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Streptokinase Induce Hematuria: A Rare Compilcation Of Thrombolytic Therapy

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ABSTRACT:Streptokinase is indicated for treatment of coronary artery disease. In some cases it may cause cutaneous adverse reactions. In this case hematuria was developed due to streptokinase. A 72 year old female patient had complains of breathlessness, vomiting, altered sensorium since 2 days, decrease in urine output since one day. She had known case of status post mitral valve repair in 2016 for that she was taking T. Acitron (2mg) 0-0-1,T.verapramil (20mg) 1-0-0, T.digitoxin (0.25mg) 1-0-0,T. Ecosprin (75mg) 0-1-0. One day ago patient was admitted to local hospital where she was diagnosed with acute decompensated heart failure with stuck mitral valve and patient had ventricular tachycardia eposide for that direct current shock was given and streptokinase was given due to clot on mitral valve. Patient was referred to teretery hospital within 24 hrs. Patient had hematuria due to a streptokinase and the drug was stopped and patients condition was improved. Hematuria was occurred due to streptokinase and showed some improvement

KEYWORDS: Streptokinase, Hematuria, Status post mitral valve repair, Acute decompensated heart failure.

I. INTRODUCTION

[1]Streptokinase is thrombolytic medication and enzyme. As a medication it is used to break down clots in same cases of myocardial infection (heart attack), pulmonary embolism and artial thromboembolism. It is also given by IV as soon as possible in STEMI. [5]As streptokinase is bacterial product, the body has ability to build up an immunity to it. It belong to a group of medication known as fibrinolytics and complexes of streptokinase with human plasminogen by activating through bond cleavage to produce plasmin. There are three domins to streptokinase denoted α , β, γ. Each domins binds plasminogen. Although none can activate plasminogen in depend Plasmin is produced in the blood to break down fibrin, the major constituent of blood thrombi there by dissolving clots once they have fulfilled their purpose of stopping bleeding. Extra production of plasmin caused by streptokinase breakdown unwanted blood clots of thrombolytics agents may cause side effect or AE.[3] Major bleeding in brain, kidney damage in patient with kidney disease, High blood pressure, Internal bleeding , Bleeding at side of thrombolysis, damage to the blood vessel increase risk of infection , Allergic reaction. Hematuria (blood in urine) seeing blood in urine can alarming. [4]When a blood is seen under microscope known as microscopic hematuria, Hematuria developed in people with urinary stones , enlarged prostate , certain medication such as blood thinners like aspirin, other pain relivers and antibiotics Bacterial or viral infection such as streptococus or hepatitis also in patient with family history of kidney disease , strenuous exercise such as long distance running. [2]We can treat or prevent hematuria by taking more hydrated drink about eight glass of fluid daily(more drink in hot weather). Treatment of hematuria depends on the causes of it. If patient is having hematuria with specific drug then stop the drug and symptoms will be relived.

II. CASE DESCRIPTION

A 72-year-old female patient came to the tertiary hospital with the complaints of breathlessness, vomiting , altered sensorium since 2 days, and decreased urine output since 1 day. The patient had a past medical history of stuck post mitral valve repair in 2016 and was maintained on the following medications: T. Acitron (2 mg) once daily at night, T. Verapramil (20 mg) once daily in the morning, Digitoxin (0.25 mg) once daily in the morning, and T. Ecosprin (75 mg) once daily in the afternoon. The patient had no history of alcohol or smoking, but she had been addicted to tobacco for

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5 years. The biological and hematological profile was altered. The vitals were normal. Her USG abdomen & pelvis report showed hepatomegaly, a thickened gallbladder wall with edema, and pleural effusion. These conditions were then managed by medications. The patient was admitted to the local hospital one day before, where she was diagnosed with acute decompensated heart failure (ADHF) with a stuck mitral valve, and a 2D echo was done. The patient had a ventricular tachycardia episode; for that, direct current shock was given. After that, the patient was referred to another hospital. The patient has been given streptokinase due to a clot on the mitral valve. The next day, the patient developed hematuria. After stopping the streptokinase patient's condition improved. Thus it was confirmed that the patient had hematuria due to streptokinase.

