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## ARTICLE

# Interactional resistance between patients with atrial fibrillation and cardiologists in consultation on treatment with warfarin: the value of shared decision-making

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## Abstract

**Rationale:** Atrial fibrillation (AF) increases the risk of stroke and it can be reduced by treatment with warfarin. Some patients consider that warfarin is a stressful treatment with undesired effects and the perceived barriers include unwillingness to take it. Knowledge of patients resisting warfarin treatment may be useful for the potential threat to maintaining shared decision-making in the consultation as a central tenet of person-centered medicine.

**Aims and objectives:** To identify how patients resist treatment with warfarin and how cardiologists respond to patients' resistance. The co-constructive perspective of this work analyses the consultations by emphasizing the clinical communication strategies of both patients and cardiologists.

**Method:** Eleven videotaped consultations, in 4 different hospitals, were selected for analysis. Treatment interactions regarding warfarin between patients with AF and cardiologists were analysed, according to the methodology of conversation analysis.

**Results:** There were 4 types of resistance from patients for accepting treatment with warfarin. These included "Giving reasons for their resistance", "Suggestion of another treatment option by the patient", "Stating a treatment preference" and "Questioning or challenging the cardiologist's treatment recommendation". The cardiologists' responses to the patients' resistance included "Repeating the treatment recommendation", "Negotiation with the patient", "Providing additional information on the recommended treatment" and "Extending the explanation for the purpose of taking the treatment".

**Conclusions:** By showing resistance, patients are thought to want to participate in their treatment decisions and an awareness of patients' resistance to treatment enables cardiologists to address the patients' experience-based views on their treatment and individual concerns as part of clinical strategies to increase the person-centeredness of medical intervention.

## Keywords

Atrial fibrillation, communication, patient choice, patient participation, person-centered medicine, resistance interaction, shared decision-making, warfarin

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## Introduction

Atrial fibrillation (AF) is a common cardiac dysrhythmia [1] that affects approximately 5% of people aged over 65 years and 10% of people aged over 80 years [2]. It can be classified as paroxysmal (i.e., episodes that last less than 24 hours, but can continue for up to 7 days and terminate spontaneously), persistent (i.e., episodes that last more than 7 days and require either pharmacological or electrical

intervention to terminate) and permanent (i.e., AF that has failed cardioversion or where cardioversion has never been attempted) [3]. Stroke is an adverse consequence and antithrombotic therapy is therefore an important part of pharmacological management [3,4]. Warfarin significantly reduces the risk of stroke, but a negative aspect is the risk of severe bleeding and interactions with other drugs [5,6]. Under-prescription [7], low compliance with guidelines [8,9] and poor patient adherence to treatment [10] have been reported. Advantages and disadvantages, as perceived

by the patient, play an important role in the decision-making process when determining antithrombotic treatment [11]. Negative consequences of taking warfarin include the need for regular blood testing, the need to change food habits and limit alcohol intake and the cost of the drug if it is not covered by insurance [11,12]. Other barriers are tension between primary and hospital care, logistical problems, personal and professional experiences, as well as the doctor-patient relationship [13]. By contributing their own values, patients can influence the decision-making process in relation to treatment with warfarin [14,15].

Several studies [16,17] have shown that communication is a dynamic process in which the participant's combined actions, instead of only one party's action, have an effect on consultations. Resistance is an interactional resource that improves the patient's ability to participate in treatment decisions. When physicians propose a treatment, the types of responses from patients involve acceptance of the preferred proposal or rejection of the dispreferred proposal [18]. Individualized decision-making about treatment has been found to strengthen the patient's possibilities to contribute and also to reduce the level of conflicts during the current decision-making [19]. Interventional studies for enhancing medication in general have found that patients who participate in shared decision-making adhered better to the agreed treatment [20], an observation of fundamental importance to person-centered medicine.

