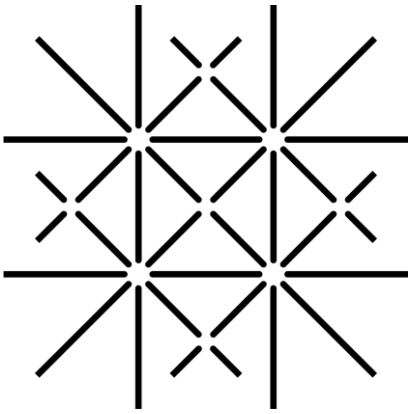
Rivaroxaban-Therapy: Patient Education and Pharmaceutical Care Issues



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Pharmaceutical Care Research Group

Master thesis

12.01.2015 - 05.06.2015

Susanne Habegger, BSc Pharmazie

Supported by:

Dipl. pharm. Corina Metaxas

Dr. phil. II Isabelle Arnet

Prof. Dr. Kurt. E. Hersberger

Abstract

Background

New oral anticoagulants (NOAC) have been developed to overcome vitamin K antagonists (VKA) limitations, with their targeted effect of the coagulation pathway and the stable anticoagulation effect provided with a fixe dose regimen. Due to the short half-life of the NOACs a good adherence is crucial for the safety and efficacy of the anticoagulation effect. Patients' knowledge level can have a positive effect on the medication adherence. Therefore it is important to detect and resolve knowledge gaps in NOAC patients, to enhance the medication adherence.

Objective

The aim of this study was to identify and analyze pharmaceutical care issues (PCI) in oral anticoagulated patients and to develop a self-administered questionnaire as a tool to assess patients' knowledge about the new oral anticoagulants.

Methods

5th year MSc pharmacy students were instructed to perform one polymedication check (PMC) in anticoagulated patients (VKA or NOAC) in community pharmacies. Additionally, a brief baseline interview about the basic knowledge on oral anticoagulants (OAC) and one week later a follow-up assessment of the knowledge during a telephone interview was conducted. Between the baseline interview and the follow-up focused interventions were performed if required. The six knowledge items from the baseline interview and the follow-up were ranked with one point for each known item (full score 6 points). The interventions were classified with the Pharm-DISC tool concerning the problem, type of the problem, cause, performed intervention, involved persons and the result of the intervention. Interactions between the co-medication and the OAC therapy were checked with the program Medi Q whereby interactions with a force of 1 and more were registered. A systematic literature search was performed using the databases Medline and Embase to find questionnaires that assess patients' knowledge about OAC. All found items were sorted according to domains and composed in a mapping. Further steps included the elimination of duplicates and of items too specific for the VKAs. Available items in German were prioritized for the selection. Items only available in English were translated with the forward-backward method. A first pilot testing of the feasibility, acceptability and importance to patients of the items was performed with NOAC patients in the Reha Rheinfelden.

Results

In total 68 patients participated in the study with an average age of 74±12 years. 42.6% (n=29) were females and 54.4% (n=37) males. Whereby 55.9% (n=38) were VKA patients and 44.1% (n=30) were NOAC patients. An average of 2(1/4) PCIs per patient were identified. Most common causes of performed interventions where insufficient knowledge (54.9%) and insufficient compliance (22.6%). 66.5% of all interventions (n=164) were accepted and realized. At baseline, the knowledge level in the NOAC group was slightly lower than in the VKA group (NOAC: median 5(4/6); VKA: median 6(6/6), n.s). At the Follow-up, patients had higher scores in the knowledge assessment compared to baseline knowledge assessment (baseline knowledge: median 5(4/6); Follow-up: median 6(6/6), $p<0.001$). Patients in the VKA group had more interactions compared to patients in the NOAC group (VKA: median 3(2/4); NOAC: median 1(1/2), $p<0.001$). The most common interactions occurred with the HMG CoA reductase inhibitors, NSAIDs, PPIs and antihypertensive (high-ceiling diuretics, beta blocking agents, ACE-inhibitors).

Out of the literature research 9 different questionnaires to assess knowledge on OAC were retrieved. After removal and elimination of duplicate and not relevant items for NOAC therapy the compiled questionnaire consisted of 31 items, which covered following domains: general knowledge about NOACs, side-effects and interactions, risk situations and state of knowledge level. The feasibility and acceptability of the compiled 31-item questionnaire resulted rather negative, considering that 42.6% of requested patients did not complete the questionnaire and in 71.4% of the participated patients a self-dispensation of the questionnaire was not possible. On the other hand all items were estimated as important and some patients would appreciate better information about the NOACs.

Conclusion

Various PCIs could be identified in anticoagulated patients, whereby the majority of PCIs were resolved by a profound consultation by the pharmacist and accepted and realized. Those findings reinforce the important role of the pharmacist in dispensing pharmaceutical care to OAC patients and are in line with other publications. The majority of items in the compiled questionnaire were very important to patients on NOAC therapy. Before using the questionnaire in clinical practice to determine patient's knowledge gaps and assess changes in patient knowledge several items need to be adapted and further validated.