Table I: Laboratory investigation during hospital stay

parameter	9/2	10/2	11/2	12/2	13/22	14/2	15/2
Hb	12.10	11	11.6	11	11.1	11.6	12.8
TC	27090	19000	17500	16500	14000	11500	19500
INR	6.3	2.57	2.66	1.5	1.40	1.68	-
Platelets	2.30	0.8	0.60	0.9	0.8	1.0	1.2
PT	67	36	37.3	-	19.7	23.6	-
PTT	52.5	39.4	32.6	34.6	-	-	-
Urea	90	140	139	137	137	-	131
Creatinine	2.23	2.8	3.8	4.2	3.9	3.8	3.3
SGOT	-	4468	-	665	-	224	103
SGPT	-	2933	-	1670	-	806	574

MEDICATION CHART

Generic name	Dose	frequency	ROA	9/2	10/2	11/2	12/2	13/2	14/2	15/2	16/2	17/2	18/2	19/2
Piperacillin + Tazobactam	2.25	8 hourly	IV	+	+	+	+	+	+	+	+	+	-	-
Pantoprazole	40	12 hourly	IV	+	+	+	+	+	+	+	+	+	-	-
Furosemide	20	1-0-0	IV	-	+	+	+	+	+	+	+	+	-	-
Fondaparinux	2.5	24 hourly	IV	-	-	-	-	-	+	+	+	+	-	-
Ondensetron	4	SOS	IV	+	+	+	+	+	-	-	-	-	-	-
Diltiazem hcl	30	1-1-1	PO	+	+	+	+	+	+	+	+	+	+	+
Torsemide + Spironolactone	10/25	0-1-0	PO	-	-	-	-	-	-	+	+	+	+	+
Digoxin	0.25	1-0-0	PO	+	+	+	+	+	+	+	+	+	+	+
Acetylcysteine	600	1-1-1	PO	+	+	+	+	+	+	+	+	+	+	+
Lactulose	15ml	½ glass water	PO	+	+	+	+	+	+	+	+	+	+	+
Febuxostat	40	1-0-0	PO	-	-	-	-	-	-	+	+	+	+	+
Aspirin + atorvastatin	75/10	0-0-1	PO	+	+	+	+	+	+	+	+	+	+	+
Pantoprazole	40	1-0-1	PO	-	-	-	-	-	-	-	-	-	+	+
Calcium	500	1-0-0	PO	-	-	-	-	-	+	+	+	+	+	+

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Mometasone furoate cream	-	0-0-1	-	-	-	-	-	-	-	-	+	+	+	+
Tacrolimus ointment	0.1%	0-0-1	-	-	-	-	-	-	-	-	+	+	+	+

Finally the patient was discharged from the hospital after stay of 10 days. Patient was received following type of treatment.

NO.	BRAND NAME	DOSE	FREQUENCY
1.	T. Cefuroxine	500	1-0-1
2.	T. Torsemide & spironolactone	10/25	1-0-0
3.	T. Diltiazem HCL	30	1-1-1
4.	T. Digoxin	0.25	1-0-0
5.	T. Nicoumalone	2	0-0-1
6.	T. Aspirin and atorvastatin	75/10	0-0-1
7.	T. Febuxostat	40	1-0-0
8.	T. Calcium	500	0-1-0
9.	T. Pantoprazole and domperidone	40/10	1-0-0
10.	Syp. cremaffin plus	15 ml	-

III. DISCUSSION

In recent years ADRs have been identified as the major public health concern, and they are considered to be one of the leading causes of morbidity and mortality among hospitalized patients. Proper patient counseling and effective monitoring of ADRs are required as there is use of fibrinolytic streptokinase medication. Streptokinase is fibrinolytic and used in the patient with deep vein thrombosis, heart attack (MI), arterial thrombosis, or heart embolism. In patients with any coronary artery disease or heart disease, streptokinase is used for the breakdown of clots. Kidney disease, bleeding, high blood pressure, internal bleeding, hematuria, proteinuria, allergic reaction, and increased risk of infection are the ADRs involved with the treatment. Streptokinase is preferred for the patient due to a clot on the mitral valve. After stopping streptokinase, the symptoms improved after 72 hours. And the patient also found that he has shown clear adverse effects during therapy, and proper monitoring of the drugs and their side effects is necessary for ADR management, so it is necessary to monitor the patient who is prescribed streptokinase, and routine laboratory checkups are mandatory.

IV. IMPLICATIONS FOR CLINICAL PRACTICE

Although it is uncommon, hematuria should be regarded as a possible side effect of streptokinase treatment. Clinicians should follow:

1. Throughout and following thrombolysis, monitor urinalysis and renal function.
2. Maintain a high index of suspicion for glomerular or vascular injury in the presence of hematuria.
3. In severe or ongoing cases, determine whether renal imaging or a consultation with a nephrologist is necessary.

V. CONCLUSION

This case shows a rare but noteworthy adverse effect of streptokinase-induced hematuria in an elderly patient with acute decompensated heart failure. Hematuria may be caused by streptokinase, and the symptom found was blood in urine. But these symptoms are reversible after stopping streptokinase; proper counseling is necessary for implementation and effective outcomes. Clinicians should be aware of this potential adverse effect, particularly in patients undergoing simultaneous anticoagulant therapy or anti-platelet medications. Monitor closely for any signs of renal injury or hematuria during the thrombolytic therapy.

STRENGTH OF THE STUDY:

The present study explains the adverse effect of streptokinase

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