

# Comparison Between Videotape and Personalized Patient Education for Anticoagulant Therapy

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*To assess the effectiveness of videotape patient education, 22 patients were randomized to receive either videotape or personalized teaching for oral anticoagulant (warfarin) therapy. Both groups scored significantly higher on a questionnaire designed to assess knowledge gained after instruction, with no significant difference between the two groups. Videotape instruction required substantially less nursing time. A second questionnaire assessed patient satisfaction with respect to both methods, which were rated equally effective and worthwhile.*

*Videotape teaching is an effective and well-accepted alternative form of patient education requiring significantly less personnel time.*

Long-term oral anticoagulation provides effective protection against venous and arterial thromboembolism; unfortunately, anticoagulants have a low therapeutic index, and hemorrhagic complications are common. The incidence of major and minor complications varies from 3% to 48%, with a mean of approximately 18% per year.<sup>1</sup> Patient education is important in decreasing complications and improving compliance. Studies have shown that non-comprehension of medical regimens is responsible for 20% to 70% of measured noncompliance.<sup>2</sup>

Videotape patient education is an innovative method of teaching that not only is effective and well received by patients<sup>3,4</sup> but also can save a significant amount of personnel time and cost.

The present study was designed to examine videotape instruction as a teaching method and to assess specifically its effectiveness and acceptability by patients when compared with individual instruction for patients beginning oral anticoagulation medication.

## METHODS

### Patients

Study subjects were 22 patients referred to a hospital-based anticoagulation clinic who had not received anti-

coagulation therapy in the previous 5 years. Demographic data obtained on participants included age, reason for anticoagulation therapy, previous knowledge of anticoagulation therapy, and level of education. Patients were randomized, based on odd or even medical record numbers, to receive videotape instruction or individual teaching from a nurse specially trained in anticoagulation therapy.

An 18-item true-or-false questionnaire was developed to evaluate patient knowledge of warfarin. The questionnaire, developed by the authors, was pretested prior to the study on a control group of individuals outside the medical field. Questions that did not discriminate between knowledge and lack of knowledge of warfarin were eliminated. The questionnaires were scored by totaling the number of questions answered correctly, with one point for each correct answer. Those questions left unanswered were scored as 0.5 points. A second 12-item questionnaire was developed to assess whether patients felt they had learned from the presentation, how satisfied they were with the teaching method, and what their level of comfort was with the medication after receiving the instructions. Each item in the questionnaire was scored on a scale from 1 to 5 with the highest number rated as the most positive response to the instruction.

The videotape, a 15-minute program produced by the authors, reviewed the reasons for anticoagulation therapy, the complications of warfarin, how to monitor the therapy, and other general points about anticoagulant therapy.

The presentation given to the patients randomized to the nurse lecture group was a standardized presentation with content identical to that in the videotape. The presentation was given by one of two nurses.

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TABLE 1. CHARACTERISTICS OF EACH PATIENT GROUP

	Patient Group	
	Lecture (n=13)	Video (n=9)
Patient characteristics		
Age (years)	58.6	60.0
Education (years)	12.1	10.9
Reason for anticoagulation therapy		
Deep venous thrombosis	3	2
Atrial fibrillation	3	3
Other	7	4

**Procedure**

Prior to the presentation, study participants completed the questionnaire assessing their knowledge of warfarin. Individuals randomized to the videotape presentation were asked to view the 15-minute videotape. Participants randomized to the nurse lecture presentation spent approximately 25 minutes receiving instructions from one of the nurses, and were asked to hold all questions until the end of the presentation. A question-and-answer session followed both the videotape and lecture. Time required for teaching and questions was recorded in the nurse lecture group. Time required in the videotape group was recorded as question time only. Following the question sessions, study participants were again administered the pretest questionnaire and the second 12-item questionnaire to assess the participants' satisfaction with the method of instruction and their level of comfort with the medication.

**Statistical Methods**

Analysis of variance was used to compare the two groups regarding their pretest and posttest knowledge of warfarin and the time spent on the presentation and question period. Analysis of covariance was used to adjust for the effects of differences in preintervention scores on postintervention results and for the effects of time spent on the intervention on postintervention results.