Previous studies focusing on communication in a cardiology settings have primarily employed methods based on the coding of content [21,25] and have not taken into account micro-interactional dynamics, which are the bases for the actual 'meaning making' of the speakers' conversation. An improved understanding of these specific aspects of the interaction process (i.e., how resistance can be expressed, as well as the response to the resistance) can help cardiologists to deliver clear and relevant information in relation to warfarin treatment with preserved respect of patients' autonomy. Patient needs and desires are important issues that have to be considered [6]. In this study, resistance is defined as any dispreferred response to the treatment proposal when acceptance is the preferred response. To the best of our knowledge, there are no published studies that have examined resistance interactions in consultations regarding treatment with warfarin between patients with AF and cardiologists. Therefore, this study aimed to identify the types of resistance when patients resist treatment with warfarin and how cardiologists respond to patients' resistance.

## Methods

### Design, setting and selection criteria

A qualitative inductive design, including conversation analysis (CA), was used to analyse video-recorded consultations between patients with AF and cardiologists. CA focuses on the organization of talk and the

interactional resources speakers employ to produce social actions (i.e., examining when, how and what action takes place) [26]. The hospitals, cardiologists and patients were strategically selected with the intention to achieve variation in the data [27]. The hospitals were selected by the authors based on localization and size (i.e., university and county hospitals located in different parts of Sweden). The cardiologists were then selected based on sex, age and clinical experience of cardiology by the head of the department at each hospital. Patients were selected based on sex, age, education, type of AF, time since diagnosis, type of planned visit (i.e., early re-consultation or routine control), treatment regime and ability to communicate in Swedish by the cardiologist responsible for the consultation. Ethical approval was obtained from the Regional Ethics Committee in Linköping, Sweden (Dnr. M8-09). Cardiologists and patients gave written consent to participate. Confidentiality was assured following the conditions that are relevant when conducting research in the health settings according to the Declaration of Helsinki [28]. A total of 11 consultations between patients with AF and their cardiologists at 4 cardiologic outpatient clinics in Sweden were video-recorded from June to December in 2009. Data regarding patients, cardiologists and consultations are described in Table 1.

### Procedures

Initially, the selected cardiologists at each hospital were informed about the study by letter and asked whether they were willing to participate by the first author (ES). Selected patients were informed about the study by letter and a week before their scheduled appointment asked about participation by phone. None of the patients declined. When the patients arrived at the clinic, the first author (ES) explained the study in more detail, answered questions and obtained written consent to videotape the consultations. One digital video camera was used to capture as much as possible of the interaction between the patients and cardiologists without the researcher in the consultation room. The patient's physical position in the consulting room varied; the patient was sitting behind the desk or in a chair opposite or beside the cardiologist. The cardiologist performed 1 to 4 consultations each.

### Data analysis

Initially, *verbatim* transcripts of all consultations were produced. The first (ES) and the third author (KH) reviewed all videotaped consultations together with the transcripts and isolated the activity sequences of interest (i.e., interactional active resistance and responses regarding warfarin treatment). The basic structure of each activity in a sequence was based on (1) an initiative, (2) a response and (3) monitoring of the response. The minimal sequence was based on an adjacency pair (i.e., two adjacently placed turns, one after the other by different speakers) [29].

