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A case report on drug induced coagulopathy

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Abstract
Acenocoumarol is an Vitamin K Antagonist used for Deep vein thrombosis, Heart valve replacement, Atrial fibrillation and increase the risk of bleeding. we report a Case of 47 year old patient presented with symptoms of redness in right eye and had a history of aortic valve replacement and taking Acitrom drug. On the basis of elevated PT/INR the patient was diagnosed as drug induced coagulopathy. The causality assessment was done according to WHO – UMC Scale and identified ADR was certain. A treatment regimen include withheld the drug and Vitamin K was administered. After the revision of PT / INR acenocoumarol was re-administered with low dose. The Patient need routine monitoring of PT / INR to counteract the risk of adverse effects.

Keywords: Acenocoumarol, causality assessment, PT, INR, vitamin K

Introduction
Acenocoumarol is coumarin derivative with racemic mixture of R (+) and (S-) enantiomer and used to treat Deep vein Thrombosis (DVT), Pulmonary Thromboembolism (PTE), Atrial Fibrillation (AF) and Heart Valve replacement [1]. Acenocoumarol inhibit Vitamin K Epoxide reductase (VKOR) preventing carboxylation of glutamic acid residues of Vitamin K dependent clotting factors II, VII, IX and X [2]. PT and INR are used to monitor the response of acenocoumarol and INR range for patient with anticoagulant therapy is between 2.0 to 3.0 and above 4.0 indicates the high risk of bleeding [3]. The primary Management for coagulopathy was withholding oral anticoagulant and retain the INR to normal range and Secondary Management includes withholding acenocoumarol, administering Vitamin K and Fresh frozen plasma [4].

Case Report
A 47 year old Male patient was admitted with complaints of Redness over right eye for one week. His past medical history includes RHD/ Moderate mitral stenosis 1 year back, Aortic valve replacement done on 9 month back and his past medication history was Acitrom 6mg. He was an mixed diet. On general examination the patient was conscious, oriented. On physical examination includes Pulse was 76 beats per minute, Blood pressure was 120/80 mm Hg and Systemic examination was CVS – S1S2, RS – BAE (Bilateral Air Entry), CNS-NFND (Non focal Neurological Deficit). Patient laboratory parameters shown in table 1.The PT (Prothrombin Time)/ INR (International Normalized Unit) are shown in table 2.Based on symptoms and laboratory investigation he was diagnosed with Drug induced coagulopathy. The treatment was given as follow shown in Table 3. Acitrom was withheld for 3 days and restarted on 4th day with 2 mg following days and supportive therapy with gentamicin eye drops He showed significant improvement of symptoms and discharged after period of 3 days and was on regular follow-up.

Table 1: Laboratory Investigation

Test	Value	Normal Range
Hb	10.3	12-14 g/dl
Total count	6500	4500- 11000 cells/cubic mm
RBC	5.3	4.3-5.9 million /mm
PCV	33.2	35.5 – 44.9%
Platelet	2.6	1.5 – 4.5 lakhs/cubic mm
Total Bilirubin	1.0	0.6-1.0 mg/dl
SGOT	41	5-40 IU/L
SGPT	33	7-56 IU/L
ALP	106	44-147 IU/L
Total Protein	6.4	6.0- 8.3 g/dl
Urea	27	8-20 mg/dl
Creatinine	0.7	0.6 – 1.0 mg/dl
sodium	138	135-145mEq/L
Potassium	3.3	3.5-4.5 mEq/L
chloride	105	96-105 mEq/L

Table 2: PT and INR chart

Test	Day 1	Day 3
PT	69.2	22.0
INR	6.91	1.81

Table 3: Treatment Chart

Generic Name	Dose	Frequency	Day 1	Day 2	Day 3
Inj Vitamin K	10 mg	OD	✓	✓	✓
T Penicillin	250 mg	BD	✓	✓	✓
T Furosemide	40 mg	OD	✓	✓	✓
T Enalapril	2.5 mg	OD	✓	✓	✓
T Ranitidine	150 mg	BD	✓	✓	✓

Causality assessment

To evaluate the relationship between the drug and reaction, Causality assessment was done using World Health Organization- Uppsala Monitoring Center Scale. The ADR was classified as "Certain "includes event of laboratory test abnormality, with plausible time relationship to drug intake, it cannot be explained by other disease or certain drugs and there is response to withdrawal plausible pharmacologically. Acenocomarol is withhold and re- administered after INR and PT is lowered.

Discussion

Acenocoumarol is a oral anticoagulant. Coagulopathy is a condition which impairs the clot formation and a known complication for vitamin K antagonist [5]. PT/ INR are measured to check the response of acenocoumarol. The patient had a history of taking acitrom drug for Aortic valve replacement. Based on the symptoms and lab investigation the PT /INR are elevated and the drug that induced coagulopathy are Tab acitrom. He was treated by withholding the acenocoumarol followed by administering injection Vitamin K which inhibits the Vitamin K Epoxide reductase, then the patient PT/INR are normal and readminister the acenocoumarol by adjusting the dose. The Causality assessment was done and the identified ADR was assessed and found to be "Certain" by Using WHO UMC Scale.

Conclusion

In this case report, Drug Acitrom cause coagulopathy. Clinical presentation, examination and observation of laboratory helps to diagnosis and treat the patient. To prevent the ADR the patient need periodic monitoring of PT / INR. The patient was advised to do regular follow up.

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