Table I. Per-protocol analysis.
Adherence of Thrombopreventive Medications between Intervention and Usual Care Group.

Variable	Intervention	Usual care	Risk difference (95% CI)	P Value
Primary endpoint	N=90	N=89		
Composite MPR* median (IQR)	0.95 (0.78-1)	0.91 (0.84-0.99)	NA	0.89
Non-Adherent (Composite MPR<0.8) n (%)	23 (26)	16 (18)	8 (-4-20)	0.28
ASA	N=67	N=76		
MPR, median (IQR)	1 (0.76-1)	1 (0.74-1)	NA	0.29
Non-adherent (MPR<0.8) n (%)	18 (27)	20 (26)	1 (-14-15)	1.00
Dipyridamole	N=60	N=69		
MPR, median (IQR)	1 (0.88-0-1)	0.99 (0.84-1)	NA	0.75
Non-adherent (MPR<0.8) n (%)	13 (22)	14 (20)	1 (-13-15)	1.00
Clopidogrel	N=44	N=33		
MPR, median (IQR)	1 (0.91-1)	1 (0.99-1)	NA	0.09
Non-adherent (MPR<0.8) n (%)	5 (11)	1 (3)	8 (-3-19)	0.23
Statins	N=82	N=79		
MPR, median (IQR)	1 (0.84-1)	0.99 (0.87-1)	NA	0.76
Non-adherent (MPR<0.8) n (%)	15 (18)	13 (16)	2 (-10-14)	0.84
Antihypertensive agents	N=65	N=54		
Composite MPR† median (IQR)	0.98 (0.85-1)	0.98 (0.84-1)	NA	0.96
Non-adherent (CompositeMPR<0.8) n (%)	13 (20)	12 (22)	-2 (-17-13)	0.82

IQR: Interquartile range. MPR: Medication possesion ratio

*Based on 3 groups of medications: antiplatelets, anticoagulants and statins

† Based on moxonidine, diuretics, calcium antagonists, renin-angiotensin agents, betablockers

Table II. Experiences and satisfaction with participation in the study

N=92	Better	The same	Worse
Did participating in the study change your:			
Confidence with medication use	35 (38%)	57(62%)	0
Knowledge about your medications	50(54%)	42(46%)	0
Focus on change of life style	53(58%)	39(42%)	0
Quality of life change	29(32%)	57(62%)	0

	Positive	Neutral	Negative
Your view on the clinical pharmacist	78 (85%)	14 (15%)	0 (0%)

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied
Satisfaction with participation in the study	59 (64%)	30 (33%)	3 (3%)

Detailed description of the intervention and pharmacist training

Elements and timeframe

The elements of the extended service to patients in the intervention groups are shown in Figure I. Standard operation procedures were completed for each elements of the intervention.

Pharmacist training

All four pharmacists held a Master's degree in pharmacy, and the average time since graduation was 9 years (range 2 -21). Two clinical pharmacists had 1½ years of hospital practice; the others had 3½ and 15 years, respectively.

Before the study, all clinical pharmacists participated in a 2-day external course in motivational interviewing (MI) and one day of internal training. The key points of MI according to Miller and Rollnick [1] were used including the use of specific skills, e.g. empowerment, ambivalence, the decisional balance schedule, the visual analogue scale, stage of change and reflective listening. Additionally, the pharmacists were trained regarding knowledge of stroke, risk factors, secondary prevention, medication adherence and interventions. During a 1-week pilot study, the clinical pharmacists were trained in patient selection and patient interview. A 1-day follow-up course in MI was provided one month after study initiation. Patient interviews were audiotaped for quality control during the study. The recording was coded and evaluated by the consulting pharmacist and a second pharmacist by using a modified version of The MI Treatment Integrity (MITI) Code system3.0 [2,3].

Focused medication review

The pharmacist reviewed the patient's medication before the patient interview. The review focused on thrombopreventive agents (antiplatelets, anticoagulants, antihypertensives and statins) and potential adherence-related problems. Information sources were the patient's electronic medical record (EMR), laboratory results and the shared medication record (SMR), which hosts information on active medication and prescriptions for all Danish citizens [4]. Drug-related problems (DRPs) were discussed with the physician during ward rounds or written in the medical records along with a notification in the record system to the relevant physician. Action guides for antiplatelets, anticoagulants and statins were designed to ensure a standardized approach to identification of drug-related problems (DRPs) and associated recommendations. The review followed the well-defined classification of DRPs developed by Strand et al [5] and addressed issues such as indication, appropriateness of the drug, dose and safety issues.