Table 1 Characteristics of the participants and consultations

Consultation Number	Patient characteristics								Cardiologist characteristics	Consultation characteristics			Occurrences of resistance
	Sex and age (years)	Disease characteristics	Co-morbidity	Time since diagnosis	Marital status	Education	Warfarin treatment	Sex and clinical experience in cardiology		Types of hospitals	Type of consultation	The total consultation length	
<b>C1</b>	Female, 80-90	Paroxysmal	HT	0.5 yrs	Widow	Nine-year compulsory school	Initiation of warfarin	Male, 19 yrs exp	County	Revisit	22.13 min	2	
<b>C2</b>	Female, 70-80	Paroxysmal	-	5 yrs	Married	University	Initiation of warfarin	Male, 19 yrs exp	University	Revisit	25.45 min	2	
<b>C3</b>	Male, 70-80	Paroxysmal	HT	5 yrs	Widower	Secondary school	On going	Female, 20 yrs exp	University	Revisit	36.00 min	1	
<b>C4</b>	Female, 80-90	Paroxysmal	HT	5 yrs	Widow	Secondary school	On going	Female, 20 yrs exp	County	Revisit	31.31 min	0	
<b>C5</b>	Male, 80-90	Paroxysmal	HT	5 yrs	Married	University	On going	Male, 30 yrs exp	County	Revisit	09.50 min	2	
<b>C6</b>	Female, 60-70	Paroxysmal	HT	5 yrs	Widow	Nine-year compulsory school	Initiation of warfarin	Male, 5 yrs exp	County	Revisit	20.42 min	1	
<b>C7</b>	Female, 70-80	Paroxysmal	HT/IHD	3 yrs	Single	University	On going	Male, 30 yrs exp	County	Revisit	10.39 min	3	
<b>C8</b>	Male, 60-70	Permanent	HT	6 yrs	Married	Secondary school	On going	Female, 5 yrs exp	County	Revisit	38.12 min	2	
<b>C9</b>	Female, 80-90	Persistent	HT	1 yrs	Widow	Nine-year compulsory school	On going	Female, 5 yrs exp	County	Revisit	28.21 min	2	
<b>C10</b>	Female, 70-80	Paroxysmal	-	5 yrs	Widow	University	On going	Female, 5 yrs exp	County	Revisit	29.45 min	1	
<b>C11</b>	Male, 40-50	Persistent	HT DM	2 yrs	Married	University	On going	Female, 5 yrs exp	County	Revisit	33.23 min	4	

Abbreviations: HT=hypertension; DM=diabetes mellitus; IHD=ischemic heart disease; exp=experience

The analysis of interactional resistance was related to preference organization in conversations (i.e., preferred and dispreferred responses) [30]. In the analysis, we distinguished between passive and active resistance. Heritage and Sefi defined passive resistance as having a gap of silence, performing a separate head nod and carrying out gestures, such as “mm mm” [31]. In contrast, active resistance was defined by Stivers [32] as an action where the patient implicitly or explicitly asks questions or challenges the physician’s treatment recommendation, either with proposals or alternative treatments. In the current study, only occurrences of active resistance were analysed according to this definition. Therefore, “resistance” in this article means “active resistance” according to this definition.

When occurrence of resistance was identified, each occurrence was compared with occurrences in other consultations. Each occurrence of resistance, as defined above, was counted as 1 identified frequency of resistance. No resistance was identified in 1 of the 11 consultations. A total of 20 occurrences of resistance were identified in the other (i.e., 0–4 occurrences per consultation, Table 1). All identified occurrences of resistance in the sequences were transcribed in greater detail to examine aspects of talking for those features (i.e., overlapping talk and silences) using a simplified transcription by Jefferson (Table 2) [33]. We analysed the data in terms of sequence organization, turn design and turn taking [34] by asking questions, such as: “Which actions are performed in this sequence?” and “What action(s) are performed in the next turn?” Actions can also include laughing, changes in body position or facial expression, eye gaze, and in some cases, pauses (“non-speech”).

Table 2 The transcription symbols used in this article according to Jefferson (2004)

(0.6)	Pause timed in tenths of a second
(.)	A pause, which is noticeable, but too short to measure
=	No discernible interval between adjacent utterances
:::	Elongated utterances- the longer the elongation, the more colons are added to the utterance
<u>Underlined</u>	Louder stretches of talk are underlined
>right<	Faster stretches of talk
.	A stopping fall in tone, not necessarily at the end of a sentence
,	Continuing intonation, not necessarily between the clause of sentences
[	Overlapping utterances are marked by a parallel square bracket
(huh.)	A laugh
(word)	A single set of parentheses with word (s) indicates doubt of the transcriptionist
((word))	Double parentheses with word (s) indicates characterization by the transcriptionist of some event

## Results

An overview of patients’ resistance to accepting treatment with warfarin and the cardiologists’ responses are shown in Table 3. Extracts describing the interactions between the patient (P) and cardiologist (C) are presented in Tables 4-11.

