UTILITY OF VITAMIN K IN PATIENTS NOT TAKING WARFARIN WITH ELEVATED INR

Ernest Nyannor, Pharm.D. M.S. Pharmacy Resident, PGY1
South County Hospital Healthcare System
Objectives

- A brief overview of synthetic activity
- Discuss the role of vitamin K in coagulation
- Analyze the significance of vitamin K therapy in liver disease
- Review 2 cases on vitamin K use in cirrhotic patients
Introduction

- Almost all coagulation factors and inhibitors are synthesized by the liver\(^1\)
- Significant liver dysfunction correlates with impairment of synthetic function of the liver\(^2\)
- Prothrombin time (PT) indirectly measures the vitamin K deficiency
- Non-vitamin K dependent (VKD) clotting factors can prolong PT
Introduction

- Vitamin K activates PT, Factor VII, XI, X, protein C and S
- Activation is through $\gamma$-carboxyglumatic acid of glutamic acid residues of VKD
- Gut sterilization, warfarin use, and biliary tract disease respond to vitamin K administration
Coagulopathy in liver disease

- Case 1: KC was 61 y/o M with alcoholic cirrhosis
- Multiple admissions to ICU NPO on CIWA protocol
- INR: Day 1: 1.9, Day 2: 2.2, Day 3: 2.2, Day 3: 2.5
  Day 4: 2.8 (1st dose of Vit. K 10mg PO x 3d)
  Day 5: 2.2, Day 6: AMA
Patient returned 14 d later with INR 2.5
Patient case #2

- ML 58 y/o M with alcoholic cirrhosis
- Multiple ICU admissions
- INR Day 1: 2.0, Day 2: 2.1 (Vit K 10mg PO x3d)
  Day 3: 1.9, Day 4: 2.0
Complicated balancing act

- Deep vein thrombosis prophylaxis?
- High levels of von Willebrand factors (vWF)\(^4\)
- Reduced level of ADMATS 13 (vWF cleaving protein)
- Need to consider DVT prophylaxis for patients with risk factors
References


