INTRODUCTION AND AIMS: It is still debated whether hemodialysis patients (HD) could benefit from oral anticoagulant therapy (OAT) with vitamin K antagonists (VKA). The aim of this retrospective study was to assess the risk/benefit ratio of using VKA in a population of hemodialysis patients.

METHODS: We retrospectively enrolled all hemodialysis and chronic kidney disease stage III to V (CKD) patients followed in our Center, from January 1st, 2010 to June 15th, 2016, on OAT and a group of age- and sex-matched control patients not on OAT.

We divided our cohort into 4 groups: HD + OAT, HD no OAT, CKD + OAT, CKD no OAT. Patients were followed for at least three months. We determined the occurrence of hemorrhagic and ischemic episodes (defined as requiring transfusions or hospitalization) and the mortality incidence. INR was dosed at least every two weeks for hemodialysis patients and according to specialist prescription for outpatients.

RESULTS: We enrolled 43, 31, 35 and 31 patients in the HD + OAT, HD no OAT, CKD + OAT and CKD no OAT group respectively. In the HD + OAT group 65% of the patients were on OAT because of non valvular atrial fibrillation, 21% because of previous thromboembolism episodes, 12% because of the presence of mechanical valves and 2% for other reasons while in the CKD + OAT group all patients were on OAT because of AF. The time in therapeutic range (TTR) on the INR for hemodialyzed patients was 38.5 ± 13.8%, with an INR > 1.5 in 17.1 ± 13.5% of the times and an INR > 5 in 3 ± 6.6% of the recorded values. 39.5% of HD + OAT patients presented a hemorrhagic event versus 5% of patients in HD no OAT (p < 0.05), 2% in the CKD + OAT group (p < 0.001) and 3% in the CKD no OAT group (p < 0.001). Incidence of ischemic episodes was 23.3% in HD + OAT vs 9.7% in HD no OAT (p = NS), 8.6% in CKD + OAT (p = NS) and 0% in CKD no OAT (p = 0.01). The CHA2DS2-VASc and HAS-BLED scores positively correlated with ischemic (p = 0.004) and hemorrhagic (p = 0.002) events respectively in both HD + OAT and HD no OAT group whereas we couldn’t find any correlation for the HAS-BLED score in the CKD groups and the CHA2DS2-VASc positively correlated with ischemic events in the CKD groups (p < 0.01). Mortality incidence among the different groups was 47% in the HD + OAT group, 3% in the HD no OAT group, 23% in the CKD + OAT group and 0% in the CKD no OAT group. Patients on OAT had a higher mortality both in HD and CKD (p < 0.0001 and p < 0.01 respectively), and mortality was higher in HD compared to CKD (p < 0.05 for patients on OAT and p < 0.0001 for patients not on OAT).

CONCLUSIONS: Our study shows that keeping the therapeutic range of INR in hemodialysis patients is possible although difficult. Since OAT confers a higher risk of mortality to hemodialysis patients, it should be carefully prescribed in this population weighing the risks and benefits. In this regard, the CHA2DS2-VASc and HAS-BLED scores proved to be useful in assessing the bleeding and ischemic risk.