Table 3 Various accounts of resistance identified in the consultations

Patient’s resistance to treatment	Cardiologist’s response to resistance
Giving reasons for their resistance	Repeating the treatment recommendation
Suggesting other treatment options	Negotiation with the patient
Stating a treatment preference	Providing additional information about the proposed treatment
Questioning or challenging the cardiologist’s treatment recommendation	Extending the explanation about the purpose of taking the medication

### Patient resistance to cardiologist’s recommendations regarding warfarin treatment

#### Giving reasons for their resistance

Table 4 illustrates a sequence in which a patient resists treatment by giving a reason for her resistance not to use warfarin. The resistance was expressed as a fear of suffering cerebral hemorrhage because of the treatment. The cardiologist explained the reasons for taking warfarin treatment, while demonstratively placing the pen on the desk (lines 1-3). The patient responded with an unmarked acknowledgement [Yes] (line 4). The cardiologist continued to describe the clinical management to balance the risk for overanticoagulation and bleeding through blood tests (line 5-6). At that point, the patient asked the cardiologist if there was a need to be worried about the risk of suffering a cerebral hemorrhage and referred to media discussing warfarin treatment (lines 7-9). The cardiologist continued by explaining the conditional advantage of warfarin treatment (lines 10-11, 13-14 and 16). The patient actively resisted the recommendation because there was a lack of uncertainty about what the treatment might mean and withheld acceptance as a way to ensure general understanding through inquiring about the risks.

#### Suggestion of another treatment option by the patient

Table 5 shows how the patient resists by proposing a new medicine she had heard about (line 4) instead of warfarin. The cardiologist pointed out that the medicine is not

available yet (line 5), while also mentioning the possible side effects of the new medicine (lines 12-14 and 16) and that it will take a long time, probably a couple of years, before it is available (lines 18-19). The cardiologist minimized the risk for bleeding from warfarin and acknowledged the concern expressed by the patient earlier in the consultation by confirming that there is a minimal risk for bleeding during warfarin treatment (lines 1 and 3). However, the choice of action allowed the patient to avoid agreement with the cardiologist's opinion and the patient did not show open disagreement.

Table 4 Reasons for patients' resistance.  
Extract derived from consultation number 7

01.	C: so, when using (.) warfarin:: ((lays the pen on the table)) the idea is that there is less risk for
02.	stroke:: that is the thing which does it.
03.	
04.	P: yes
05.	C: and you can keep it there with the help of the tests,
06.	so it is a really <u>good</u> medication
07.	P: don't I need to be afraid about a cerebral
08.	haemorrhage as it has been in
09.	the newspapers that it is <u>so</u> dangerous?
10.	C: [yes, but well, then you forget that there is
11.	the risk of having a stroke if you don't take [warfarin
12.	P: [yes
13.	C: =and it is much higher than having a cerebral
14.	haemorrhage when you take warfarin [ <u>there is</u>
15.	P: [yes
16.	C: = a small risk of bleeding

Table 5 Suggestion of another treatment option  
by the patient. Extract derived from  
consultation number 7

01.	C: there[ <u>is</u>
02.	P: [yes
03.	C: a small risk of bleeding
04.	P: there is a <u>new</u> medicine available
05.	C: yes, but it is not out on the market [yet
06.	P: [no:
07.	C: this new medicine is currently being[ <u>researched</u>
08.	P: [Yes
09.	C: unfortunately, it is unlikely that everyone will switch to
10.	the new medicine
11.	P: no::
12.	C: for those it is as usual that it sounds so extremely
13.	good later when you start to know about it more
14.	and more then it has also
15.	P: ((nods)) side effects=
16.	C: =side effects
17.	P: yes
18.	C: it is likely to be a couple of years before the new
19.	medicine will be available
20.	P: yes

### Stating a treatment preference

Table 6 shows how the patient expressed a treatment preference by enacting a behavior that can be seen as an initial resistance (i.e., the patient started to negotiate a

recommendation that conformed to treatment preferences). The sequence starts with the cardiologist proposing that the patient should contact the medical clinic for initiation of warfarin treatment (lines 1-4). The patient initially affirmed "Hmm hmm" (line 5), but subsequently experienced a change of mind with an initial repeated "But, but" (line 6) rather than immediately accepting the recommendation to participate in checkups in another city far from home. The patient placed hands on the table and then asked the cardiologist if there was a need go to another city for the tests (lines 6-8) and suggested that the blood tests could be performed at the local primary healthcare centre (line 10-11). The cardiologist replied "No, no", thus confirming the patient's preference of treatment location (line 9). The patient then began a clarification (lines 10-11), which was interrupted by the cardiologist informing the patient about the testing (lines 12-14). Once the patient's concern was articulated (lines 6-8), the cardiologist discussed the patient's preferences and what the treatment may involve.

