OPTIMIZING THE PRESCRIPTION OF VITAMIN K ANTAGONISTS

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Introduction
According to the Joint Commission, the vitamin K antagonists (VKA) are among the top 5 drugs associated with patient safety incidents [1]. They are implicated in 4% of the medication error reports collected by our pharmacy department [2]. Major hemorrhage is one of their complications which can be fatal.

Approach
The degree of filling and the drawbacks of the VKA prescription document used in the EHC internal medicine ward were analyzed to establish a new one combined with a checklist. This latter outlines:
- the evaluation of patient’s risks pertaining to VKA, and
- the management of VKA treatment.

The use of the new document in the same unit was evaluated.

Results
Patient population (during 8 months between 2010 and 2011):
- 15% of patients received VKA (231/1510)
- 8 out of 10 patients were older than 65, 7 out of 10 older than 75

Which VKA is the most prescribed?:
acenocoumarol (n=227) > phenprocoumone (n=3) > warfarin (n=1)

Old VKA prescription document’s weaknesses (Fig.1):
- a partial reporting of INR values (20% of unreported values, i.e. 45 out of 219 measured INR, Fig. 1b: circles)
- a graph of INR in function of time rarely filled (15%, i.e. 9 out of 59 collected prescription documents)

New VKA prescription document’s characteristics (Fig.2)
- The prescription table improves treatment overview. Other information is added: targeted therapeutic range, other drugs acting on coagulation, a reminder of VKA monitoring and the procedure in case of supratherapeutic effect.
- The associated checklist consists in 5 points: indication, contraindications to VKA, patient risks including a drug interactions table, the way to prescribe VKA with an algorithm [3] and the concomitant use of intramuscular drugs.
- Despite physicians education, the checklist was filled in only 37% of the cases (49/133). An evaluation of laboratory data is underway to define the potential impact of the checklist on INR values.

Discussion
Increasing the safety of VKA use is challenging. The studied patient population is at risk, as age is a predisposing factor for bleeding complications. Strong knowledge of VKA kinetics and interactions are essential to insure their good use. A checklist as described here can be a complementary measure to help young physicians to better characterize patient risks. Nevertheless, effort has to be made to increase its use. Its impact on INR and the duration in the therapeutic range still has to be determined.