**RESULTS**

The demographic characteristics of each group are shown in Table 1. There was no difference between the two groups in age, level of education, or reason for anticoagulation therapy.

The mean time required for teaching and questions is

TABLE 2. TEACHING AND QUESTION TIME (mean time in minutes) FOR NURSE LECTURE AND VIDEOTAPE EDUCATION PRESENTATION

Period	Lecture (n=13)	Videotape (n=9)
Teaching	26.0 ± 5.7	17.6*
Question	6.3 ± 5.3	7.5 ± 7.2

\*Time of videotape presentation

recorded in Table 2. The mean time for questions was 6.3 minutes in the lecture group and 7.5 minutes in the videotape instruction group. There was no significant difference between the two groups in the time participants spent asking questions.

The content of the questions within each group was also evaluated. Both the videotape group and lecture group participants asked questions that demonstrated a wide range of knowledge of the material, with no difference between the two groups.

Table 3 is a summary of the scores of the participants on the questionnaire assessing their knowledge of warfarin. The adjusted mean in the knowledge scores of the lecture group compared with the videotape group was not significantly different ( $P = .60$ ).

Finally, the satisfaction questionnaire failed to show any significant differences between the two groups: The videotape group scored 23.2 of a possible 25 points on the satisfaction questionnaire, and the lecture group scored 24.8.

**DISCUSSION**

Patient education is an essential part of good medical care. It has been estimated that 25% of a physician's time with patients is spent in education.<sup>2</sup> Education is of particular importance in the administration of a medication, such as warfarin, that has a narrow therapeutic window.

Using nursing or other paramedical personnel to instruct patients is one way to free physician time for other activities. Use of such personnel, however, is still costly. Videotapes have been shown to be an effective alternative means of patient education,<sup>3</sup> but no studies have looked specifically at the effectiveness of videotape teaching as it pertains to patient satisfaction and knowledge gained.

The present study, by almost totally eliminating direct nursing instruction, showed a significant reduction in nursing time for patient education by the use of a specially developed videotape program. By incorporating a question-and-answer period into each instruction format, it was possible to further assess patient comprehension as indicated

by the duration of the question-and-answer period. The personalized lecture was 8.4 minutes longer than the videotape presentation, as one might expect, but there was no significant difference in the duration of the question-and-answer period for each group. The goal of this study, however, was not simply to compare the time required for each presentation format, but rather to examine differences in knowledge gained and in patient satisfaction between the two teaching methods. Despite the increased teaching time provided in the nurse lecture, there was no evidence that the lecture was superior to the videotape in knowledge gained. Furthermore, patients were satisfied with the videotape as a teaching method, and they felt they had adequate knowledge after viewing the videotape instructions, as was demonstrated by their knowledge test scores.

The investigators in this study were not blinded as to which group patients were randomized, but efforts were made to eliminate bias by having the nursing personnel strictly adhere to a prepared outline, to keep presentations to a fixed time, and to hold questions until the end. Furthermore, the pretest and posttest questionnaire provided a relatively objective means of assessing comprehension of the information presented.

Assessment of retention of the material taught in each group would also have been interesting; however, teaching occurs at each patient encounter after the initial visit, and control of the content would have been impossible. Furthermore, the study was done at a tertiary care center, and many of these patients were referred back to their primary physician.

The lack of significant difference in the knowledge of each group could also be attributed to the small numbers in the study. This study, however, was designed, not as a large

**TABLE 3. MEAN SCORES OF KNOWLEDGE QUESTIONNAIRE\***

Test Period	Lecture (n=13)	Video (n=9)
Preintervention	12.8 ± 1.4	12.6 ± 2.6
Postintervention	16.0 ± 1.4	15.6 ± 1.4
Postintervention adjusted mean†	16.0	15.7, P = .6

\*18-item questionnaire  
†Adjusted for preintervention values and time

clinical trial to detect a difference between two means, but as a feasibility study to assess whether teaching by videotape instruction led to an increase in knowledge that would not be substantially different from the knowledge gained by personalized lecture. The investigators also wanted to assess whether videotape teaching was acceptable to patients.

Videotape presentation as a method of teaching about medication is an effective alternative teaching method. Patients learn from this method, it is well accepted, and it results in a significant savings in personnel time.

**References**

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