Table 6 Stating of treatment preference.  
Extract derived from consultation number 6

01.	C: it is something that we could think about where I could
02.	write a referral to the care centre (.) or to
03.	the medical clinic in (name of the city) where they can
04.	give you warfarin
05.	P: hmm, hmm (0.2)
06.	but, but (.) then I <u>must</u> go to (name of the hospital) once
07.	a week [then = ((the patient placed her/his hand on the
08.	table))
09.	C: [No, no=
10.	P: =you know that (.) [blood tests can be performed at
11.	the care centre
12.	C: = without that, you take the tests in (name of the city)
13.	but it is (name of the other city) that calls you later 090.
14.	and says what your [ warfarin dose will be
15.	P: [yes, yes

### Questioning or challenging the cardiologist's treatment recommendation

Table 7 shows how the patient challenged the cardiologist by using disparaging words with regard to treatment with warfarin. The patient informed the cardiologist that he is not on the cardioversion list any longer (line 1). The cardiologist confirmed the new situation with an overlapping "Yes exactly" (line 2) and by telling the patient that discussions had already taken place with the person responsible for the list (lines 3-5). The patient then looked at the cardiologist by asking "What happens now? The central question is "Am I sitting here and going to eat fox poison?" The patient then laughed, which may have been a sign of attempting to soften the criticism (lines 6-7). Before the patient mentioned fox poison, the cardiologist was looking at the patient. When the cardiologist responded to the patient, the computer screen was viewed and "fox poison" was repeated and then

changed to “rat’s poison” (line 9). The cardiologist did not have any eye to eye contact with the patient when listing the factors, which formed the basis of the patient’s treatment. The patient’s resistance may have been expressed so strongly that the cardiologist may have experienced an awkward situation and, therefore, interrupted eye contact with the patient. However, the cardiologist confirmed the patient by rephrasing and then clarified by saying “The fox poison you were thinking about is rat’s poison?” (lines 8-9).

Table 7 Questioning or challenging the cardiologist’s treatment recommendation. Extract derived from consultation number 11

01.	P:	I have been removed from the cardioversion [list
02.	C:	[yes, exactly =
03.		=because you know I talked with [first name] that
04.	you::	would be released from the cardioversion list(.) yes
05.		exactly
06.	P:	so what happens now it is the big question that is why
07.		I am sitting here [ why I take fox poison then (huh.)
08.	C:	[exactly
09.	C:	fox poison,[you were thinking about the rat’s poison?
10.	P:	[or rat poison, yes

## Cardiologists’ responses to patient resistance

### Repeating the treatment recommendation

Table 8 shows how the cardiologist explicitly articulated the risk factors and how to prevent occurrence of more serious illnesses, that is, stroke (lines 1-4), by having a new episode of AF (lines 6-8), and described the risk of having an asymptomatic AF (lines 10-13). The risks were described even further by repeating the treatment recommendation again (lines 15-20). When the reasons for treatment with warfarin were repeated, the patient answered “Yes” (line 21). Discussion of the treatment recommendation was continued until the patient had an opportunity to accept them.

### Negotiation with the patient

Table 9 shows how the cardiologist negotiated with the patient. The cardiologist recommended that the patient should continue with the treatment by stating that warfarin treatment is a good protection for stroke (lines 1-5) and that the patient does not need to undergo blood tests as often as before (lines 5-7). Another possibility was discussed - that the patient could take the tests where the patient is located (lines 9-11 and 13-15). The cardiologist aimed to convince the patient to accept warfarin treatment (lines 1-5), but was unsuccessful. When this acceptance was not forthcoming, the cardiologist altered the clinical

recommendation to obtain the required acceptance through negotiation (lines 9-11 and 13-15).

