

# NOVEL ORAL ANTICOAGULANTS VS VITAMIN K ANTAGONISTS: A COST ANALYSIS

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## Objectives

In elderly patients, anticoagulants are the most commonly implicated medication in emergency department (ED) visits due to an adverse drug event (ADE): 17.6% of all ADE requiring ED are linked to oral anticoagulant; 50% of them require hospital admission.

The aim of the study was to assess whether the main reason of hospitalisation is related to ADE of NOACs; evaluate the potential exposure to drug-drug interactions/assess whether contraindicated drugs have been prescribed in association with NOACs; evaluate the economic impact associated with NOACs therapy.

## Methods

Data from 2016-2017 were retrieved from administrative and health databases: File C2 registry which groups all patients admitted to the ED filtered using identified ICD-9-CM codes (International Classification of Diseases) related to ADE possibly induced by anticoagulants; File F registry, from local health units (LHU) to identify anticoagulant therapy; hospital discharge form (SDO) which stores clinical information about patient.

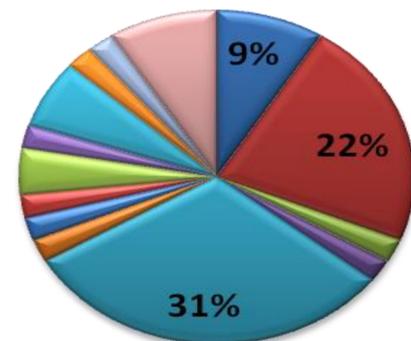
File C2, File F and SDO were matched to estimate costs incurred by the healthcare system; DRG codes (Diagnosis Related Group) were analyzed to evaluate the cost/patient.

## Results

Data of 1.867 patients were extrapolated from File C2, matched with File F, through ICD9-CM related to ADE from anticoagulants; 43 patients were selected (median age=80 ( $\sigma$ =12), male:76%). The most frequent diagnosis were: subdural hemorrhage (31%), iron deficiency anemia and chronic blood loss (22%), subarachnoid hemorrhage (9%) due to Warfarin (75.5%), Dabigatran (8.9%), Rivaroxaban (8.9%).



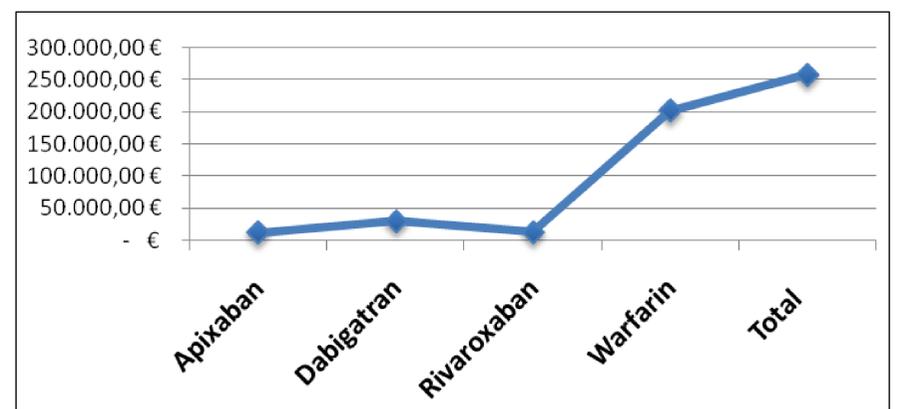
## ICD9-CM in patients treated with NOACs/Warfarin



- 4321: SUBDURAL HEMORRHAGE
- 2008: IRON DEFICIENCY ANEMIA AND CHRONIC BLOOD LOSS
- 430: SUBARACHNOID HEMORRHAGE

Crossing File C2 and SDO, 62% of patients in treatment with anticoagulants underwent hospitalization, (average duration of 10 days); 22/43 patients showed potential drug-drug interactions mainly due to Warfarin. The average cost per hospitalization is significantly greater for patients treated with Warfarin versus NOACs (€ 900 more).

## Cost/DRG related to single molecule



The lower economic impact of cases treated with NOACs versus Warfarin per DRG (56.154€ vs €201.743) as for admission to ED (€ 1,894.4 vs. € 6,952.95) were linked to minor incidence of serious ADEs.

## Conclusions

Making a simulation, the potential saving would be proportional to the number of hospitalizations avoided, (€29.106.939). Despite the difference in cost of the therapies shifting from AVKs to NOACs, there could be a direct economic saving related to the lower incidence of hospitalization and indirect, from reduction of ADE.