choice as "this is a procedure that shows any oclusion or narrowing in ves-

sels supplying my heart" (Table 1). "What are the risks or side effects of coronary angiography? Was responded by 27% (n=40) with checking the correct answer. "What do you expect from CAG?" was responded by 62% (n=93) with checking the choice as "to understand that there is occlusion or narrowing" (Table 2). Rate and number of correct answers were significantly increased higher in choice ques-

tionnaire than annotated questionnaire (p<0.05). There was no difference in answers to annotated questionnaire depending on sex (p=0.775). A group of patients, who unaware of undergoing CAG have less information about purpose, benefit and risk of CAG. Differences between the groups were statistically significant (p=0.003).

Table 1. Findings of questionnaire demonstrating the aim of coronary angiography

	Diagnostic n (%)	Therapeutic n (%)	Unknown or wrong answer n (%)	P
Answer to annotated questionnaire	54(36)	48(32)	48(32)	
Answer to choice questionnaire (after re-informed)	79(53)	30(20)	41(27)	<0.05
Gender				
Male	54(36)	51(33)	45(30)	
Female	54(36)	45(29)	51(34)	0.874

Table 2. Findings of questionnaire demonstrating the risk of coronary angiography

	Full information n (%)	Partial information n (%)	Unknown or wrong answer n (%)	P
Answer to annotated questionnaire	8(5)	31(21)	111(74)	
Answer to choice questionnaire (after re-informed)	40(27)	36(24)	74(49)	<0.05
Gender				
Male	8(5)	36(24)	106(71)	
Female	6(4)	20(13)	124(83)	0.114

DISCUSSION

Currently cardiovascular diseases are the most important cause of mortality and morbidity. Recently diagnostically and therapeutically methods of cardiovascular diseases changed rapidly. In our country, physician number per patient is low and this leads to shorten examination time causing several impediments. These conditions it is not easy to work effectively as health staff. Most patients have no information sufficiently not only about CAG but also other examination methods of cardiovascular diseases. [3] It is obvious that physician is the best information resource. Physician-patient relationship to apply medical plans may be conducted in several models including patient information. [4] However it has not been clarified which model should be used specific patient groups so that one model may not be suitable for all patient groups. There is need to have one or several models of physician-patient relationship which is convenient for our conditions.

This model (e.g. parent model, free model, consultant model) may lead information model. [5] It is known that cardiovascular diseases are common in elderly population and in our country educational level of this population is low. Thus children and relatives are usually informed about examinations or treatment. Recently a study conducted in Turkey demonstrated that informing patient about medicine increased compliance to the medicine. [6] Furthermore it is also reported that informed patients are more successful to continue treatment and reach the treatment goals in long term. [7] Thus it is clear that informing patient will have positive consequences both short and long term.

Informed consent forms prepared by Turkish Cardiology Association may be first step as physician-patient relationship model. [8] In 7th item of Patient Rights Regulations which is issued by Ministry of Health stated that "All health care institutions and organizations should constitute the patient informa-

tion unit which is fully equipped technically and having competent staff to give information exactly and accurately and also should provide signboards, leaflets and signs to facilitate the patient access to the units". [1]

Coronary angiography information including procedure, benefit/risks, indications and contraindications is usually given to patients directly in outpatient services by physicians or health care staff trained about CAG as in our study. It will be effective to be re-informed in a simplified way after informing by the physician. Although the procedure during coronary angiography is more or less similar in every laboratory, it should be modified according to indication and patient's status. [9] Visual training will contribute to informing patient. Poor reading habit in Turkey may have negative effect on written informed consent form usage. Visual devices such as television and video may be helpful. Study comparing CAG informing by video and classic way showed that patient informing by video had more information about CAG. [10] Anxiety and stress before CAG may increase the risk of complications related to the procedure by adrenergic stimulation which may exacerbate the chronic conditions such as hypertension, DM and dysrhythmia. Fully informing patient will decrease the risk of complications related to stress. Currently many patients undergo CAG procedure in many units. Fatal complications risk of CAG is low but it becomes important considering the number of patients underwent CAG. Poorly informed patient will react negatively in case of complication and physician- patient relationship will be damaged. Undesirable conditions in physician- patient relationship may be prevented by informing patient or relatives. This will not only protect the physicians from some legal issues but also it will have positive effect on patient awareness in long term basis.

General attitude of our people in which they regard the unscientific information heard by way of the grapevine. For example, some patients do not agree to have CAG thinking that it is an operation. Furthermore there is possibility of misinformation from media. Emphasizing the rare complications of CAG may lead misunderstanding and result avoidance of CAG. On the other side thinking that CAG is a noninvasive and innocent examination may also lead to use CAG as a screening test. CAG indication will be determined by the physician. But patients

exaggerating their symptoms and imposing the physician may lead unnecessary examination and complications. There is some deficiency to inform patient about CAG in outpatient environment. With the lack of cardiologist in our country, informing patient may be conducted by trained physician assistants, nurses and health officer. Cardiologists, to inform patients of their clinics may determine physician assistants, nurses and health officer (working team). Then, they can education of working team about the coronary angiography features, benefit and side effects. Working team can inform patients about the coronary angiography.

Fully informed patient about cardiovascular diseases and CAG will facilitate the diagnosis and treatment in this field and decrease some complication of CAG related to stress.

In conclusion, it is necessary to inform patients who undergo CAG taking into consideration of their age and educational level with the new methods.

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