Table 8 Repeating the treatment recommendation. Extract derived from consultation number 8

01.	C:	exactly, warfarin and so (.) then you get to look a little
02.		at which risk factors you have. Why you take
03.		warfarin (.) really you can take it depending on which risk
04.		you have for having blood clots[
05.	P:	[yes:
06.	C:	if you have had a fibrillation one time (.) then it is a lot
07.		that speaks for that you maybe at some time [get it
08.		again
09.	P:	[hm hm
10.	C:	and you don’t always feel the fibrillation episodes
11.		there are studies that are done where you
12.		done where you see that most of the fibrillation episodes
13.		they are asymptomatic as we say you don’t feel them
14.	P:	((nods))
15.	C:	you don’t notice them . just those where fibrillations
16.		that come and go and then you (.) however know an
17.		increase risk for blood clots, to have an atrial fibrillation
18.		at all is an increased risk for blood clots because it
19.		little turbulent in the vessel that doesn’t flow in the same
20.		way that it does when it beats regularly
21.	P:	yes

Table 9 Negotiation with the patient. Extract derived from consultation number 11

01.	C:	so, wafarin is extremely much better at protection (.)
02.		but at the same time it is so that you somehow do not
03.		have you take it just in order to protect yourself against
04.		blood clots and do not think to have a cardioversion or on
05.		the way to do some other form of measure (.) then: it is
06.		then you need then it is enough of course to check
07.		sometime during the month [somehow (.)
08.	P:	[hm
09.	C:	many times you can of course check that you have
10.		left tests at the lab you happen to be at and then it is
11.		possible electronically
12.	P:	[hm
13.	C:	because you shouldn’t need to come just here if it is
14.		not a bad time so to speak or to the care Centre, or
15.		wherever you may be

### Providing additional information about the recommended treatment

Table 10 shows how the cardiologist explicitly articulated how the recommendation will address the patient’s recognized medical diagnosis and prevent the occurrence of more serious illnesses, that is, stroke (lines 7-12 and 14). The patient acknowledged with a “Hmm” (lines 2, 6 and 15) and with an embodied head nod (line 13). The addition with “the CHADS2 scoring table” adds new information not initially provided by the cardiologist: the recommendation was based on the scale of “the CHADS2 scoring table” (lines 1 and 3-5) that brings the recommended treatment to a point which invokes the relevance of the patient’s acceptance.

Table 10 Providing additional information about the recommended treatment. Extract derived from consultation number 11

01. C: there is namely a scale that is called CHADS2 score  
 02. P: hm  
 03. C: and then you check on this how many and then you  
 04. can have a number of points for each of this type of  
 05. letter (.) for the letters stand for different risk factors  
 06. P: hm  
 07. C: and if you then get one or primarily two or more  
 08. points on this then you usually say that warfarin is  
 09. appropriate to go with it like (.) in the future (.) because  
 10. you know of course that warfarin protects maybe  
 11. seventeen percent against stroke while of course  
 12. trombyl that can be the alternative[goes up to=  
 13. P:= ((nods)) [I took that before  
 14. C: and it protects maybe thirty percent  
 15. P: hm

### Extending the explanation for the purpose of taking the treatment

Table 11 shows the cardiologist telling the patient about the diagnosis of AF and high blood pressure (lines 1-3). After this explanation, warfarin treatment was recommended as an alternative to the on-going Trombyl (i.e., acetylsalicylic acid) treatment (lines 5–11) and it was explicitly articulated how the recommended treatment will prevent stroke (line 13). Explaining the recommendation may help make the recommendation acceptable where patients have an opportunity to accept. The cardiologist then emphasized the shared responsibility of the proposed treatment (lines 15-17). The patient answered with a “Yes” (line 18, Table 11).

