Abstract

Introduction: Atrial fibrillation as one of the diseases that utilize anticoagulants as a treatment. Anticoagulants in atrial fibrillation is used to prevent its progression into stroke or even death. Anticoagulants are divided into parenteral and oral anticoagulants. Parenteral anticoagulant such as unfractionated heparin and low molecular weight heparinas the most famous ones. While oral anticoagulants include vitamin K antagonist and novel oral anticoagulant. Novel oral anticoagulant are further divided into direct thrombin inhibitor and factor Xa inhibitor. Most anticoagulants are associated with high risk of bleeding, low therapeutic index, and frequent monitoring. On the other hand, novel oral anticoagulants (NOACs) have lower risk of bleeding and don't need frequent monitoring thus doctors commonly prescribe rivaroxaban. Drug use evaluation of rivaroxaban as NOAC is needed to avoid drug misuse, possible adverse events, and also to maintain a safe medication. **Method**: Drug use evaluation was done retrospectively by utilizing patients' medical records January-March 2020 taken from Harapan Kita National Heart Centre. Evaluation of data were done quantitatively and qualitatively. Quantitative evaluation is based on therapy, indication, dose, regimen, route of administration, durations of medication, and prescription. While qualitative evaluation will be done by using anatomical therapeutic chemical/defined daily dose (ATC/DDD). **Result:**103 patients were prescribed with rivaroxaban, but only 59 was diagnosed with atrial fibrillation and fulfilled the criteria. Atrial fibrillation was more prevalence in men (76.3%) and elderly with age of 60-79 (61%). Atrial fibrillation patients were also accompanied with comorbidities such as congestive heart failure, coronary artery disease, diabetes mellitus, hypertension, and others. With accompanied comorbidities patients, polypharmacy was very common where it reached up to 98.3%. Because of polypharmacy, risk of drug interaction was also high (96.7%) with duplication of 20.3% and contraindication 22%. ATC of rivaroxaban is B01AF01 with a WHO DDD of 20 mg. In this study DDD was calculated to be 25.06 DDD/patients/3 months. Dose appropriateness is very low (35.6%) because of the insufficient dose that is prescribed based

on the ESC guidelines. **Conclusion:** Overall dose appropriates of rivaroxaban at Rumah Sakit Jantung Harapan Kita is not appropriate yet. According to the ESC guidelines, dosage that is given by physicians is not appropriate or under dosage. Because comorbidities are very common thus drug interaction is high. Consistent drug use evaluation should be done and also evaluations on other hospital at other regions or countries so DDD can be compared. Dosing and adverse event should also be further studied.

Keywords: rivaroxaban, atrial fibrillation, drug use evaluation, drug appropriateness, ATC/DDD