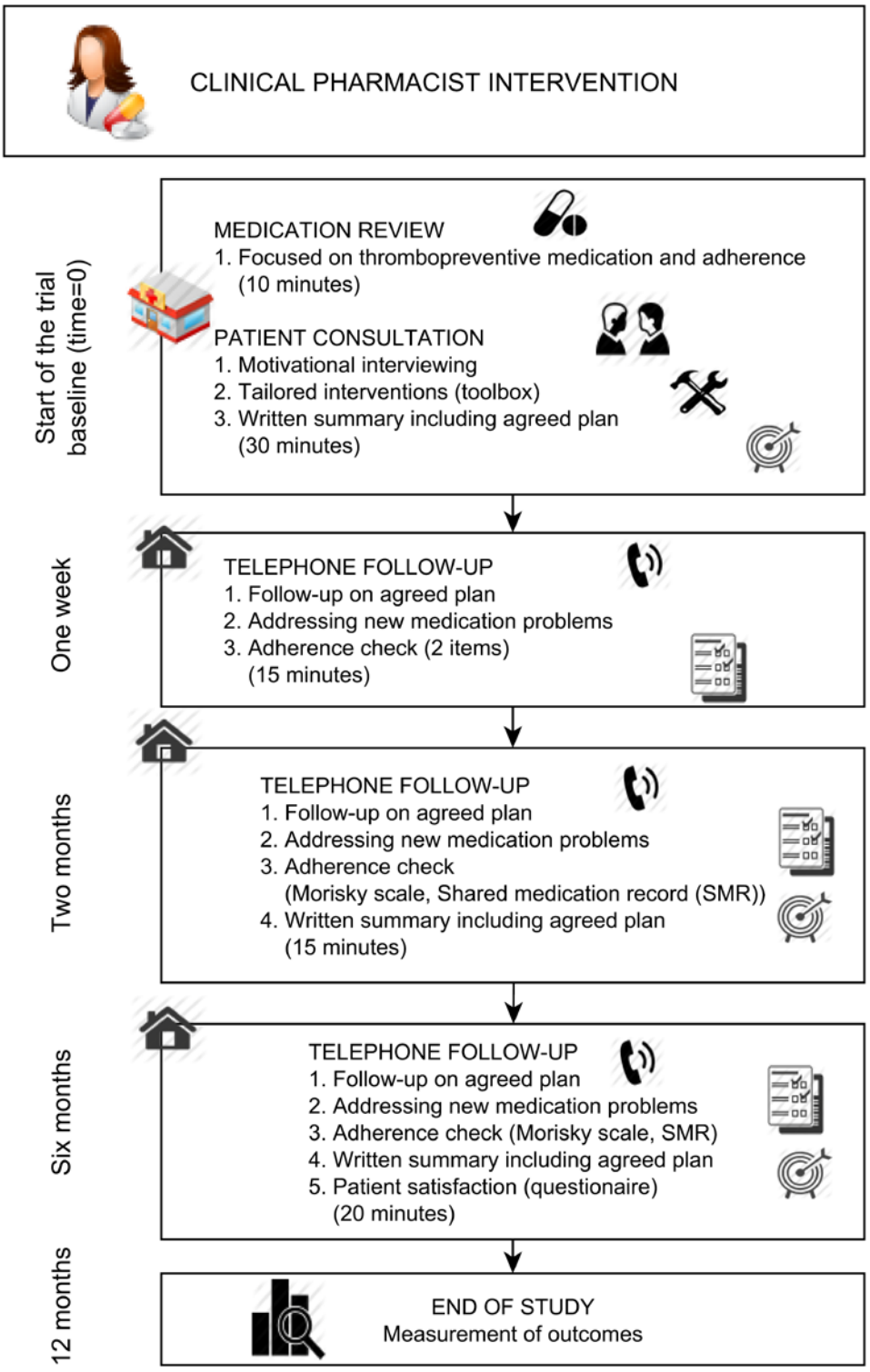

Figure I Elements of the clinical phamacist intervention

Patient interview
A face-to-face interview was undertaken, based on the patient's current thrombopreventive medication. For inpatients, the interview was intended to be performed no later than 3 days before discharge. The expected duration of the interview was set to 20-30 minutes. Relatives were allowed to participate in the interview.

The dialogue used was based on MI developed by Miller and Rollnick [1]. The aim of the interview was to help the patient identity goals in relation to their medication/disease and to facilitate behavior change by exploring ambivalence and by mobilizing the patients' intrinsic values for behavior change. To assist the pharmacist in adhering to a standardized approach, an interview guide and an adherence intervention guideline were developed. The guideline addressed intervention to address non-intentional adherence as well as intentional adherence, e.g. necessity and concerns beliefs about medications [6]. Tools at disposal to assists in the interviewing process included: MI tools (the decisional balance schedule, the visual analogue scale, stage of change sheet), adherence aids for demonstration, VisualRx plots (explaining risk and benefit of treatment with pictures [7]) and educational material about thrombopreventive medications, adherence, stroke, hypertension and lifestyle issues.

The interview was initiated with a few open-ended questions about the patient's medication-taking routine and thoughts about medication use and if necessary, clarifying questions in relation to the medication review. Afterwards, the agenda of the interview was set based on issues raised by the patient. To assist the patient, a sheet encompassing a range of issues to choose among could be presented to the patient. The issues covered medication, disease and lifestyle and were presented as questions such as: Does the medication work? How do I remember to take my medications? Which adverse reactions should I be aware of?.

At the end of the interviews, the patient received a written summary of the interview including the goals formulated by the patient and a joint agreement of possible actions to be taken. A date for the subsequent follow-up telephone call was arranged.

Follow-up telephone calls
The pharmacist interviewed the intervention group patients by telephone at one week, two months and six months after hospitalization. The rationale for choosing one week was to ensure that new medications had been implemented properly, two months because the patients would be expected to have returned to their usual life, and six months because adherence often decreases at that time [8].

The expected duration of the interview was estimated to 15 minutes. Before the interview, the pharmacist checked the EMR for updates, and the SMR was also checked before the two- and six-month calls. A semi-structured interview format was used. The agreed plan from the previous interview was followed up on, and further motivational interviewing was performed if necessary. The patient was asked about practical use of medication, adverse reactions and changes in medication since last interview. At the first follow-up, the patient was screened for non-adherence by using two standardized questions; (1) "have you visited the pharmacy and picked up the new medication prescribed after you were hospitalized?" (2) "did you take your medications yesterday?". At the second and third follow-up, SMR and the Morisky Medication Adherence Scale (MMAS) [9] was used to assess adherence. MMAS comprises four items and assesses both

intentional and unintentional non-adherence. After the second and third interview, the patient was mailed a written summary including joint decisions. At the last follow-up, the patient satisfaction and experiences with the intervention were explored by nine questions including aspect of change in medication behavior (confidence, skills and knowledge), lifestyle and quality of life.

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