Table 11 Extending the explanation about the purpose of taking the treatment. Extract 8 derived from consultation number 6

01 C: if you look at the notes from the heart clinic (name of the  
 02 city) then you have the diagnosis  
 03 atrial fibrillation and high blood pressure  
 04 P: yes yes  
 05 C: and when you have it (.) then you can say that it can be  
 06 good to treat instead of  
 07 trombyl so you can also treat with warfarin against blood  
 08 clots so that you don't get clots from  
 09 your atrial fibrillation for >it is actually< that which is the most  
 10 serious (.) eh eh it is of course that which is  
 11 the greatest risk with atrial fibrillation  
 12 P: ((nods))  
 13 C: it is this stroke risk you (.)  
 14 P: yes yes yes yes  
 15 C: so that eventually it would thus benefit you to have  
 16 warfarin(.) if you don't have anything against it then you  
 17 can (.) you can be given that instead of trombyl  
 18 P: yes

## Discussion

The main findings of this study were that patients with AF expressed resistance to warfarin treatment by giving reasons for their resistance, suggesting other treatment options, stating a treatment preference and questioning or challenging the recommendation. The cardiologists responded by repeating the treatment recommendations, negotiating with the patient, providing additional information regarding the recommended treatment or by extending the explanation about the purpose of taking the treatment. Our findings are important for cardiologists meeting with patients in clinical practice.

We found that patients resisted treatment by giving reasons for their resistance (e.g., expressing fear of having a cerebral hemorrhage). Cardiologists may not recognize resistance as an attempt at concealing treatment preferences or patients concerns. It is important for cardiologists to understand that patients may withhold acceptance as a means of further discussing the details of what the implications of the treatment are (i.e., ensure a general understanding by asking about the risks). Exploring the patient's perspective [32,35] also creates an opportunity to further discuss the details of what effects the treatment may have. Focusing on clarity in communication situations is likely to achieve efficient use of time and reduce resistance. On the other hand, patient participation can be reduced by interactional behavior, such as the cardiologist pushing the overall visit forward. Institutional discourses primarily involve an asymmetry and it is often related to a pattern of dominance, for example, knowledge or position of the participants, in which patients are subordinated or subordinate themselves, to the experts [36]. However, cardiologists have a responsibility to understand patients' resistance, including acknowledgement of the patient's perspective [35] to ensure effective communication.

Another way that patients resisted treatment with warfarin in the present study was that patients, instead of openly rejecting the treatment, expressed resistance by suggesting an alternative option to warfarin. These findings are in line with a Finnish primary care study on upper respiratory tract infections [37]. They found that patients resisted diagnoses by asking for additional or alternative information about the diagnosis presented by the physician. The patient's influence in decision-making includes different components of communication through initiation (i.e., requesting or proposing a treatment) and responsive actions (i.e., the patient expresses a certain standpoint toward the physician's proposal) [32]. However, some people do not know all the details regarding treatment and leave treatment decisions to their cardiologist instead [15]. Therefore, the patient has to be “invited to participate” and negotiate a treatment regime that is in parallel with his/her own preferences [38]. Placing emphasis on patient autonomy, the cardiologist might stimulate the patient to formulate his/her thoughts about warfarin treatment to identify the patient's perspective. It has previously been found that patients who are involved in the decision for treatment have greater



satisfaction and cooperation than those who are not [11,39]. Patients' treatment preferences and beliefs are an important factor and cardiologists may ask patients how they wish to be involved in the decision [23]. The patients in the present study expressed resistance by stating an implicit treatment preference. They used an interactional resource to resist a recommendation that may not be acceptable according to their treatment preferences. Rather than pursuing the patient's acceptance, the cardiologist can use the patient's resistance as an opportunity to discuss the patient's treatment preferences. Resistance can be considered as a source of knowledge of the patient's current situation and from what motives he/she acts on [40]. We also found that patients expressed resistance by using disparaging words. Goffman [41] and Bloor [42] showed that patients sometimes disguise their resistance and use other forms of resistance in their interaction with health professionals, rather than creating open conflicts. When patients laugh, that may be a sign that the patient wishes to soften their criticism of warfarin. Resistance expressed as dispreferred accounts tends to break down social solidarity between the participants. Goffman [41] described that "face-to-face" interaction between participants means a lot of work and attention are required so that no one will "lose face". Applied into consultations between cardiologists and patients with AF, it means to show respect, attention and interest, while carefully avoiding issues that can cause embarrassment or offence. One of the cardiologists in our study paid a lot of attention to the patient, responded and confirmed the patient, for example, by re-phrasing the patient's reference to the treatment as "rat's poison" and, in this way, assured an understanding by the patient. By making this effort, the cardiologist acknowledges and "rolls" with the resistance, bringing attention to the patient's ambivalence for advantages and disadvantages of warfarin treatment [40]. Resistance is thereby considered an expression of the patient's anxiety or fear. We also found that the cardiologists employed other techniques to handle resistance. One technique was to extend the recommendation of warfarin in response to the patient's resistance. Cardiologists provided additional information regarding the recommended treatment and extended the explanation about the purpose of the medication to secure and to convince the patients to accept it. Cardiologists wanted the patient to understand what was right, for the patient's own good. Miller *et al.* [40] called this a correction reflex and it is often an expression of care. The strategy of motivational interviewing is based on eliciting behavior change by helping patients to explore and resolve ambivalence [43]. In our case, this strategy could mean that the cardiologist ceases using what is called the correction reflex and instead reflects what the patient is saying; for example, by using an open question. Patient resistance may be a signal that the cardiologist used a bigger pressure to convince the patient and he/she needs to modify his/her motivational strategies. With the use of motivational interviewing, cardiologists could develop a dialogue and initiate thoughts of change, with respect to patients' ideas and treatment preferences.

Additional findings from our analysis are worth noting. There were no cases when a patient did not accept the treatment and the cardiologists in this study did not change their treatment proposal. In the current study, treatment decisions were based on clinical findings and the importance of warfarin therapy for the prevention of stroke has been emphasized in guidelines on the management of AF. The cardiologists' recommendations about warfarin were not affected by patients' resistance. In contrast to our study findings, it has been shown that treatment decisions with warfarin are made by a social interaction between medical practitioners, patients and hospital doctors, rather than being influenced by applying the evidence from guidelines [13]. However, resistance represents direct feedback of dissonance from patients and serves as a signal to alter communication strategies. Patients' resistance can be viewed as a resource of knowledge. By relying on these resources, the patient can give subjective accounts of concerns or after the patient shows resistance, the cardiologist is in the position of information receiver, not *vice versa* [34].

Analyzing talk by treating interaction as a dynamic process and focusing on the participant's displayed orientations enables a detailed examination of the ways in which interactional resistance is raised between patients with AF and cardiologists. Weaknesses of the method used (CA) are that analyses of individual examples have limitations; the analyses ignore what role the context and normative regulations may have on the interaction. Resistance interactions evaluated in the current study are likely to be generalizable, specifically to patients on warfarin. The use of video recording is a strength of the study because of the ability to analyze non-verbal signs, such as body gestures and gaze. On the other hand, participants (i.e., cardiologists and patients) may have behaved and communicated in an "atypical" manner because the consultations were video-recorded, which might have affected the internal validity of the study. The patient's physical position in the consulting room may have affected the communication. A computer was used by the cardiologists in all consultations and required cardiologists to move frequently between the patient and the desk where the computer was, and often required periods of time during the interaction. This could therefore complicate the analysis if passive resistance was also included. The patient's physical position in the consulting room varied and the camera was placed in such a manner to avoid creating physical barriers. Pietroni described that physical closeness and the lack of a physical barrier between participants encourage communication [44]. Furthermore, people tend to resume their natural behaviors within a fairly short time [45]. Despite the fact that 9 out of 11 consultations were made in county hospitals, the size of hospitals ranged from very large to smaller county hospitals.

## Conclusions

When resisting, patients resort to their experience-based views on their treatment. Determining patients' methods of resisting treatment may help to take into account potential concerns about maintaining shared understanding of the treatment decision in the consultation. Through patient resistance, cardiologists might stimulate the patient to formulate their thoughts regarding treatment and engage the patient in a collaborative process in which there is a shared responsibility for treatment goals. By expressing resistance to warfarin, the patients are active participants in treatment decisions. Future research should focus on how the patient participates in treatment decisions when he/she does not show resistance. The current study is therefore advanced as an important contribution to the literature on shared clinical decision-making, a central facet of person-centered medicine.

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